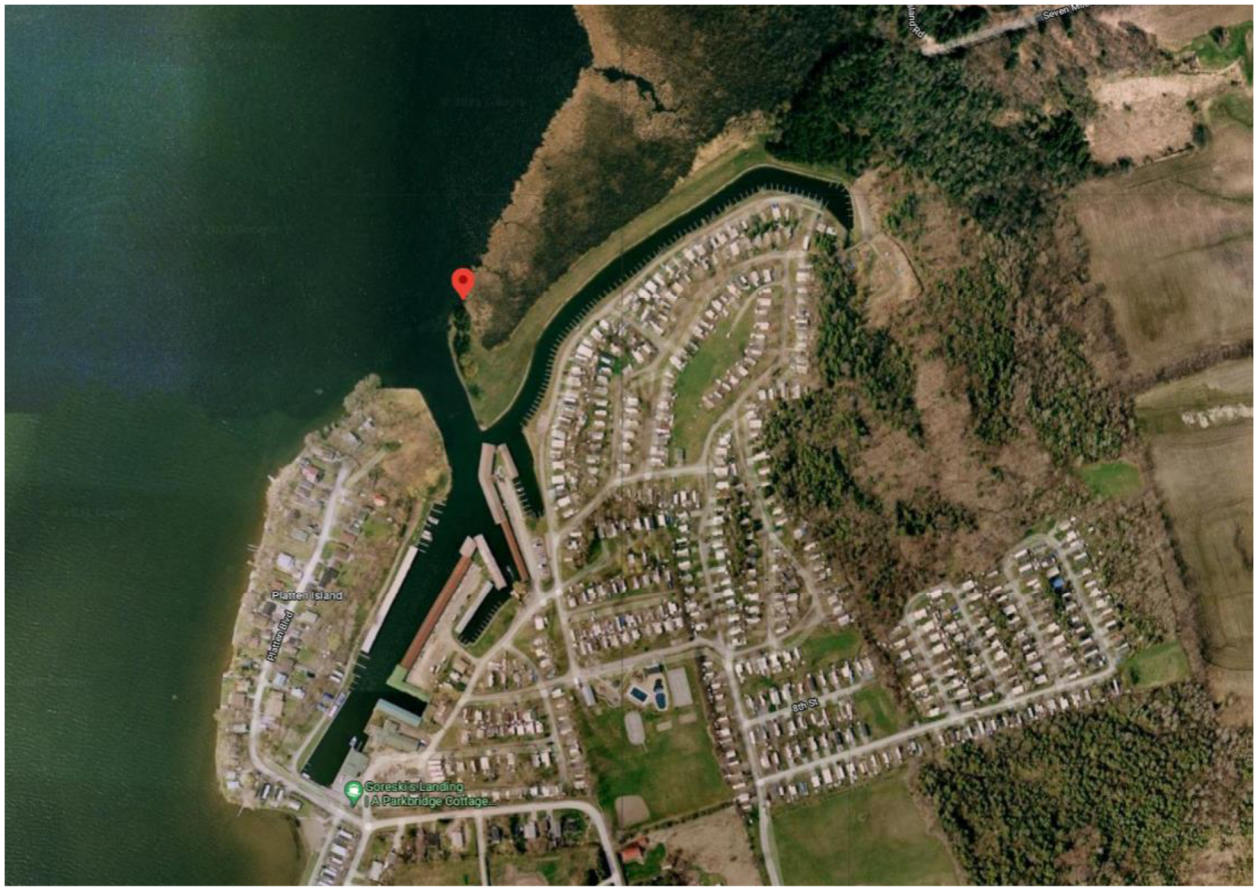
# Basic Impact Assessment

## Outfall Pipe, Scugog Landing Resort (formerly Goreski's Landing Resort), Lake Scugog, Scugog Township




July 2022

Parks Canada Parcs Canada

Canada

# Environmental Impact Assessment Version Control

*This section serves to control the development and distribution of revisions to the Environmental Assessment.*

| Document Number | Amendment Number | Date | Brief Description of Change |
|---|---|---|---|
| 1 | 0 | 2021-06-15 | Original Draft |
| 1 | 1 | 2021-11-04 | Revised Draft |
| 1 | 2 | 2022-03-04 | Revised Draft |
| 1 | 3 | 2022-05-20 | Revised Draft |
| 1 | 4 | 2022-07-26 | Final |

# Basic Impact Assessment

Parks Canada
Version IAA 2019

## 1. PROJECT TITLE & LOCATION

### 1.1 Background

Goreski's Landing Resort, recently renamed Scugog Landing Resort (the 'Resort') is located on the shoreline of the western basin of Lake Scugog at 225 and 226 Platten Boulevard, approximately 10 km north of Port Perry in the Township of Scugog. The Resort is a seasonal campground operating from May to October and consisting of 518 RV sites and recreational amenities including: 406 covered and non-covered boat slips, a restaurant and store, a beach, two comfort stations, and a recreational area with swimming pools, splash pad and a change room. A new sewage treatment plant (STP) with a treated effluent discharge pipe and outfall to Lake Scugog are proposed to replace the existing tile beds, which are failing.

Project Location: 44.1661600234251, -78.91161169126671

The following studies have been completed in support of the new STP including:

1. Goreski's Landing Environmental Impact Study – Proposed Sewage Treatment Plant and Associated Infrastructure was completed by Hutchinson Environmental Sciences Ltd. (HESL) in 2019 and is included in Appendix 6. This Environmental Impact Study (EIS) is focused on the characterization of natural heritage features and functions on the property, determination of impacts from the proposed development and recommendation of mitigation measures to minimize negative impacts. It was conducted through a review of background documents and field investigations undertaken in the 2019 field season. The data collected was used to identify significant natural features and functions present and requirements for protection, in accordance with the relevant environmental policy framework.

2. Goreski's Landing Cottage and RV Resort – Receiving Water Assessment for Surface Discharge of Treated Wastewater Effluent to Lake Scugog completed by HESL in 2017 and is included in Appendix 7. The Receiving Water Assessment was completed to assess the impacts of treated effluent on the water quality in Lake Scugog. Recommendations were made for wastewater treatment and the objectives will be enforced through an Environmental Compliance Approval (ECA). The report concluded that the servicing upgrade is an improvement from a nutrient loading perspective.

### 1.2 Land Ownership

Lake Scugog is part of the Trent Severn Waterway (TSW) and is federal lands under the jurisdiction of Parks Canada (PCA).

The land on which the sewage treatment plant is proposed is owned by Parkbridge Lifestyle Communities Inc.

## 2. PROPONENT INFORMATION

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Parkbridge Lifestyle Communities Inc.
70 Huron St, Collingwood, Ontario L9Y 4L4
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## 3. PROPOSED PROJECT DATES

Outfall Pipe Installation within Parks Canada Jurisdiction:
Planned commencement: 2022-07-18
Planned completion: 2022-08-12

## 4. NOTICES ON REGISTRY

Title for Registry: Outfall Pipe, Lake Scugog, Scugog Township
Project notice posted on Registry: 2021-04-30
BIA or any permits approval cannot be taken before: 2021-05-30

## 5. PROJECT FILE NUMBER (internal /Registry)

Fisheries and Oceans Canada: 21-HCAA-00123
Transport Canada: NPP 2021-403652
Parks Canada: IA # TS-2020-28, Realty # TSW 190213

## 6. NOTE ON BASIC IMPACT ASSESSMENT DOCUMENT:

The environmental constraints, best management practices and mitigation measures outlined within this Basic Impact Assessment (BIA) shall be adhered to and implemented accordingly. The information presented within this document may be appended to subsequent future BIA(s) for similarly-scoped projects, or for possible future amendments to this BIA to address changes in the scope of work of this project. Additional prescribed mitigation within the future BIA(s) are to be adhered to and implemented in conjunction with that of this (the Initial) BIA, with the exception of mitigation measures which are detailed to supersede specific mitigative measure outlined within (this) the Initial BIA.

## 7. PROJECT DESCRIPTION

### 7.1. General Scope:

The Resort is a seasonal trailer park campground with a marina and boat docking services. The overall intent of this project is to install a new STP outfall pipe into Lake Scugog as part of sewage system upgrades at The Resort in Scugog Township.

### 7.2. Project Components:

Parks Canada and Transport Canada's jurisdiction is limited to shoreline area below the high-water mark and the waterbody of Lake Scugog. For this project, this includes installation of the

outfall pipe within the limits of Lake Scugog and the outfall diffuser. Other on land components of the STP project as a whole fall outside of Parks Canada and Transport Canada's jurisdiction, and are therefore not included as part of the scope of this BIA. For completeness, terrestrial components of the work on land which could potentially impact Lake Scugog, and work components directly related to the works within federal jurisdiction (i.e. Horizontal Directional Drilling [HDD]) have been included in the BIA in addition to the in-water work.

7.2.1. Primary works:

Proposed 75 mm diameter HDPE effluent pipe extending from the STP to an outfall diffuser located 200 m offshore, north of the marina entrance. See Drawing SS-1 in Appendix 3 for location details. The 200 m long outfall pipe is to be installed by HDD at a minimum depth of 1.5 m below the lakebed. The outfall structure at the end of the outfall pipe will consist of a 3.5 m long diffuser pipe mounted to a precast concrete slab which will rest on the lake bed. The diffuser pipe and pre-cast concrete slabs shall be lowered into place via a crane on a floating barge and installed with the assistance of divers. See Drawing PP-1 in Appendix 3 for additional details.

7.2.1. Secondary works:

In order to limit adverse impacts to the surrounding environment, erosion and sediment control (ESC) and tree protection measures are proposed as shown on Drawing SS-1 in Appendix 3.
The construction access route on land to the HDD pit is identified on Drawing SS-1 in Appendix 3. Construction access will be contained within existing manicured lawn and existing gravel road surfaces. Construction access in water will be provided by a barge to facilitate the installation of the outfall pipe and outfall diffuser.

Shallow pits will be dug at HDD sending locations (as indicated on Dwg. SS-1, Appendix 3). In order to contain any excess boring fluid, a hydrovac truck will be present during drilling operations to remove any excess boring fluid. All boring fluid will be disposed of offsite at a licensed facility. Any dewatering required will be done by hydrovac truck and disposed of offsite at a licensed facility.

## 7.3. Schedule:

The duration of the outfall pipe installation within the limits of Lake Scugog is approximately 25 days from August 8, 2022 to September 2, 2022. The outfall pipe installation by HDD is to occur within the first two (2) weeks, followed by in-water work to complete the installation of the outfall pipe and outfall diffuser in the following two (2) weeks. A more detailed construction schedule is provided in Appendix 4.

Work activities shall be scheduled and conducted in accordance to environmental timing restriction windows:

- In-water works, which may occur, must be timed to adhere to appropriate fisheries timing windows (restriction from March 15th to July 15th) of any year to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed. Plan to minimize duration of in-water works wherever possible.

- Construction in areas of potential turtle habitat(s) during the turtle nesting season from May 15th to August 15th of any year shall be avoided to best extent possible in order to protect potential local turtle residents.
- In compliance with the *Migratory Bird Convention Act* (*MBCA*), no removal of trees or other vegetation during the breeding bird window from April 1st to August 31st is to take place of any year.
- Removal of snag trees and structure providing potential bat roosting habitat is to be avoided to greatest extent possible during bat breeding and roosting season (April 15th – August 30th).

## 8. VALUED COMPONENTS LIKELY TO BE AFFECTED

### 8.1. Navigability and Public Safety:

The project site includes a marina and the project has the potential to affect navigation in the area during construction. Current use of the waterway includes recreational power boating (pleasure craft), fishing, swimming and canoeing.

The proposed diffuser pipe structure at the STP outfall has a footprint of 5.4 m x 1.8 m and will extend approximately 0.475 m above the lakebed in 2.5 m deep water. This exceeds 5% of the water depth and is therefore not considered a minor work under the *Canadian Navigable Waters Act* (*CNWA).*

The proposed outfall structure is not expected to interfere with a maximum vessel draft of 1.2 m. To facilitate the installation of the outfall pipe and outfall diffuser, a barge will be in place at the location of the outfall diffuser as shown on Drawing SS-1 in Appendix 3. In accordance with the construction schedule provided in Appendix 4, the maximum duration that the barge will be present at the location of the outfall diffuser is two (2) weeks.

