CarbonFree Rainy River

Water Body Assessment Report

H375916-0000-840-066-0004

					Thompson, Shanley
2026-03-04	**0**	**Approved for Use**	**A. Nerino**	**C. Sehl**	**S. Thompson**
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1. Introduction

CarbonFree Rainy River Ltd. (CarbonFree) is proposing to develop an up to 60-megawatt (MW) Class 3 solar photovoltaic (PV) on lands located in the township of Chapple, Ontario approximately 40 km northwest of Fort Frances.

The proposed CarbonFree Rainy River Project (hereinafter referred to as the Project) is a renewable energy generation facility which will use solar PV technology to generate electricity. Electricity generated by solar PV panels will be converted from direct current (DC) to alternating current (AC) by inverters and then stepped-up (via pad-mounted inverters, medium voltage transformers and a main substation transformer) to 115 kilovolts (kV) prior to being connected to the existing Hydro One Networks Inc. (HONI) transmission line.

The Project aims to contribute to the government of Ontario's goal of accelerating new electricity generation from renewable sources to support the province's growing energy needs. Accordingly, CarbonFree intends to enter into an agreement for the sale or supply of electricity, the quantity of which will be commensurate with the name plate capacity of the facility.

1.1 REA Regulation Requirements – Water Assessment

The REA Regulation prescribes the requirements for renewable energy projects based on the class of solar facility. The Water Assessment requirements, as outlined in Section 29 of the REA Regulation, consists of a *records review* (Section 30) and *site investigation* (Section 31).

According to the REA Regulation: *a "water body" includes a lake (including kettle lakes), a permanent stream, an intermittent stream or a seepage area but does not include*

a) grassed waterways

b) temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through

c) rock chutes and spillways

d) roadside ditches that do not contain a permanent or intermittent stream

e) temporarily ponded areas that are normally farmed

f) dugout ponds

g) artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas.

A "*permanent stream*" is defined by the regulation as a stream that continually flows in an average year.

An "*Intermittent* Stream" is defined by the regulation as a natural or artificial channel, other than a dam, which carries water intermittently and does not have established vegetation within the bed of the channel, except vegetation dominated by plant communities that require or prefer the continuous presence of water or continuously saturated soil for their survival.

A "*Lake Trout Lake*" is defined by the regulation as a lake that has been designated by the Ontario Ministry of Natural Resources and Forestry (MNR) for lake trout management, as set out in records maintained by and available from that Ministry.

A "*Seepage Area*" is defined by the regulation as a site of emergence of ground water where the water table is present at the ground surface, including a spring.

Although the REA does not define a *"Lake"* for the purpose of this report it is defined as a permanent natural accumulation of water with its open water (i.e., not vegetated) component >50% of the overall surface area. In instances where the surface is <50%, the feature will be considered a wetland.

For the purpose of this report, any wider areas or ponds (natural or artificial) hydraulically inline (inflow/outflow) of a permanent or intermittent stream will be considered part of the stream with the high-water marks adjusted accordingly. For offline dug ponds that are connect to a water body via channels that meet the definition of a water body, all channels natural or artificial will be considered water bodies with the water body boundary ceasing at the onset of the dug pond.

1.2 Report Format

This report is comprised of three main sections, as outlined below, with each section complete with REA Regulation requirements, methodology and results:

- **Records Review** – Section 2
- **Site Investigation** – Section 3
- **Environmental Impact Study** – Section 4
- **References** – Section 5.

2. Records Review

A records review is required as part of the Water Assessment, as outlined in Subsection 29(1) of the REA Regulation. The following sections outline the REA Regulation requirements, methodology and results of the Water Assessment Records Review.

2.1 REA Regulation Requirements – Water Assessment Records Review

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to conduct a Water Assessment Records Review and prepare a report summarizing the results and determinations made with respect to whether the Project Location is:

- in a water body
- within 120 metres (m) of the average annual high-water mark of a lake, other than a Lake Trout Lake that is at or above development capacity
- within 300 m of the average annual high-water mark of a Lake Trout Lake that is at or above development capacity
- within 120 m of the average annual high-water mark of a permanent or intermittent stream
- within 120 m of a seepage area.

2.2 Records Review Methodology

The following sections outline the background documents and information sources reviewed for records related to water body features in the vicinity of the Project.

Publicly available records maintained by government and non-government sources were reviewed. Key information sources included: MNR, Crown Land Use Policy Atlas (CLUPA), Algoma District and several sources of publicly available satellite imagery. No Conservation Authorities regulate the area.

2.2.1 Ministry of Natural Resources Records

- **Land Information Ontario Mapping** – *Land Information Ontario* (LIO) data is maintained by the MNR and provides key provincial geospatial data about Ontario. Shapefiles obtained from the LIO open datasets were obtained and used to prepare a figure showing the presence/absence of water features in the vicinity of the Projects. Available satellite imagery was further used to verify natural features.
- **MNR – Dryden-Fort Frances-Atikokan District** – Discussions regarding information on the provincial policy plan and natural features in the vicinity of the Project are currently in progress with MNR. Available information is published online for public use. If any information is received that includes additional water bodies or requires a change to water body boundaries or classifications within 120 m of the project(s), this report will be updated accordingly.

2.2.2 *Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)*

The OMAFRA online drainage mapping is an interactive web browser that provides information on water features, including agricultural drainageways. This interactive map was used to determine the presence/absence of water features in the vicinity of the Projects.

2.2.3 *Lake Trout Lakes in Ontario (Land Information Ontario)*

The LIO data for Lake Trout Lakes in Ontario for the Northwest Region was investigated to inform the presence of Trout Lakes in the vicinity of the project.

No Natural or Put-Grow-Take Lake Tout Lakes were identified within 120m of the project.

2.2.4 *Satellite Imagery*

Google Earth and Bing Imagery, as well Ontario aerial base maps accessible through the MNR Make a Map portal was viewed to determine if any visible water bodies were observed.

2.3 Records Review Results

A summary of water body records within the Project area are presented in Table 2-1 and illustrated in Figure 2-1.

Table 2-1: Summary of Records Review Results

Project Name	Location	Records Review Determinations (Per REA Regulation)					
		In Water Body	Within 120 m of Lake	Within 120 m of Permanent Stream	Within 120 m of Intermittent Stream	Within 120 m of a Seepage Area	Within 300 m of Lake Trout Lake
CarbonFree Rainy River Solar Project	District of Rainy River	No	No	Yes	No	No	No

2.3.1 *Records Review Summary*

One water feature was identified within 120 m of the Study Area, including:

- **Mather I Creek:** Permanent sinuous watercourse flowing from Sturgeon Creek through the western, northern, and southern parcels of the Study Area.
  - **Mather I Creek Tributary A:** Flows from Mather I Creek into the southwestern PV array within the Project Location.