### 8.2. Water Quality

Lake Scugog is a large, shallow lake formed by the damming of the Scugog River in 1837. Scugog Island separates the lake into two distinct basins, the western basin and the eastern basin, that flow north and east to the lake's single outlet to the Scugog River. The Lindsay Dam on the Scugog River controls the water depth, area and volume of the lake. There are two major inlets to the lake (the Nonquon River discharges to the western basin and Blackstock Creek discharges to the eastern basin) and numerous other small inlets around the lake.

Aquatic vegetation is abundant throughout much of the lake and, in particular in the area of the proposed STP outfall pipe. The lake bottom and shoreline near the Resort marina have been historically altered by dredging, shoreline stabilization with cobbles/boulders, water level control and boating.

Water quality in Lake Scugog is characteristic of a productive, shallow lake located in southern Ontario. General chemistry, major ion content, and nitrogen and metal concentrations are generally similar between the east and west basins, but phosphorus concentrations were typically higher in the west basin reflecting high nutrient loads from Port Perry and the Nonquon River. All measured parameters were within applicable Provincial Water Quality Objectives (PWQO) and Canadian Environmental Quality Guidelines (CEQG) for the protection of aquatic life, with the exception of total phosphorus.

Water quality data was analyzed in the Receiving Water Assessment (HESL2017), included in Appendix 7. Further details regarding the background water quality of Lake Scugog is available in Section 2.2.2, Table 2, Page 62/105 of the Receiving Water Assessment report.

## 8.3. Fish and Fish Habitat

Fish habitat and fish species present in Lake Scugog were identified through the EIS process completed by HESL, 2019, and is contained within Appendix 6. Details regarding the fish habitat and fish community in Lake Scugog are summarized below.

Lake Scugog is a large (8,256 ha), shallow (mean depth - 1.5 m) lake that supports a warmwater fish community (NDMNRF 2019). Aquatic habitat was characterized on July 10, 2019 along the littoral environment of Lake Scugog where the effluent outfall pipe is proposed to be located. Habitat features were compared to the habitat requirements of resident fish species to determine the presence of any habitat that supports critical life stages such as spawning.

An aquatic habitat assessment was completed in the vicinity of the proposed effluent outfall where it will cross the marina basin, along the Lake Scugog shoreline and the nearshore littoral environment. Information collected included water depths, substrates, aquatic vegetation, in-situ cover, and riparian vegetation.

The aquatic habitat in the littoral environment was relatively similar along the shoreline within the project site and throughout the study area. Maximum water depths were relatively shallow (i.e., <2 m) throughout the study area and extended >20 m from the shore. Substrates were predominantly unconsolidated organics, while cobble/boulders were abundant along the shoreline of the marina basin where they have been placed to support the shoreline and minimize wave-induced erosion. Aquatic vegetation was abundant throughout the study area and included the following species: Sago Pondweed (*Stuckenia pectinate*), Common Waterweed (*Elodea canadensis*), Richardson's Pondweed (*Potamogeton richardsonii*), Large Leaved Pondweed (*Potamogeton amplifolius*), Pondweed spp., White Water Lily (*Nymphaea alba*), Water Celery (*Vallisneria spiralis*), Eurasian Milfoil (*Myriophyllum spicatum*), Milfoil spp., Common Frogbit (*Hydrocharis morsus-ranae*), Duckweed (*Lemnoideae* spp.), and filamentous algae. Other cover habitat such as large woody debris was generally absent. In-water slopes were steepest (1:1, where 1 m of water depth was located 1 m from shore) near the edges of the marina basin where previous dredging has likely occurred, and rocky substrates were present, while lesser slopes were observed elsewhere.

A total of 15 fish species were identified (Table 1) in Lake Scugog through Land Information Ontario (NDMNRF, 2019). All of the species recorded are common, tolerant fish species found throughout Ontario. One non-native species, Common Carp (*Cyprinus carpio)*, was identified in Lake Scugog and is widespread throughout the western arm of the lake. No aquatic Species at Risk (SAR) were identified through the background review.

Included in the table below is a list of fish species present in Lake Scugog.

**Table 1: Fish Species in Lake Scugog (NDMNRF2019)**

| Common Name | Scientific Name |
|---|---|
| Black Crappie | *Pomoxis nigromaculatus* |
| Bluegill | *Lepomis macrochirus* |
| Brown Bullhead | *Ameiurus nebulosus* |
| Common Carp | *Cyprinus carpio* |
| Golden Shiner | *Notemigonus crysoleucas* |
| Largemouth Bass | *Micropterus salmoides* |
| Muskellunge | *Esox masquinongy* |
| Pumpkinseed | *Lepomis gibbosus* |
| Rock Bass | *Ambloplites rupestris* |
| Smallmouth Bass | *Micropterus dolomieu* |
| Spottail Shiner | *Notropis hudsonius* |
| Walleye | *Sander vitreus* |
| White Sucker | *Catostomus commersonii* |
| Yellow Bullhead | *Ameiurus natalis* |
| Yellow Perch | *Perca flavescens* |

Aquatic habitat in the study area has been altered by a wide variety of anthropogenic activities such as dredging, shoreline stabilization, water level control and boating. Abundant aquatic vegetation provides both spawning and nursery habitat for a variety of warmwater fish species listed in Table 1, but it is important to note that this type of littoral habitat is ubiquitous throughout Lake Scugog and is found in a more naturalized setting in many other areas. Nearshore conditions are similar even out to the outfall diffuser location.

The outfall pipe will be horizontally directional drilled (HDD) 1.5 m below the lake bed and the outfall diffuser will be located approximately 200 m from the Lake Scugog shoreline. The outfall diffuser will sit on top of concrete slabs placed on the lake bed. These slabs collectively measure 5.4 m x 1.8 m for a total area of approximately 10 $m^2$.

## 8.4. Erosion and Sediment Control

Terrestrial Soils and landforms consisting of, and immediately surrounding, the marina and resort have been historically disturbed by development. Additionally, in-water areas within the marina and shoreline adjacent to the marina have been historically altered by dredging, shoreline stabilization with cobbles/boulders, water level control and boating.

Erosion and sediment control (ESC) measures are required where there is surface disturbance due to construction activities. Due to the outfall pipe installation by HDD, it will be critical to implement erosion and sediment controls at the following locations:

- Outfall diffuser due to lakebed disturbance during HDD operations.

- HDD pit locations where construction equipment will be present and isolated excavations are required to contain drilling fluid and make pipe connections.

Details of the proposed ESC measures are provided in Section 9 and within drawing SS-1 in Appendix 3.

## 8.5. Vegetation

HESL conducted plant surveys to characterize vegetation communities using standard Ecological Land Classification (ELC) techniques (Lee et al. 1998) on July 10, 2019 as part of the EIS (HESL 2019, Appendix 6). All vascular plant species encountered were documented, taking note of rare or sensitive species. ELC units were mapped on aerial photography in the field and a plant species list compiled from observations. The extent of the Seven Mile Island Provincially Significant Wetland (PSW) was delineated following the protocol of the Ontario Wetland Evaluation System (Government of Ontario 2014). Vegetation communities relative to the project site are detailed below.

The Seven Mile Island PSW extends into the northwest portion of the property and is defined as a key natural heritage feature under the Durham Region and Township of Scugog Official Plans. The Seven Mile Island PSW is bordered by a manicured lawn along the edge of the property and by Lake Scugog to the west.

Vegetation communities located within the project site were mostly anthropogenic in nature with manicured lawn. Immediately adjacent to the project site, vegetation communities consisted of the following:

- Reed-Canary Grass Graminoid Mineral Meadow Marsh Type
- Speckled Alder Organic Deciduous Thicket Swamp Type
- Fresh-Moist White Cedar Coniferous Forest Type

Part of the PSW on the property is dominated by two invasive plant species: Reed Canary Grass (*Phalaris arundinacea* subspecies *arundinacea*) and Common Reed (*Phragmites australis* subspecies *australis*), both of which are fast-growing species that outcompete native wetland plants and destroy associated wildlife habitat (HESL 2019; Photo 4). No rare vegetation species were observed, however three (3) Butternut (*Juglans cinerea*), an endangered SAR in Ontario, were observed. These individuals are well removed from the project site and will not be impacted by the proposed works.

No trees will be removed as part of the proposed works. Some vegetation disturbance and removal is anticipated, however this is restricted to manicured lawned areas, as indicated in the project's Drawings (see Appendix 3, Drawing SS-1).

## 8.6. Wildlife

The area surrounding the construction area is likely utilized by a variety of aquatic and terrestrial wildlife.

Migratory birds utilize the vegetation adjacent to the site, and waterfowl can also be found on the water as well and on the surrounding lands. Furthermore, it is possible that there is turtle nesting habitat along the embankments, and terrestrial areas within and adjacent to the to the construction area.

Due to that some vegetation may be disturbed, there is potential to affect birds and other wildlife species, both aquatic and terrestrial. Migratory birds, their nests and eggs are protected under the MBCA (1994). Project works that are potentially disruptive activities to nesting birds, such as vegetation clearing, shall be avoided during the nesting period.

### 8.6.1 Amphibians

Review of the Ontario Reptile and Amphibian Atlas (ORAA) recorded nine (9) amphibian species in the 10 km2 square 17PJ69 that encompasses the subject property, none of which are SAR (Ontario Nature 2018). These species are listed in Appendix 15.

Amphibian surveys were completed following protocol outlined in the Marsh Monitoring Program (Bird Studies Canada et al. 2009). HESL completed surveys on May 16, June 11 and July 6, 2019 between 20:10 and 22:00 h. Temperatures during surveys ranged from 13° to 23°C, with gentle breezes, and clear to overcast skies. Light rain fell during part of the May 16 survey, otherwise there was no precipitation. Each station was surveyed for 3 minutes on each visit and amphibian species, abundance and location were recorded.

Two amphibian species were heard calling during amphibian surveys, both associated with the PSW: Spring Peeper (*Pseudacris crucifer*) and Green Frog (*Lithobates clamitans*). Neither of these frogs are SAR. No amphibians were recorded calling on the June 11 survey date.

### 8.6.2 Birds

The Ontario Breeding Bird Atlas (OBBA) recorded 106 bird species in the 10 km$^2$ square 17PJ69 that encompasses Goreski's Landing Resort, including seven SAR (Bird Studies Canada et al. 2006).

HESL conducted two early morning breeding bird surveys to document the bird communities in habitats on and adjacent to the property that might be impacted by the proposed works. Habitats were surveyed by slowly traversing the area (or adjacent area in the case of the PSW) and recording all birds heard or seen during our visits on aerial photo maps of the site, in the approximate location where they were detected (except birds obviously in transit between other locations, which were not recorded). Birds were assumed to be breeding if in suitable habitat and displaying breeding behaviour (e.g., singing male, pair observed together, adult visiting probable nest site, adult nest- building, adult carrying food for young). The unit of observation was an assumed pair (i.e., a single bird, mated pair or family of parents and chicks would all be recorded as a single unit). HESL noted any species designated at risk federally and/or provincially, as well as species considered area sensitive. Surveys were carried out on May 27 and June 21, 2019, between 06:45 and 08:45 h. Weather conditions during this time ranged from 0-80% overcast,

with no wind to light breezes, no precipitation, and temperatures between 9°-17°C. The results of the breeding bird surveys as they relate to the project site are detailed below.

A total of 31 bird species , HESL 2019, Appendix 6 - Appendix B – Sites 2 & 4) were documented on or adjacent to the project site during field surveys. This included five area-sensitive species (Common Loon, (*Gavia immer)*; Hairy Woodpecker, (*Picoides villosus)*; Veery, (*Cathaurs fuscescens)*; Black-and-white Warbler, (*Mniotilta varia)*; and American Redstart, (*Setophaga ruticilla)*). The habitat requirements of area-sensitive birds vary by species. For example, American Redstart requires a minimum of 100 ha of continuous forest (NDMNRF 2000).

Two SAR were recorded on the property: Eastern Wood-pewee (designated as special concern federally and in Ontario) and Barn Swallow (designated as threatened federally and in Ontario) (HESL 2019, Appendix 6). Further details on SAR birds are provided in Section 8.7.1 below.

The full list of breeding birds species identified on the Goreski's Landing property is provided in Appendix 2, Page 51/53 of the EIS (HESL, 2019), contained within Appendix 6.

## 8.7. Species at Risk

As detailed in the EIS (HESL, 2019), contained in Appendix 6, a thorough background review was completed to identify potential species of conservation concern in the area. Background sources included:

- Email and telephone correspondence with the Ontario Ministry of the Environment, Conservation and Parks, Kawartha Conservation and the Township of Scugog;
- Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), Natural Heritage Information Centre (NHIC) records of SAR and natural areas (NDMNRF 2014a);
- NDMNRF's Natural Heritage Reference Manual and SWH resource material (NDMNRF 2000, 2010; NDMNRF 2015);
- Federal Species at Risk Public Registry (Government of Canada 2018);
- ORAA (Ontario Nature 2018);
- OBBA records for the area (Bird Studies Canada et al. 2006);
- eBird (eBird 2012)
- iNaturalist (iNaturalist 2019);
- Ontario Butterfly Atlas (iNaturalist 2021); and
- DFO Aquatic SAR Mapping (DFO 2021).

In addition to the list above, Parks Canada also provided a list of additional SAR from their internal NHIC database to be included in the screening (Table 2).

Through background review, three SAR have been recorded in proximity to the property: Least Bittern (*Ixobrychus exilis*), Bobolink (*Dolichonyx oryzivorus*) and Eastern Wood-pewee (NDMNRF 2014a) and two SAR were observed in the study area (Barn Swallow and Eastern Wood-pewee).

Review of the OBBA in the 10 km² square 17PJ69 that encompasses the entire Goreski's Landing property, identified seven SAR (Bird Studies Canada et al. 2006). Four of these SAR have potential habitat in the forest or open areas on site: Red-headed Woodpecker (*Melanerpes erythrocephalus*), Eastern Wood-pewee (*Contopus virens*), Wood Thrush (*Hylocichla mustelina*) and Barn Swallow (*Hirundo rustica*).

In addition, iNaturalist has a record of endangered Butternut less than 1 km south of Goreski's Landing (iNaturalist 2019).

Three SAR were detected during field surveys (i.e. vegetation community and breeding bird surveys) on the property by HESL and include: Butternut, Eastern Wood-pewee and Barn Swallow.

Furthermore, field investigations identified suitable potential habitat for Least Bittern, Midland Painted Turtle (*Chrysemys picta marginata*) and Snapping Turtle (*Chelydra serpentina*) in the PSW to the north of the property.
Section 8.7.1 to 8.7.6 below discusses SAR that were identified through background review and through field investigations completed by HESL.

#### 8.7.1. Birds

Barn Swallows were observed foraging over the canal and manicured lawn beside the PSW and appeared to be using the boat houses for nesting during the breeding bird assessment. Barn Swallow breed in open country, typically near water. It often relies on human structures for nest sites, such as ledges and walls of old barns, culverts and bridges. Barn Swallow is designated as threatened in Ontario and Canada, meaning that the species may become endangered if action is not taken to address threats to its populations. The main factors affecting populations appear to be loss of nesting sites (e.g., open barns) and foraging habitat (e.g., open farmland) due to changing agricultural practices, as well as large scale declines in insect prey likely due to pesticide use (COSEWIC 2011; NDMNRF 2018b).

Black Tern were identified by Parks Canada. Black Terns build floating nests in loose colonies in shallow marshes, especially in cattails (MECP 2021). The species is designated as special concern in Ontario, meaning that the species is not currently endangered or threatened, but may become so due to a combination of biological traits and conservation threats. Possible factors threatening the Black Tern include habitat loss and degradation due to urban development, water pollution and human disturbance in nesting colonies.

Bobolink were identified through the background review of the NHIC in adjacent areas. Bobolink prefer habitat such as tallgrass prairies and open meadows, but in the absence of these habitats will use hayfields for nesting. Bobolink is designated as threatened in Ontario and Canada, meaning that the species may become endangered if action is not taken to address threats to its populations. The main factors affecting populations appear to be potential issues along migration route, mowing of hay in the spring during the breeding season and in July when young birds are still in the nest (MECP 2021).

Eastern Meadowlark were identified by Parks Canada. Eastern Meadowlark prefer habitat such as tallgrass prairies and open meadows, but in the absence of these habitats will use hayfields for nesting. Eastern Meadowlark is designated as threatened in Ontario and Canada, meaning that the species may become endangered if action is not taken to address threats to its populations. The main factors affecting populations appear to be potential issues along migration route, mowing of hay in the spring during the breeding season and in July when young birds are still in the nest (MECP 2021).

Eastern Wood-pewees were heard singing within the forest on the property during the breeding bird assessment. Eastern Wood-pewee breed in deciduous and mixed forests and woodlands, as well as along forest edges. The species is designated as special concern in Ontario and Canada, meaning that the species is not currently endangered or threatened, but may become so due to a combination of biological traits and conservation threats. Possible factors threatening the Eastern Wood-pewee include habitat loss and degradation due to urban development, declines in availability of insect prey, and increased predation on eggs and fledglings by species such as Blue Jays and Red Squirrels (*Tamiasciurus hudsonicus)* (COSEWIC 2011, NDMNRF 2018a).

Least Bittern were identified through the background review of the NHIC in adjacent areas. Least Bittern is typically found in a variety of wetland habitats but prefers cattail marshes near open water. Least Bittern is designated as threatened in Ontario and Canada, meaning that the species may become endangered if action is not taken to address threats to its populations. The main factors affecting populations are the destruction of wetland habitat including shoreline development, wetland loss and drainage (MECP 2021).

Red-headed woodpecker was identified through the background review of the OBBA. Red-headed Woodpecker prefers open woodland and woodland edges and is often found in parks, golf courses and cemeteries which often have dead trees used for nesting and perching (MECP 2021). The species is designated as special concern in Ontario and endangered in Canada. Possible factors threatening the Red-headed Woodpecker include the decline in forested habitat due to forestry and agriculture, and the removal of dead trees (MECP 2021).

Wood Thrush were identified through the background review of the OBBA. The Wood Thrush live in mature deciduous and mixed forests with well developed undergrowth and tall trees for perches. The species is designated as special concern in Ontario and as threatened in Canada. Possible factors threatening the Eastern Wood-pewee include habitat loss and degradation due to urban development, parasitic behaviour from Brown-headed Cowbirds and in some cases over browsing by White-tailed Deer decreasing the number of saplings (MECP 2021).

### 8.7.2. Herpetiles

Midland Painted Turtle were identified through the background review of the ORAA in the 10 km2 atlas square (17PJ69) that includes the property. Midland Painted Turtle are typically found in waterbodies such as ponds, marshes, lakes and slow-moving creeks that include soft bottoms and abundant basking areas with aquatic vegetation (Ontario Nature, 2022). Midland Painted

Turtle is designated as special concern in Canada, meaning that the species is not currently endangered or threatened, but may become so due to a combination of biological traits and conservation threats. The main factors affecting populations are the destruction of wetland habitat.

Snapping Turtle were identified through the background review of the ORAA in the 10 km$^2$ atlas square (17PJ69) that includes the property. Snapping Turtle are typically found in shallow waters in waterbodies with soft mud and leaf litter (Ontario Nature, 2022). Snapping Turtle is designated as special concern in Ontario and Canada, meaning that the species is not currently endangered or threatened, but may become so due to a combination of biological traits and conservation threats. The main factors affecting populations are the destruction of wetland habitat.

### 8.7.3. Insects

One SAR insect, Monarch Butterfly (*Danaus plexippus*) was identified by the Ontario Butterfly Atlas. The Monarch Butterfly is listed as Special Concern in Ontario and in Canada. The Monarch Butterfly requires different types of habitat depending on its life stage, caterpillars require milkweed plants (*Asclepias syriaca*) to feed on in meadows and open areas and adults are found in areas with wildflowers often in more diverse habitats (MECP 2021).

### 8.7.4. Mammals

Four SAR bat species were identified through the background review Eastern Small-Footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-Coloured Bat (*Perimyotis subflavus*).

Eastern Small-Footed Myotis are found in a variety of habitats including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees (MECP 2021). The species is designated as endangered in Ontario. Possible factors threatening the Eastern Small-Footed Myotis include white-nose syndrome, and possibly wind turbines (MECP 2021).

Little Brown Myotis are found in trees and buildings (attics, abandoned buildings and barns) during the summer months and hibernate in caves or abandoned mines (MECP 2021). The species is designated as endangered in Ontario and Canada. The main factor threatening the Little Brown Myotis is a disease known as white-nose syndrome (MECP 2021).

Northern Myotis are found in the boreal forests, roosting under loose bark and tree cavities (MECP 2021). The species is designated as endangered in Ontario and Canada. The main factor threatening the Northern Myotis is a disease known as white-nose syndrome (MECP 2021).

Tri-Coloured Bats are found in a variety of forest habitats as well as barns and other structures (MECP 2021). The species is designated as endangered in Ontario and Canada. The main factor threatening the Tri-Coloured Bats is a disease known as white-nose syndrome (MECP 2021).

### 8.7.5. Fish

Historical records of Lake Sturgeon (*Acipenser fulvescens)* in Lake Scugog were identified by Parks Canada, however no recent records were identified through the background review. In addition, Lake Sturgeon were not flagged or identified as a concern while the project was undergoing a Project Review by the Department of Fisheries and Oceans (DFO) because habitat is not appropriate. Lake Sturgeon require a variety of habitats to carry out its lifecycles. Spawning habitat is found in fast-moving water, rapids or dams. Habitat requirements are not well understood, but may not be as strict as previously understood. The main factor threatening the Lake Sturgeon harvesting, habitat alterations, barriers to migration, entrainment losses, invasive species and pollution (COSEWIC 2017).

### 8.7.6. Vegetation

One vegetation SAR was identified: endangered Butternut tree (*Juglans cinerea*). Butternut is a member of the walnut family, native to central and eastern North America. It grows in deciduous forests, in forest gaps or along the forest edge, since it is intolerant to shade. Butternut prefers moist, well-drained soil and is often found close to streams (Government of Ontario 2019a). In Ontario it occurs south of the Canadian Shield. The species is threatened by Butternut Canker (*Sirococcus clavigignenti-juglandacearum*), an introduced fungal disease that has decimated Butternut populations in the province (Forest Gene Conservation Association undated).

HESL identified three Butternut trees on the property, but they are well removed from the proposed infrastructure and will not be impacted by the proposed works, two in FODM5-6: Dry – Fresh Sugar Maple – Basswood Deciduous Forest Type and one in FOMM6-1: Fresh – Moist Sugar Maple – Hemlock Mixed Forest Type (Appendix 5). All Butternut trees were assessed to be Category 1 (non-retainable), meaning that they are in the advanced stages of disease and do not contribute toward the species' recovery (Government of Ontario 2019b).

A summary of potential and known SAR on the property identified through background review, field investigations and additional NHIC database information from Parks Canada, along the lakeshore or in the adjacent PSW is provided in Table 2 below.

**Table 2:** Federally and Provincially Ranked Species with Potential to be found within the Project Area.

| Common Name | Scientific Name | COSEWIC | SARA Status | ESA Status | Preferred Habitat | Habitat Potential on Project Site** | Likelihood to be Found on Project Site** |
|---|---|---|---|---|---|---|---|
| **BIRDS** | | | | | | | |
| **Barn Swallow** | *Hirundo rustica* | **Special Concern** | **Schedule 1, Threatened,** | **Threatened** | Farmland and open country near water for foraging, buildings, bridges etc. for nesting | Habitat available along shoreline, canal and in marina | Likely - Barn Swallow may use project site for foraging but not nesting |
| **Black Tern** | *Chlidonias niger* | **Not at Risk** | **No Schedule, No Status** | **Special Concern** | Shallow marshes especially in cattails | Habitat available in wetland adjacent to project site | Possible – species may be present in adjacent wetland. |
| **Bobolink** | *Dolichonyx oryzivorus* | **Threatened** | **Schedule 1, Threatened** | **Threatened** | Hay fields, meadows and tallgrass prairies | Habitat not available in project site | Unlikely |
| **Eastern Meadowlark** | *Sturnella magna* | **Threatened** | **Schedule 1, Threatened** | **Threatened** | Hay fields, grasslands, roadsides and orchards | Habitat not available in project site | Unlikely |
| **Eastern Wood-peewee** | *Contopus virens* | **Special Concern** | **Schedule 1, Special Concern** | **Special Concern** | Open deciduous, mixed or coniferous forest, forest clearings and edge, farm woodlots | Habitat not available in project site | Unlikely |
| **Least Bittern** | *Ixobrychus exilis* | **Threatened** | **Schedule 1, Threatened** | **Threatened** | Marshes, swamps and bogs, as well as marshy borders of lakes in dense cattails | Habitat available in wetland adjacent to project site | Possible – species may be present in adjacent wetland. |
| **Red-headed Woodpecker** | *Melanerpes erythrocephalus* | **Endangered** | **Schedule 1, Endangered** | **Special Concern** | Open deciduous forest and forest edge, fields and pasture lands with scattered trees | Habitat not available in project site | Unlikely |
| **Wood Thrush** | *Hylocichla mustelina* | **Threatened** | **Schedule 1, Threatened** | **Special Concern** | Deciduous or mixed forest and hardwood forest edges, often near ponds or swamps | Habitat not available in project site | Unlikely |

| Common Name | Scientific Name | COSEWIC | SARA Status | ESA Status | Preferred Habitat | Habitat Potential on Project Site** | Likelihood to be Found on Project Site** |
|---|---|---|---|---|---|---|---|
| **HERPETILES** | | | | | | | |
| **Midland Painted Turtle** | *Chrysemys picta marginata* | **Special Concern** | **Schedule 1, Special Concern** | **No Status** | Ponds, marshes, lakes and slow-moving creeks | Habitat available in Lake Scugog, wetland and anthropogenic areas | Possible – species may be present in Lake Scugog, adjacent wetland and manicured lawn area |
| **Snapping Turtle** | *Chelydra serpentina* | **Special Concern** | **Schedule 1, Special Concern** | **Special Concern** | Wetlands, ponds, lakes and rivers | Habitat available in Lake Scugog, wetland and anthropogenic areas | Possible – species may be present in Lake Scugog, adjacent wetland and manicured lawn area |
| **INSECTS** | | | | | | | |
| **Monarch Butterfly** | *Danaus plexippus* | **Endangered** | **Schedule 1, Special Concern** | **Special Concern** | Meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers | Habitat may be present | Possible – habitat may be present given the landscape |
| **MAMMALS** | | | | | | | |
| **Eastern Small-Footed Bat** | *Myotis leibii* | **Not at Risk** | **No Schedule, No Status** | **Endangered** | Roost in a variety of habitats and snags, and hibernate in caves and abandoned mines | Foraging habitat available in project site | Possible - Bats may use project site for foraging |
| **Little Brown Myotis** | *Myotis lucifugus* | **Endangered** | **Schedule 1, Endangered** | **Endangered** | Snags, forested habitats, hibernate in caves and abandoned mines | Foraging habitat available in project site | Possible - Bats may use project site for foraging |
| **Northern Myotis** | *Myotis septentrionalis* | **Endangered** | **Schedule 1, Endangered** | **Endangered** | Snags, forested habitats, hibernate in caves and abandoned mines | Foraging habitat available in project site | Possible - Bats may use project site for foraging |
| **Tri-Coloured Bat** | *Perimyotis subflavus* | **Endangered** | **Schedule 1, Endangered** | **Endangered** | Snags, forested habitats, hibernate in caves and abandoned mines | Foraging habitat available in project site | Possible - Bats may use project site for foraging |

| Common Name | Scientific Name | COSEWIC | SARA Status | ESA Status | Preferred Habitat | Habitat Potential on Project Site** | Likelihood to be Found on Project Site** |
|---|---|---|---|---|---|---|---|
| **FISH** | | | | | | | |
| **Lake Sturgeon** | *Acipenser fulvescens* | **Threatened** | | **Endangered** | Freshwater lakes and rivers with soft bottoms of mud, sand or gravel. They are usually found at depths of 5 to 20 metres. | Water depths in the project study area range from 2-5 m deep, therefore habitat is not present in project site | Unlikely NHIC record for Lake Sturgeon is historical and there are no known Lake Sturgeon populations currently in Lake Scugog. |
| **VEGETATION** | | | | | | | |
| **Butternut** | *Juglans cinerea* | **Endangered** | **Schedule 1, Endangered** | **Endangered** | Mixed deciduous forest | Habitat not available in project site or immediately adjacent forested areas. | Unlikely |

****Project site refers to the work area associated with the installation of the wastewater treatment pipe and immediate adjacent areas.**

SAR with the potential to occur in the project site and immediately adjacent areas include:

### Birds

- Barn Swallow
- Black Tern
- Least Bittern

### Herpetiles

- Midland Painted Turtle
- Snapping Turtle

### Insects

- Monarch Butterfly

### Mammals

- Eastern Small-footed Bat
- Little Brown Myotis
- Northern Myotis
- Tri-Coloured Bats

## 8.8. Air Quality and Noise

The project site is located within a largely developed area bordered by some natural landscapes and residential property. Other than the road, associated vehicle activity, and boating activity within/adjacent to the marina, there are little-to-no ambient noise/pollution generating sources. Air quality in the area is assumed to be good.

## 8.9. Invasive Species

The following invasive species have been recorded and confirmed within proximity of the project site location:

**Table 3:** Invasive Species within proximity of project site location

| Common Name | Scientific Name | # EDDmapS Records within ~5 km Radius |
|---|---|---|
| European frog-bit | *Hydrocharis morsus-ranae* | 1 |
| Purple Loosestrife | *Lythrum salicaria* | 1 |
| Eurasion water milfoil | *Myriophyllum spicatum* | 3 |
| Reed Canary Grass | *Phalaris arundinacea* | Identified during field investigations |
| Common Reed | *Phragmites* australis | Identified during field investigations |

*See https://www.eddmaps.org/ontario/ for further information on invasive species sightings*

## 8.10. Cultural Resources

The TSW is a National Heritage Site (NHS) owned and managed by PCA on behalf of all Canadian.

Cultural resources were reviewed as part of the proposed archaeological investigations (see 8.11 below).

## 8.11. Archaeology

PCA archaeology had determined that the project site possesses a high potential for Indigenous artifacts. Due to that there was no known available information on the depth of the Occupational Layer (substrate layer with archaeological potential) of the work area, and that the area was determined to possess a high potential for pre-contact Indigenous artifacts, an Archaeological Impact Assessment (AIA) was required.

As a result of PCA's initial review, an Underwater Archaeological Assessment (UAA) of the submerged federal lands in the area of the new in-water outfall pipe and surface water discharge into Lake Scugog was conducted and is included in Appendix 16. The objective of the UAA was to ensure no submerged archaeological resources of heritage value are lost during the construction activities and where they may be disturbed, they are adequately recorded in accordance with legislated archaeological requirements.

The scope of work for the UAA included review of present site conditions, review of the updated Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) archaeological site databases and Parks Canada sites database, a review of relevant environmental, historical and archaeological literature, and primary historical research including historical maps and aerial photographs.

As a result of the UAA, it was determined that the entire study area has relatively low archaeological potential for both pre-contact Indigenous sites and historical period sites, yet to ensure no unmapped historical features of archaeological concern were present in the study area an on-water field assessment was completed on May 2, 2022. A side-scan SONAR survey and pole camera inspection of the lakebed was completed of the in-water area of potential construction impact and nothing of archaeological concern was found within the study area.

### 8.12. Health and Safety

The health and safety of on-site workers and members of the general public within vicinity of the work areas must be ensured throughout the duration of construction. This may be enforced by restricting public accessibility of the project sites, and ensuring proper compliance with Health and Safety procedures and mitigation by work personnel.

Health and safety concerns for this project are typical of other construction projects of similar size and scope. Long-term the project will improve health and safety at the site and surrounding area by improving effluent quality and simplifying sewage system operations at the resort.

## 9. EFFECTS ANALYSIS

### 9.1. Navigability and Public Safety:

To facilitate the installation of the outfall pipe and outfall diffuser a barge (approximately 20 m x 30 m in size) would be positioned over the outfall diffuser location (identified on Drawing SS-1, Appendix 3) for a maximum of a 2-week period. This will result in recreational boating activities needing to divert around the area while the barge and turbidity curtain are in place.

### 9.2. Water Quality, Fish and Fish Habitat

The proposal has been reviewed by Fisheries and Oceans Canada (DFO) and it was determined that the project will not require an authorization under the *Fisheries Act*. (See Letter of Advice in Appendix 8).

The nearshore environment provides abundant aquatic vegetation and may provide both spawning and nursery habitat for a variety of warmwater fish species, but it is important to note that this type of littoral habitat is ubiquitous throughout Lake Scugog and is found in a more naturalized setting in many other areas.

The outfall pipe will be horizontally directional drilled (HDD) 1.5 m below the lake bed and the outfall diffuser will be located approximately 200 m from the Lake Scugog shoreline. The outfall diffuser will sit on top of concrete slabs placed on the lake bed. These slabs collectively measure 5.4 m x 1.8 m for a total area of approximately 10 $m^2$. This above-substrate permanent alteration to potential fish habitat is comparatively small to that of available viable habitat within the general area. The potential fish habitat within this footprint is not considered specialized, nor is designated critical habitat for aquatic species.

Potential impacts associated with installation of the outfall pipe include:

1. The trenchless installation method to be used for the effluent pipe will minimize impacts on the surrounding aquatic habitat and with little impact on resident fish species following this methodology. One risk associated with HDD is the possibility of an inadvertent fluid loss which is an accidental release of drilling fluids.
2. Short-term, temporary impacts associated with installation of the diffuser such as a temporary increase in turbidity and suspended solids.
3. Loss of habitat (10 $m^2$) from the placement of the outfall diffuser and associated concrete slabs.

HDD operations require the use of boring fluid in order to maintain downhole stability, cool and lubricate tooling and extract cuttings from the borehole. The boring fluid is a bentonite product, Bore-gel by Halliburton, the MSDS for this product is included in Appendix 11. The boring fluid is a clay material that is non-toxic, environmental concerns related to the use of this product is limited to turbidity impacts.

HDD operations have the potential for inadvertent fluid loss. In order to mitigate the risk of inadvertent fluid loss, assessment of the existing site and soil conditions has been completed in consultation with the HDD contractor. Given the existing soil conditions and the proposed depth of the HDD installation, the risk of inadvertent fluid loss has been determined to be very low. Inadvertent fluid loss is most likely to occur where the drill bit enters/exits the ground surface/lakebed due to shallowness of the bore

The fluids mixed with cuttings will be contained in the drill pit until it is collected using a hydro-vacuum excavator and transported to an approved offsite facility for disposal. In addition, drilling pressures will be carefully monitored to ensure that if a drop in pressure occurs it will be detected immediately. A turbidity curtain and sediment fence as described in the erosion and sediment control section will be in place to contain any inadvertent fluid loss in these areas. Further details regarding the inadvertent release of drilling fluid is discussed in Section 10.6 below.
The outfall diffuser will be installed from a barge and the work area will be isolated by a turbidity curtain.

The timeline associated with in-water works will be approximately 4 weeks and will be completed in August, outside of the restricted fisheries timing window of March 15$^{th}$ to July 15$^{th}$. Additional details regarding mitigation measures that are proposed to ensure that the STP outfall works are completed in accordance with relevant policy are detailed in Section 10.

Effluent water quality objectives and limits for the STP are provided in the Environmental Compliance Approval (ECA) from the Ministry of the Environment, Conservation and Parks (MECP). The effluent water quality objectives are supported by the analysis completed in the Receiving Water Assessment (HESL2017), included in Appendix 7. The effluent water quality objectives are as follows:

- Total phosphorus concentrations of 0.1 mg/L
- Carbonaceous Oxygen Demand less than 10 mg/L.
- Total Suspended Solids less than 10 mg/L.

- Total ammonia concentrations less than 2 mg-N/L (June to September) and less than 4 mg-N/L (May and October).
- E. coli less than 100 organisms/100mL (monthly mean geometric density)
- pH maintained between 6 and 8.5.

The proposed STP is designed to meet these effluent water quality objectives. Ongoing monitoring and reporting requirements are required as part of the ECA which is included in Appendix 9.

## 9.3.Erosion and Sediment Control

There is potential for contamination of soil from spills and/or leaks from equipment. Depending on winter conditions/snow cover, there is also potential for soil exposure resulting in erosion, sedimentation and slope instability.

In order to contain sediment generated by the horizontal directional drill hitting the lakebed, a US DOT II Marine Grade turbidity curtain shall be installed as per Ontario Provincial Standards Drawing (OPSD) 219.260 and OPSD 219.261 will be in place prior to any lakebed disturbance. The turbidity curtain will surround the full area of lakebed disturbance (as indicated on Dwg. SS-1 in Appendix 3) and remain in place until sediment has settled. Installation and removal of turbidity curtains shall also be completed in accordance with mitigation outlined in Section 10.

Vegetation disturbance and excavation activities will be kept to the minimum area required for construction activities and will be appropriately managed through the installation and maintenance of effective erosion and sediment control measures. On land, sediment fence as per OPSD 219.130 will be placed surrounding the work area as indicated on Dwg. SS-1 in Appendix 3.

By restricting work activities to within areas identified in approved site plans and previously disturbed areas, in addition to employing appropriate mitigation and monitoring, adverse impacts shall be further minimized (see Section 10).

## 9.4.Vegetation

Terrestrial vegetation communities located within the project site include:

- Manicured Lawn

Vegetation communities located immediately adjacent to the project site include:

- Reed-Canary Grass Graminoid Mineral Meadow Marsh Type
- Speckled Alder Organic Deciduous Thicket Swamp Type
- Fresh-Moist White Cedar Coniferous Forest Type

None of the vegetation communities identified represent limiting or rare habitat within the Lake Scugog watershed. One PSW was identified and is located adjacent to the project site.

Potential impacts to terrestrial vegetation are limited to the manicured lawn area that will be used for the temporary access and the location of the send and receiving pits for the HDD. The area of manicured lawn that will be temporarily disturbed is approximately 2,000 $m^2$. This area is currently used for vehicle access and the temporary access will use the existing route as shown in Figure 5, Appendix 5 and Diagram SS-1, Appendix 3.

Impacts to the manicured lawn area will be temporary and short in duration (2 weeks) and the manicured lawn will be restored to existing conditions. The access route and work area will not encroach into the adjacent wetland and appropriate mitigation measures will be implemented to ensure no negative impacts to the wetland.

No trees will be removed as part of this work.

The duration of the project will be approximately 4 weeks beginning mid July into August. The level of risk associated with the proposed works is low with the implementation of the mitigation measures detailed in Section 10.

### 9.5.Wildlife

Impacts to wildlife from the works associated with the installation of the outfall are anticipated to be negligible. Vegetation and tree removal is not required for the project, with the exception of temporary disturbance to manicured grass areas to accommodate vehicle access and send/receiving pits for the HDD.

The temporary works will be limited to daytime hours and will span approximately 2-4 weeks starting mid-July and into August. Potential impacts to foraging birds will be limited to avoidance or temporary discontinued use of foraging areas in and around the project site during the daytime work schedule. This particular foraging habitat is common and similar habitat is located within close proximity to this area. No tree or vegetation removal shall occur within the nesting season for birds (April 1 to August 31).

Prior to the mobilization of equipment, surveys shall be completed by a certified ecologist to inspect the entire project area (including the access route) for any wildlife. This includes dens, nests, egg and young.

With the implementation of the mitigation measures detailed in Section 10, the level of risk to general wildlife associated with the proposed works is low.

### 9.6.Species at Risk

As indicated in Table 2 above, nine (9) SAR have the potential to 'possibly' or 'likely' occur in the project site and immediately adjacent areas; Barn Swallow, Black Tern, Least Bittern, Midland Painted Turtle, Snapping Turtle, Monarch Butterfly, Eastern Small-footed Bat, Little Brown Myotis, Northern Myotis, and Tri-Coloured Bat. These SAR are further discussed below in relation to potential effects from the proposed project.

On a daily basis, an inspection or sweep of the work area shall be performed prior to commencement of project works and activities to ensure that snakes, turtles, SAR (including SAR dens, nests, eggs and/or young), and any other wildlife are not present in the work area (including access route).

If SAR are discovered, work within the immediate vicinity of the individual shall stop and the specimen is to be left alone and permitted to exit the project site of its own will. Should this not be possible (i.e. individual is injured or entrapped), PCA is to be contacted for further guidance.

Key project mitigations shall include (but are not limited to – see Section 10 below for additional mitigation):

- The contractor is to ensure that all construction crews are trained in how to identify SAR species and provided with the protocols detailing who to contact, information to document and actions to take if a SAR is found (e.g., all work temporarily stopped until advised by the biologist);
- The contractor is to ensure that pre-stressing and visual sweeps are completed by qualified personnel will be conducted prior to grubbing and site preparation;
- Exclusion barriers will be necessary to prevent SAR from entering the work zone;
- Stockpiles will not be stored on site, or shall be isolated with exclusion barriers (i.e. sediment fencing); and
- Areas will be actively restored and stabilized upon de-mobilization.

#### 9.6.1. Birds

**Barn Swallow** –No Barn Swallow nesting habitat or potential habitat located within the project site, or within immediate adjacent areas to the project site, shall be disturbed or destroyed. Barn Swallow may use the project site for foraging, however this particular foraging habitat is common and similar habitat is located within close proximity to this area. Construction of the effluent outfall along the open lawn may cause some short-term disturbance for birds but is not anticipated to directly affect nesting habitat. Therefore, no permanent or long-term impacts are anticipated to Barn Swallow or their habitat from the installation of the STP outfall pipe with implementation of mitigation measures detailed in Section 10.

**Black Tern** – Potential habitat for the Black Tern may be located in Lake Scugog and the PSW located immediately adjacent to the project site. No vegetation removal or encroachment into the wetland is required to complete the works. Therefore, no permanent or long-term impacts are anticipated to Black Tern or their habitat from the installation of the STP outfall pipe with implementation of mitigation measures detailed in Section 10.

**Least Bittern** – Potential habitat for the Least Bittern may be located in the PSW located immediately adjacent to the project site. No vegetation removal or encroachment into the wetland is required to complete the works, therefore no impacts are anticipated to potential Least Bittern habitat.

It is recognized that the Least Bittern is sensitive to human disturbance (noise, light) and that works will take place adjacent to potential wetland habitat. The temporary works will be limited to daytime hours and will span approximately 2-4 weeks starting mid-July and into August. Implementation of appropriate mitigation measures within Section 10, particularly with regards to SAR and noise management shall mitigation any potential adverse impacts to this species.

#### 9.6.2. Herpetiles

**Midland Painted Turtle and Snapping Turtle –** Habitat for Midland Painted Turtles and Snapping Turtles may be present in Lake Scugog, adjacent wetland and manicured lawn areas. Turtles may use easily accessible areas such as gravel pits, sand banks, lawns, or mowed grassy areas for digging their nests. Prior to mobilization of equipment, surveys will be completed of

the entire project area (including access route) by a certified ecologist to check for potential nesting turtles. Should evidence of nesting or a turtle be discovered, all work within the immediate vicinity of the nest/individual is to cease, and PCA Environmental Services (ES) staff are to be contacted for further guidance. If a turtle is encountered during the construction window, the turtle will be left to leave the area on its own.

It is expected that activities such as soil excavation, stock piling of materials, and other forms of landscape disturbance has the potential to attract turtles to the area for nesting. Due to timing of project schedule coinciding within the main turtle nesting window, temporary reptile exclusion fencing shall be required to be installed completely around gravel and soil stockpiles and all other disturbed areas in order to prevent and discourage turtle nesting in the project area. Regular site inspections prior to the commencement of construction activities shall be conducted to observe for the possibility of new nesting sites or individual specimens.

With increased traffic within the construction site and associated access road, there raises the potential for herptiles to be injured/killed by moving vehicles. Vehicles travelling along the access road should do so at reduced speeds to reduce the potential for wildlife strikes.

#### 9.6.3. Insects

**Monarch Butterfly** – The Monarch Butterfly may use the manicured lawn and wetland for a variety of life stages. Most importantly, the caterpillar requires milkweed plants to feed on. No permanent vegetation removal is proposed as part of the works. Temporary disturbance is limited to a minimal area of manicured lawn areas.

Fielded areas containing mixtures of long-grasses and flowering and seeding plants are preferred habitat for this species. With this, it is not anticipated that the planned disturbance to lawned areas within the project site will have any significant adverse impact upon the continuance of local butterfly populations.

#### 9.6.4. Mammals

Roosting habitat for the **Eastern Small-footed Bat, Little Brown Myotis, Northern Myotis and Tri-colour Bat** will not be impacted as no habitat will be impacted or removed. In addition, construction activities will not impede bat foraging at night as construction works will only occur during daylight hours.

The level of risk associated with the proposed works is low or negligible with the implementation of the mitigation measures detailed in Section 10.

### 9.7. Air Quality and Noise

The use of diesel-powered machinery and concrete may result in temporary, localized effects on air quality around the project site. Noise from construction may be disruptive for property owners adjacent to the project sites, recreational users of the associated lands adjacent to the project site.

Given the installation of the outfall pipe by HDD, any dust generation is considered to be minor. Any other impacts to air quality from the construction activities are expected to be of limited

duration, magnitude and geographic extent, i.e., operation of equipment and vehicles, for which mitigation measures are provided in section 10.

Due to the distance from sensitive receivers to the HDD locations (greater than 100 m) only minor noise mitigation measures are proposed in Section 10. The duration of work is less than 1-month and no overnight work is planned. Construction activities will abide by the Township of Scugog Noise by-law.

### 9.8. Invasive Species

As the project involves soil and vegetation disturbance activities, and work within and adjacent to water, there is a possibility for invasive species to be accidentally introduced into and/or spread throughout the project site.

Five invasive species were identified in close proximity to the project site.
The risk of introducing invasive species into the project site is low. Potential avenues for the introduction of invasive species through construction activities may include:

- Movement of topsoil/fill
- Equipment

For the purposes of works associated with the STP outfall pipe no fill is required for the works and therefore there is limited risk to the introduction of invasive species. Topsoil will be excavated for the construction of the north pit, however the hole will be backfilled with the same soil.

Equipment brought to site may pose some risk to transporting invasive species. Prior to all equipment accessing the project site, it will be cleaned and washed. Further details regarding mitigation measures are detailed in Section 10.

### 9.9.Cultural Resources

PCA is committed to protecting and enhancing the TSW and other NHSs in a manner that ensures its long-term functionality, safety, cultural integrity and sustainability. PCA guidelines and mitigation pertaining to the protection of NHS are provided in Section 10.

### 9.10. Archaeology

As a result of the UAA, nothing of archaeological concern was found within the study area however the results may be inconclusive given the assessment strategy. Therefore, based on the results of this investigation it is recommended that:

- Monitoring of any in-water excavation activity and the resulting dredged sediments brought to the surface shall be undertaken under the direction of an Underwater Archaeologist authorized through a Parks Canada Research and Collection Permit. The archaeologist shall be on site during excavation in the event obstructions or objects are found which could potentially be archaeological. Dredged soils shall be examined for artifacts.
- Should any potential archaeological resources be encountered during construction activities (i.e., structural features, timbers, artifact concentrations) all work in the area must stop immediately and a Federal Underwater Archaeologist must be notified.

Should the presence of an Archaeologist be required onsite, Indigenous Communities shall be notified at a minimum two (2) weeks in advance of the intent for Archaeologist's onsite presence. The proponent shall accommodate Indigenous Monitors presence onsite during this work, should the interest be identified by Communities.

Following implementation of archaeological mitigation measures (see Section 10), impacts from construction activities, including staging areas and access roads, are to not likely cause significant adverse impacts to known or potential archaeological resources.

### 9.11. Health and Safety

The prime construction contractor in the role of Constructor will be primarily responsible for ensuring appropriate health and safety measures are followed during construction in conformance with the requirements of the Ministry of Labour.

Due to installation of the outfall pipe by HDD, minimal excavation is proposed and therefore the risk of encountering contaminated material is minimal. Since the proposed scope of work is entirely contained within manicured lawn and gravel road areas, the risk of encountering noxious plants is minimal.

### 9.12. Other Environmental Considerations

Inclement weather including high winds or excessive rainfall could cause ESC measures to fail. Section 10 identifies mitigation measures to deal with inclement weather including an inspection of ESC measures to ensure they are in good condition and adequately secured in advance and following any inclement weather event.

Any changes in water level of the lake are expected to be minor and would not impact the project.

## 10. MITIGATION MEASURES

To mitigate for the potential harmful effects of the project, the following measures shall be implemented:

### 10.1 General:

- The Owner, Parks Canada Agency (PCA) is the main Environmental Authority for Trent-Severn Waterway (TSW) projects. Issues pertaining to Federal and Provincial Legislation (i.e., *Historic Canal Regulations*, *Species At Risk Act*, *Fisheries Act*, *Impact Assessment Act*, *Endangered Species Act, Migratory Bird Convention Act*, etc.), such as that pertaining to Species At Risk (SAR), invasive species, spills, water quality, etc., shall be directly reported to PCA.
- Inform the PCA's Representative and Environmental Services (ES) Officer (TSW in Peterborough) regarding any changes to project plans and/or scheduling. Any changes not assessed under this Basic Impact Assessment (BIA) will require approval from PCA and may require further mitigation measures.
- The contractor is to ensure that all on-site personnel are aware of, and comply with the prescribed mitigation measures within this BIA and any measures outlined within subsequent amendments to this BIA.

- A copy of this BIA and any subsequent amendments shall be kept on site for the duration of the project.
- The Contractor shall adhere to all federal, provincial, and municipal legislation, by-laws, regulations, guidelines, safety standards, and codes governing construction activities. In cases of overlap, the most stringent will apply.
- Should conditions at the work site indicate that there are negative impacts to fish, fish habitat, wildlife, cultural or visitor experience resources, all works shall cease until the problem has been corrected and PCA's ES staff have been consulted/notified. PCA has the right to require that work be altered or ceased immediately.
- As per the *Historic Canals Regulations* (*HCR*) applicable to lands administered by the TSW National Historic Site of Canada, a permit signed by PCA's Ontario Waterways Director or delegate will be required to authorize the project work prior to commencement of the project (to be facilitated by PCA).
- The BIA will form the basis for a permit under the *HCR*. Non-compliance with required mitigation may lead to violations of the permit.

### 10.2 Equipment and Site Condition:

- All machinery and equipment shall be clean, free of leaks, in optimal working condition to avoid leakage of fuels and liquids. Ensure measures are in place to minimize impacts of accidental spills.
- All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum productions, debris etc.) from entering the water. Ensure measures are in place to minimize impacts of accidental spills.
- Any stockpiled materials, or concrete debris shall be stored and adequately isolated and stabilized a minimum distance of 30 m away from any watercourse, drainage course or swales to prevent erosion and subsequent entry into the TSW or removed from the site, in accordance with all federal, municipal and provincial regulations. Stockpiled materials shall be adequately stabilized and isolated to manage surface water runoff and possible sedimentation and erosion. The following mitigation measures will be implemented as required: sediment fence and covering stockpiled materials.
- Store all oils, lubricants, fuels and chemicals within sealed, impermeable containers, within secure areas and upon impermeable-lined drip/spill trays.
- Vehicle and equipment re-fueling and/or maintenance shall be conducted over an impermeable-lined drip/spill tray to allow full containment of spill, off of slopes and away from the water at a minimum distance of 30 m.
- A designated re-fueling depot will minimize the potential for extensive impacts at the site due to accidental releases of substances; proper spill management equipment shall be in place for fueling.
- Drip/spill trays shall be placed under all fuel-powered equipment. Drip trays shall be sized appropriately to encompass the outer perimeter of the equipment/machinery, providing adequate spacing for refueling activities.
- All compressed air/fuel tanks shall be stored off to the side, away from on-going activity, and be adequately protected with an impact-protection barrier.

- Any Above-ground Storage Tanks (ASTs) or other fuel storage tanks on site, are to be stored in compliance with Federal and Provincial storage tank requirements. Specifically, ASTs are to be placed within a secondary containment system of adequate holding capacity, based on the volume of the AST. See: https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/publications/code-practice-storage-tank-systems/part-3.html .
- Self-contained fuel tanks, or fuel tanks so large where sizing a drip/spill tray to be placed underneath said tank would be impractical, at minimum, a spill tray is to be placed at the nozzle/hose end and utilized for all refueling activities.
- There shall be no discharge of chemicals and cleaning agents in or near aquatic habitats; all such substances shall be disposed of at a facility licensed to receive them.
- Spill control and emergency plans will be in place prior to initiation of construction; an emergency spill kit shall be kept on-site and employed immediately should a spill occur. The contractor shall ensure that adequate additional spill clean-up resources are available.
- In the event of a spill, PCA and the Ontario Spill Action Centre (1-800-268-6060) shall be notified immediately. Remediation will be conducted immediately to contain and clean up in accordance with federal and provincial regulatory requirements **AND to the satisfaction of PCA**. Documentation of remediation, testing and results will be provided to PCA. Spills shall be reported directly to the PCA ES (705-750-4900).
- Spill-related environmental incidents or emergencies include (but is not limited to):
    - Chemical spill or petroleum spill;
    - Poisonous or caustic gas emission;
    - Biological or chemical explosion;
    - Hazardous material spill;
    - Sewage spill;
    - Contaminated water into waterways;
    - Release of turbidity into the waterway; and
    - Release of water with pH <6 or >9 into the waterway.
- Operate machinery from dry, stable location on land, or barges.
- Only the working end of machinery shall directly enter the water. Any part of a machine or equipment entering the water shall be free of fluid leaks and externally degreased to prevent any deleterious material from entering the water. Complete the in-water activity as quickly as possible to minimize the time equipment is in the water. Do not leave equipment in water during breaks in work activity.
- Use biodegradable hydraulic fluids for machinery that will be working in or around the lake.
- The Material Safety Data Sheet (MSDS) of any unapproved substances to be utilized onsite (particularly that of substances to be in use in/adjacent to water) shall be provided to PCA ES for review and acceptance.
- All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum productions, debris etc.) from entering the water.
- Any part of a vehicle and/or equipment entering the water shall be free of fluid leaks and externally degreased to prevent any deleterious substance from entering the water.

- Spills kits shall be maintained on site and the contractor will ensure that adequate additional resources are available.
- No tools, equipment, temporary structures or parts thereof, used or maintained for the purpose of this project, shall be permitted to remain at the site after completion of the project.
- All products used for this project shall be utilized according to the appropriate Product Technical Data Sheet, stating guidelines and methods for proper use, and provided by the manufacturer of the product.

### 10.3 Water Quality:

- Ontario Drinking Water Quality Guidelines cannot be exceeded (beyond parameters that currently exist) due to project activities.
- Only clean material free of fine particulate matter shall be placed in or near water where it has been previously planned and authorized.
- Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life will form the baseline for water and streambed quality (see http://ceqg-rcqe.ccme.ca/en/index.html#void).
- Activities causing turbidity or release of sediment will comply with the CCME Guidelines on Total Particulate Matter (see http://ceqg-rcqe.ccme.ca/download/en/217).
- Mitigation, guidance, requirements and best management practices outlined in Ministry of the Environment, Conservation and Parks' (MECP) Environmental Compliance Approval (ECA) (file number **7703-C322FD)** to Parkbridge Lifestyle Inc., dated June 11 2021, shall be implemented and abided by accordingly. See Appendix 9 for further details.

### 10.4 Fish and Fish Habitat:

- Plan in-water works, undertakings and activities to respect timing windows, or as agreed upon by the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed and migrate;
    - No in-water work between March 15 and July 15;
- Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas.
- Limit the duration of in-water works, undertakings and activities so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating).
- Replace/restore any other disturbed habitat features and remediate any areas impacted by the work, undertaking or activity.
- The proponent is advised to abide by those mitigation measures and best management practices outlined within Fisheries and Oceans Canada's (DFO's) online guidance materials: Measures to Avoid Causing Harm to Fish and Fish Habitat (http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html ).
- As per Section 38(4) of the *Fisheries Act*, any death of or injury to fish as a result of the work will be reported without delay to the DFO.

- Mitigation, guidance, requirements and best management practices outlined in DFO's Letter of Advice (file number **21-HCAA-00123)** to Parkbridge Lifestyle Inc., dated March 31 2021, shall be implemented and abided by accordingly. See Appendix 8 for further details.

## 10.5 Erosion and Sediment Control:

- In the event of sedimentation or turbidity caused by construction activity, contractor shall stop all work and install additional sediment barriers as necessary to ensure the lake is protected.
- Ensure that fish exclusion procedures are followed and fish are not trapped within the turbidity curtain during placement.
- Erosion and sediment control measures shall be implemented prior to work and maintained during the work phase, to prevent entry of sediment into the water where site access or other activities cause exposed soil. The following principles should be considered:
    - Diversions to limit run-on water;
    - Reduction of erosional forces by surface water velocity reduction;
    - Reduction of sediment development through sediment collection or anchoring;
    - Sedimentation of mobilized sediments;
    - Filtration of sediment-carrying flows;
    - Collection of captured or contained sediments;
- The size of particles present in the sediment is a key consideration for selecting the appropriate sediment treatment option(s):
    - If the sediment consists primarily of gravel or sand, which are relatively large particles, a single treatment using a more basic technology, such as a sediment trap or sediment bag, may be adequate.
    - If the sediment consists of silt and/or clay, which are relatively small particles, the effluent will most likely need a more advanced technology, such as a filter press or chemical treatment with anionic flocculent and a filtration method.
    - If the sediment consists of a large spectrum of particle sizes, the water may need primary treatment to remove larger particles, followed by secondary treatment to remove finer particles.
- In-water work shall be performed in a manner that minimizes the disturbance of the watercourse bottom and dispersion of sediment.
- Sediment control measures shall be implemented during any in-water work to control turbidity levels. Turbidity curtains, or other appropriate measures, shall be implemented prior to any in-water work that may result in sedimentation. These shall remain in place until all suspended sediments have settled.
- Monitor water quality for unacceptable suspended sediment levels during in water activities. Monitoring shall include the full scope and breadth of any incident.
- All erosion and sediment control measures shall be inspected daily to ensure they are functioning properly and are maintained and/or upgraded as required to prevent entry of sediment into the water.
- Environmental protection measures shall be checked after each extreme weather event.

- If sediment and erosion control measures are not functioning properly, no further work shall occur until the sediment and/or erosion problem is addressed to the satisfaction of PCA.
- All disturbed areas of the work site shall be stabilized immediately and re-vegetated as soon as conditions allow. All exposed areas should be covered with erosion control blankets or other measures to keep the soil in place and prevent erosion until vegetated in the spring.
- Sediment and erosion control measures shall be left in place until all areas of the work site have been stabilized.
- Upon completion of the work all debris shall be completely removed and the area restored to its original state or better. Repair all damages to property due to project activities.
- Sediment control measures and exclusion fencing must be removed in a way that prevents the escape or re-suspension of sediments.
- A US Dot II Marine Grade turbidity curtain will be maintained in the water around all working areas where sediments can enter the watercourse. It will be maintained in the water around all working areas during construction to contain and control the suspension of fines. If water levels/conditions do not permit the flotation of a turbidity curtain, other measures as approved by PCA will be implemented.
- Turbidity curtains should be placed in accordance with US Dot II Marine Grade Specifications. Curtains are to be anchored or weighted down across its length to form a continuous seal on the substrate bed, with adequate floatation at the water's surface to prevent over spills of water.
- With respect to turbidity curtain installation:
    - Perform an initial sweep of the work area to drive fish out prior to completely closing off turbidity curtains surrounding the work area.
    - Deployed turbidity curtains in a manner (i.e. moved in a direction from close to shore/structures outward) that prevent entrapment of fish inside the curtain.
    - Turbidity curtains shall not be deployed fully across the watercourse to serve as a barrier to fish migration.
- No acid-generating rock (containing sulphides) will be used.
- In the event of a significant sedimentation or debris caused by construction activities, the contractor will take appropriate measures to contain and mitigate the problem including the installation of additional turbidity curtains.
- The contractor will maintain a standby supply of pre-fabricated sediment fence barriers, or an equivalent ready-to install sediment control devices.
- Avoid activities that could lead to erosion during excessively wet weather conditions; monitor forecasts for heavy rainfall watches & warnings.
- Filter material will consider the grain size characteristics of the sediment and shall be designed around the principals of maintaining sufficient hydraulic flow and prevention of particle movement through the material.
- Sediment fences shall not have mesh backing and shall be installed as per Ontario Provincial Standards Drawing (OPSD) 219.130

## 10.6 Horizontal Directional Drilling and Dewatering Activities:

- During HDD operations, inadvertent fluid loss can be detected by a drop in drilling pressure. Drilling pressures will be carefully monitored to ensure that if a drop in pressure occurs it will be detected immediately. The following contingency measures are to be implemented immediately in the event of an inadvertent fluid loss:
    - HDD operations will be halted by the drill rig operators immediately upon detection of a drop in drilling pressure or other evidence of inadvertent fluid loss.
    - If boring fluid loss is minor, has not reached the surface and is not threatening to sensitive resources, drilling operations may resume after use of a leak stopping compound.
    - If boring fluid has reached the surface, containment of the spill and notification to the Regulatory Agencies shall occur immediately and Regulatory Agencies shall be consulted regarding clean-up procedures.
    - A spill kit, turbidity curtain and sediment fence shall be stored on site during HDD operations to contain drilling fluid in the event of inadvertent fluid loss.
    - Any material contaminated with Bentonite shall be removed, contained and properly disposed of at an approved offsite facility. The contractor shall notify and take any necessary follow up response actions in coordination with the Regulatory Agencies.
- All drilling cast-offs/cuttings and generated slurry shall be placed within containment basins. Additionally, all waste water pumped from excavated areas shall be placed within containment basins. Containment basins must be of adequate size to contain more than the anticipated volume of waste water and waste debris (i.e. soil cuttings) to be produced. Alternatively, multiple containment basins may be used.
- All containment basins must be of sound structure, impermeable and leak free. All containment basins must be covered for transportation/disposal. Containment basins which contain liquids must also be sealed for transportation/disposal to ensure no spills or leakages occur.
- All HDD waste material and waste water shall be disposed of appropriately at a licensed waste disposal facility.
- Design the drill/ punch or bore path to an appropriate depth below the waterway to minimize the risk of frac-out and to a depth to prevent the line from becoming exposed due to natural scouring of the stream bed. The drill entry and exit points are far enough from the banks of the waterway to have minimal impact on these areas.
- If additional drilling fluids are required, only fresh water shall be used for fluid preparation. No toxic or hazardous substances are to be added to the drilling fluid, unless reviewed and approved by PCA.
- Excavate entry/exit drill holes/pits beyond the high water mark, far enough away from any waterway to allow containment of any sediment or deleterious substances above the high water mark.
- All waste generated by drilling shall be disposed according to Ontario Regulation 558/00. R.R.O. 1990 (General – Waste Management).
- Monitor the waterway to observe signs of surface migration (frac-out) of drilling mud during all phases of construction.
- Keep all material and equipment needed to contain and clean up drilling mud releases on site and readily accessible in the event of a frac-out.
- If required, implement the frac-out response plan that includes measures to stop work, contain the drilling mud and prevent its further migration into the waterway. Notify all applicable authorities and prioritize clean up activities relative to the risk of potential harm. Dispose of the drilling mud in a manner that prevents re-entry into the waterway.

- Ensure clean up measures do not result in greater damage to the banks and waterway than from leaving the drilling mud in place.
- In the event of a frac-out, implement the contingency crossing plan including measures to either re-drill at a more appropriate location or to isolate the waterway to complete the crossing at the current location.
- Have additional turbidity curtains and a CO2 bubbler system readily available on site for quick deploy in event of in-water frac-out.

### 10.7 Vegetation:

- Site clearing/commencement of construction must be planned to occur outside of sensitive nesting times - April 1 to August 31. If any work must occur outside this period, due to unforeseen circumstances, then consult with PCA on requirements.
- Demonstrate all construction sites and laydown areas; identify and keep work activities confined to planned areas and within previously disturbed areas. Trees, shrubs and vegetation which are to remain throughout construction should be properly identified and delineated and protected.
- Local soil will be stockpiled and re-used as opposed to bringing in soil from other locales.
- Restore the site and to a specific future condition – i.e. as per restoration plan; ensure re-planting success. Native grasses, shrubs, etc. should be planted to match existing species growing on the sites. Common milkweed should be actively restored. The disturbed areas will be restored to pre-construction conditions and will be returned to manicured lawn.
- Trees (and associated root systems), shrubs and vegetation which are to remain throughout construction should be properly identified and delineated with flagging tape or temporary fences.
- Where practical, the branches of the large trees should be trimmed back as the first option rather than cutting the entire tree.
- Only cut trees using tools designed for tree cutting activities (e.g. chainsaw, brush saw).
- Whenever possible, vegetation should be trimmed in early spring, late fall or winter. Trimming when the plant is actively growing (i.e. late spring summer and early fall) can further stimulate growth, weakening the plant and making it susceptible to disease.
- Prune limbs close to the tree trunk. For a clean cut, make a shallow undercut first, then follow with the top cut. This prevents the limb from peeling bark off the tree as it falls. Do not use an axe for pruning.
- Delineate areas to be avoided with flagging tape or temporary fences.
- Ensure appropriate handling procedures are followed for noxious weeds such as Giant Hogweed (*Heracleum mantegazzianum*), Poison Ivy (*Toxicodendron radicans*) or Wild Parsnip (*Pastinaca sativa*).
- Root systems of trees identified to remain should be properly delineated and fenced off, so as to protect the root systems from being crushed and impacted by machinery.
- In the event that the installation of root-protectant fencing is not possible and/or ideal, alternative measures, as approved by PCA, must then be implemented. Such measures must provide a sufficient amount of soil compaction prevention with regards to the highest level of activity to occur within the immediate area of protection.

- A 10m buffer is planned between laydown areas and shoreline. Riparian vegetation removal will be minimized to the extent possible. Trees, shrubs and vegetation which are to remain shall be identified, delineated and protected.

### 10.8 Wildlife:

- If a turtle is found within the limits of the fencing it should be left alone to leave the area if possible. If found in the project area, turtles may need to be relocated prior to commencing work (with permits required from Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) for relocation). Contact PCA for guidance.
- Once cleared and before staging set-up, temporary reptile fencing, such as polythene/ woven geotextile secured with timber stakes, or material of a similar nature/function, should be installed completely around gravel stockpiles to prevent turtle nesting in the project area. Exclusion fencing should also be installed completely around stockpiled material (wood chips, gravel, earth, etc.) to prevent turtle nesting in the project area. Fencing shall not have mesh or netted backing. For guidance on how to plan and install exclusion fencing, refer to the document titled Species at Risk Branch, Best Practices Technical Note, Reptile and Amphibian Fencing, Ver. 1.1, developed by the Ontario Ministry of Natural Resources and Forestry
- Synthetic plastic Erosion Control Blankets/Mats shall not be utilized, particularly during nesting season, as they pose as an entrapment hazard to turtles and other wildlife. Fibre-based bio-degradable Erosion Control Blankets/Mats are only to be utilized.
- If recommended by a qualified person and approved by PCA, exclusion zones or "no go" areas will be established to protect areas with known residences (e.g., hibernacula, dens, nests).
- Conduct "pre-stressing" activities within a few days prior to the onset of site preparation (vegetation clearing and grubbing) to encourage wildlife to move away from a site.
- Document wildlife encountered on the project site.
- The contractor shall ensure that all vehicles and equipment used by project personnel will follow any construction zone speed limits to reduce the risk of hitting wildlife, as enforced by the site supervisor.
- Work areas will be kept clean and free of potential hazards to wildlife such as wire, cable, tubing, plastic, antifreeze or other materials that wildlife may eat or become entangled in.
- Waste will be stored, handled, and transported in accordance with the Waste Management Plan, including storage of all solid waste in sealed, bear-proof containers.
- Feeding of wildlife is prohibited.
- Attractants (i.e. waste) shall be regularly removed from site to further deter the presence of wildlife in the work area.
- Migratory birds, their nests and eggs are protected under the *Migratory Birds Convention Act (1994)*. Project works or activities are potentially disruptive activities to birds and shall be avoided during breeding times. No vegetation shall be removed from April 1st to August 31st to protect nesting birds.
- On a daily basis, an inspection or "sweep" of the work area shall be performed prior to commencement of project works and activities to ensure wildlife are not present in the work area (include in site checklist).

### 10.9 Species at Risk:

- If a SAR is observed or suspected on or near the worksite (this includes snakes, turtles and/or SAR dens, nests, eggs or young), the species must not be harmed or harassed. If the species does not leave or cannot leave the site, the contractor must immediately stop the works and contact PCA's ES staff on how to proceed. Additional measures to avoid impacts may be required before work can restart. Stand back and allow the animal to leave the site.
- Minimize the disturbed area; clearly mark the work space.
- Park on roads or disturbed area only.
- Temporary reptile exclusion fencing, such as polythene/ woven geotextile secured with timber stakes, or material of a similar nature/function, should be installed to prevent turtles from entering the construction area. Exclusion fencing should also be installed completely around stockpiled material (wood chips, gravel, earth, etc.) to prevent turtle nesting in the project area. Fencing shall not have mesh or netted backing. For guidance on how to plan and install exclusion fencing, refer to the document titled Species at Risk Branch, Best Practices Technical Note, Reptile and Amphibian Fencing, Ver. 1.1, developed by the NDMNRF
- Pre-stressing and a visual sweep for wildlife of the work area (including access route) should be completed by qualified personnel at the start of every work day, to ensure that there are no wildlife within the work area.
- A sweep of the work area (including access route) should be completed at the start of every work day to ensure that there are no turtles within the work area.

### 10.10 Invasive Species:

- To reduce the risk of introducing invasive species, all equipment must be thoroughly cleaned prior to coming to the site. Any machinery that appears to have not been cleaned will not be permitted on site. For additional information or guidance on how to properly clean equipment, see the Clean Equipment Protocol for Industry developed by the Ontario Invasive Plant Council and found here: http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean- Equipment-Protocol_June2016_D3_WEB-1.pdf
- Any equipment or vehicles which are to be used in water, should be thoroughly cleaned before and after use of any visible mud, vegetation, mussels, etc.
- Vessels/equipment should ideally be cleaned with hot water (> 50 °C) at high pressure water (> 250 psi).
- Cleaning of vessels/equipment should be conducted away from waterbodies at a recommended distance of at least 30 m from the shoreline.
- Mud, dirt and vegetation should be cleaned from clothing and footwear prior to entering the work site, and prior to leaving the work site.
- Should an invasive species be encountered (or at least suspected), a photo and report of the specimen should be sent to PCA's EA staff and the Invading Species Hotline at 1-800-563-7711 or online at EDDMapS Ontario: https://www.eddmaps.org/ontario/.
- Use weed-free material (i.e. sand, gravel, etc.) for erosion control and stabilization and weed-free seed and confirm that seed mix to be used for revegetation purposes does not (potentially) contain invasive plants.

**10.11 <u>Cultural Resources and Archaeology:</u>**

- Before any on-site mobilisation/construction work commences, PCA staff will clearly delineate any archaeologically sensitive areas and photo-document this activity for PCA records. These areas will be deemed no-go zones for staging, vehicular traffic and machinery.
- The contractor is to ensure that all personnel working on site undergo a heritage induction to clearly identify the value of the place and how to avoid inadvertent impacts on cultural and archeological resources (known and unknown).
- Vehicular access routes and staging areas will be restricted to present-day roadways, parking lots, exposed bedrock areas and significantly disturbed areas. If this is not possible, the use of protective covering is required. All protective measures employed must be removed following construction and the area restored to a pre-construction state. Excavation is not permitted outside of PCA cleared/reviewed areas during installation or removal of protective covering.
- If archaeological, cultural resources, or character-defining elements (e.g. structural features or artifact concentrations) are encountered or damaged during construction activities, work will cease in the immediate area and PCA shall be contacted for further instruction. PCA's archaeology shall provide advice and assessment of significance, and if necessary, any further mitigation measures. Ensure that all exposed underwater cultural materials are kept submerged and/or wet while waiting direction.
- Inform PCA regarding any changes to project plans and/or scheduling. Any changes not assessed under this BIA will require approval from PCA and may require further mitigation measures.
- Monitoring of any in-water excavation activity and the resulting dredged sediments brought to the surface shall be undertaken under the direction of a certified Archaeologist. The archaeologist shall be on site during excavation in the event obstructions or objects are found which could potentially be archaeological. Dredged soils shall be examined for artifacts.
- Should the presence of an Archaeologist be required onsite, Indigenous Communities shall be notified at a minimum two (2) weeks in advance of the intent for Archaeologist's onsite presence. The proponent shall accommodate Indigenous Monitors presence onsite during this work, should the interest be identified by Communities.

**10.12 <u>Air Quality and Noise:</u>**

- All on-site vehicles are expected to have a Drive Clean Emissions Report in compliance with O. Reg. 361/98: Motor Vehicles under the Environmental Protection Act, R.S.O. 1990, c. E.19. EA Officers may stop a vehicle if they believe the vehicle is emitting excessive exhaust smoke or suspect that emission control equipment has been tampered with or removed.
- Use well-maintained heavy equipment and machinery, preferably fitted with fully functional emission control systems/muffler/exhaust baffles, engine covers, etc. In addition, employ timing and location of construction activities to reduce or minimize the effect of noise on nearby residents, recreational users, and wildlife.
- Machines shall not be left to unnecessarily idle in order to avoid emissions.
- Adhere to local and municipal noise by-laws.

- Notify residents of planned activities that may cause disturbance and schedule them to avoid sensitive time periods.
- Minimize the noise levels from construction activities by using proper muffling devices, in addition to appropriate timing and location of these activities to reduce or minimize the effect of noise on nearby residents, recreational users, and wildlife.
- Due to the proximity of the work site to water, calcium chloride shall not be used to suppress dust.
- Monitor and mitigate public complaints by keeping a record of complaints and addressing any issues raised by the public.

### 10.13 Waste Disposal:

- Littering is prohibited. Garbage and waste material onsite is to be collected daily and stored in appropriate containers/bins.
- Burning or burying of waste is prohibited.
- Recyclable material and waste shall be removed from the site, in accordance with all federal, provincial and municipal regulations, to disposal facilities licensed to receive them.
- Waste containers should be sealed or lined to prevent leakage of liquid wastes.
- Waste generated will be disposed according to regulations (i.e., O. Reg. 102/94 and O. Reg. 558/00, R.R.O. 1990, 347).

### 10.14 Work Area Commissioning:

- Upon completion of work there shall be a final clean-up of the site. No tools, temporary structures, or parts thereof, used or maintained for the purpose of this project shall be permitted to remain at the site or enter the water after completion of the project.
- Ensure that all construction debris and waste is removed from the work area prior to demobilization

### 10.15 Floods, Extreme or Inclement Weather, and Ice Formation:

- Undertake construction under normal weather conditions, to the extent possible, and design the project worksite to withstand variable weather conditions.
- Apply wet weather restrictions on construction activities to reduce surface run-off from exposed work areas and to minimize the risk of inundation.
- The work area shall be stabilized against the impacts of high flow/heavy rainfall events at the end of each workday.
- Work shall be suspended and the work area stabilized when there is a high probability of a rainfall event.

### 10.16 Environmental Monitoring and Reporting

- Environmental mitigation measures shall be inspected daily and a daily checklist/log shall be maintained over the duration of the project.
    - Any deficiencies shall be addressed immediately.
- SAR, Invasive species, and wildlife sightings, or lack thereof, should be reported on the daily inspection checklist.
    - SAR-related incidences should be reported immediately to PCA.

- Any damages should be repaired immediately and any accumulation of sediment should be removed and disposed of as required by all applicable federal, provincial, and municipal laws, regulations, and guidelines.
- The Contractor shall provide a written checklist of for inspection for vehicle/machinery leaks and overall condition, and, for the purpose of invasive species a written record of measures taken to clean vehicles/machinery/equipment.

**11. OTHER Considerations**

☒ Comments received from the public /stakeholder engagement

- Department of Fisheries and Oceans (DFO): Response Letter provided in Appendix 8.
- Ministry of the Environment, Conservation and Parks (MECP): Environmental Compliance Approval (ECA) provided in Appendix 9.
- Kawartha Conservation (KC): Permit provided in Appendix 10.

☒ Indigenous Peoples engagement or consultation

**Indigenous Consultation 2019**

Indigenous consultation was conducted as part of the ECA. Proposal notification letters were issued on September 27, 2019, to the following Indigenous Communities:

- Alderville First Nation (Chief James R. Marsden)
- Curve Lake First Nation (Chief Phyllis Williams)
- Hiawatha First Nation (Chief Laurie Carr)
- Kawartha Nishnawbe First Nation (Chief Kris Nahrgang)
- Mississaugas of Scugog Island (Chief Kelly LaRocca)
- Beausoleil First Nation (Chief Guy Monague)
- Chippewas of Georgina Island (Chief Donna Big Canoe)
- Chippewas of Rama (Chief Rodney Noganosh)

The notification letters outlined the proposed works and suggested that the community provide any questions or concerns regarding the proposal within 30 days of receipt of the letter. The notification letters are provided in Appendix 13.

The Mississaugas of Scugog Island First Nation (MSIFN) Community provided the following comments in response to the September 2019 letter:

- *"Regarding the ECA for the proposed private sewage works upgrades at Goreski's Landing Resort on Lake Scugog, given that the Mississaugas of Scugog Island First Nation own Seven Mile Island within close proximity to the proposed outfall it will be critical to the First Nation to know where this may be placed. Can you please keep us informed as this application moves forward." (Source: email from Dave Mowat, Consultation, Lands and Membership Supervisor, Mississaugas of Scugog Island First Nation, dated November 1, 2019).*

The description and location of the proposed outfall was provided to Dave Mowat, Consultation, Lands and Membership Supervisor, Mississaugas of Scugog Island First Nation via email on November 1, 2019. The email response suggested to contact the reviewer with any questions or concerns by Friday, December 13, 2019. No further questions or concerns were raised as of December 2021.

**Indigenous Consultation 2022**

Indigenous consultation was re-initiated on March 2, 2022 at the request of Parks Canada to reintroduce the project and advise of the proposed archaeological investigation associated with the project. The Project Notification Letters issued on March 2, 2022 (Appendix 12) were issued to the same Indigenous Communities as the original notification in 2019.

Indigenous consultation has been ongoing since the March 2nd Project Notification Letters were issued and a summary of correspondence is included (Appendix 14). The draft BIA and UAA were distributed for review and a minimum of 30-day review was provided for all Indigenous Communities notified. Comments were only received from Mississaugas of Scugog Island First Nation, these comments were provided on July 15, 2022 and are included for reference (Appendix 14). Following a meeting on July 19, 2022 with Mississaugas of Scugog Island First Nation representatives it was confirmed that the comments would not result in changes to the BIA. The proponent committed to responding and resolving the comments directly with Mississaugas of Scugog Island First Nation.

Upon review of the draft BIA, MSIFN has confirmed that there are no outstanding concerns with the contents of the BIA, nor objections to the Goreski's Resort Outfall Pipe project proceeding forth with the understanding that Parkbridge has committed to continuing engagement with MSIFN to discuss items and concerns of the Goreski Resort Sewage Treatment Plant project which are outside of the scope of the BIA.

☐ Surveillance

If required, project surveillance will be conducted by the Parks Canada Environmental Officer or Realty Officer.

☐ Follow-up monitoring

Follow-up monitoring may be required to confirm successful replanting, invasive species presence, erosion concerns, and ensure removal of construction garbage, equipment, and materials.

☐ SARA Follow-up monitoring

This project will not lead to residual adverse effects that contravene a SARA prohibition for a listed species at risk, its residence or its Critical Habitat.

## 12. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Most activities for this project are terrestrial or below-substrate based, with limited planned vegetation removal and minimal vegetation disturbance.

Furthermore, the project area is not considered specialized, nor sensitive in nature, and vegetation, habitat, and landscape in-kind can be found elsewhere within close proximity of the work area. Residual effects resultant of this disturbance is not anticipated to be significantly adverse to those valued environmental component assessed above.

With implementation of project mitigation, no significant residual adverse effects and/or adverse effects on environmental integrity are anticipated.

## 13. EXPERTS CONSULTED

| | |
|---|---|
| **Department/Agency/Institution:**<br>Parks Canada Agency | **Date of Request:** 2021-07-21 |
| **Expert's Name & Contact Information:**<br>Brandy Lockhart<br>brandy.lockhart@pc.gc.ca<br>613-324-9806 | **Title:**<br>Underwater Archaeologist |
| **Expertise Requested:** Review project for any underwater archaeological potential or concerns. | |
| **Response:** The project area has high potential for Indigenous artifacts and this needs to be considered in the design plan and mitigated for. Recommend that the area be assessed archaeologically via an Archaeological Impact Assessment prior to this work. | |

| | |
|---|---|
| **Department/Agency/Institution:**<br>Parks Canada Agency | **Date of Request:** 2021-07-21 |
| **Expert's Name & Contact Information:**<br>Jenneth Curtis<br>jenneth.curtis@pc.gc.ca<br>819-743-9369 | **Title:**<br>Archaeologist |
| **Expertise Requested:** Review project for any terrestrial archaeological potential or concerns. | |
| **Response:** There is likely potential for archaeological resources. Recommend that at least an Archaeological Overview Assessment be completed to investigate that potential and determine if any known archaeological sites are present in areas of land or water immediately adjacent to the Parks Canada administered land component. | |

| | |
|---|---|
| **Department/Agency/Institution:**<br>Matrix Heritage | **Date of Request:** 2022-02 |
| **Expert's Name & Contact Information:**<br>Ben Mortimer<br>bmortimer@matrixheritage.ca<br>613-614-6002 | **Title:**<br>Principal |
| **Expertise Requested:** Design and conduct Underwater Archaeology Assessment (UAA) of project area. | |
| **Response:** The UAA was completed (Appendix 16) and nothing of archaeological concern was found within the study area however the results may be inconclusive given the assessment strategy. Therefore, based on the results of this investigation it is recommended that:<br>• Monitoring of any in-water excavation activity and the resulting dredged sediments brought to the surface shall be undertaken under the direction of an Underwater Archaeologist authorized through a Parks Canada Research and Collection Permit. The archaeologist shall be on site during excavation in the event obstructions or objects are | |

found which could potentially be archaeological. Dredged soils shall be examined for artifacts.
- Should any potential archaeological resources be encountered during construction activities (i.e., structural features, timbers, artifact concentrations) all work in the area must stop immediately and a Federal Underwater Archaeologist must be notified.

## 14. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

☒ not likely to cause significant adverse environmental effects.
☐ likely to cause significant adverse environmental effects.

FOR SARA REQUIREMENTS:

☒ Residual adverse effects to species at risk are not likely, and therefore, the SARA-Permit Decision Tool was not required

**OR**, the SARA-Permit Decision Tool was used and determined:

☐ This activity does not require a SARA permit
☐ This activity requires a SARA permit and one can be issued
☐ This activity requires a SARA permit but one cannot be issued

## 15. RECOMMENDATION AND APPROVAL

**External Consultants**

| | |
|---|---|
| **Prepared by:**<br>*Sarah Aitken, Senior Aquatic Scientist, Hutchinson Environmental Sciences Ltd.* | Date:<br>July 29, 2022 |
| **Prepared by:**<br>*Bob Garner, Project Engineer, R.J. Burnside & Associates Limited* | Date:<br>July 29, 2022 |

**External Proponent**

| | |
|---|---|
| **Reviewed and Accepted by:**<br>*Lachlan MacLean, Senior Vice President, Property Operations, Parkbridge Lifestyle Communities Inc.* | Date:<br>07/29/2022 |

**Parks Canada Agency**

| | |
|---|---|
| **Parks Canada Reviewed by:**<br>*Sarah Bunting, Environmental Assessment Officer, Parks Canada Agency*<br>Bunting, Sarah Digitally signed by Bunting, Sarah Date: 2022.08.03 13:42:40 -04'00' | Date: |

| | |
|---|---|
| **Parks Canada Recommended by:**<br>*Valerie Minelga, Environmental Services Manager, Parks Canada*<br>Digitally signed by Minelga, Valerie<br>Date: 2022.08.03 13:53:26-04'00' | Date: |
| **Parks Canada Approval signature:**<br>*David Britton, Director of Ontario Waterways, Parks Canada Agency*<br>David Britton Digitally signed by David Britton<br>Date: 2022.08.03 15:31:25 -04'00' | Date:<br>2022-08-03 |

**Transport Canada**

| | |
|---|---|
| **Transport Canada Reviewed By:**<br>*Jeremy Craigs, Environmental Officer, Transport Canada*<br>Jeremy Craigs Digitally signed by Jeremy Craigs<br>Date: 2022.08.03 13:19:47 -04'00' | Date: |
| **Transport Canada Approval signature:**<br>*David Zeit, Senior Environmental Officer, Transport Canada*<br>Zeit, David Digitally signed by Zeit, David<br>Date: 2022.08.03 12:40:26 -04'00' | Date: |

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## 17. ATTACHMENTS

**Appendix 1**: Effects Identification Matrix
**Appendix 2:** Site Photos
**Appendix 3:** Project Construction Drawings
**Appendix 4:** Construction Schedule
**Appendix 5:** Vegetation Communities Figure
**Appendix 6:** Environmental Impact Study

**Appendix 7:** Receiving Water Assessment
**Appendix 8:** DFO Mitigation Letter
**Appendix 9:** Environmental Compliance Approval
**Appendix 10:** Kawartha Conservation Permit
**Appendix 11:** Directional Drilling Fluid MSDS
**Appendix 12:** Indigenous Consultation Letters 2022
**Appendix 13:** Indigenous Consultation Letters 2019
**Appendix 14:** Record of Engagement with Indigenous Communities
**Appendix 15:** List of Amphibian Species
**Appendix 16:** Underwater Archaeological Assessment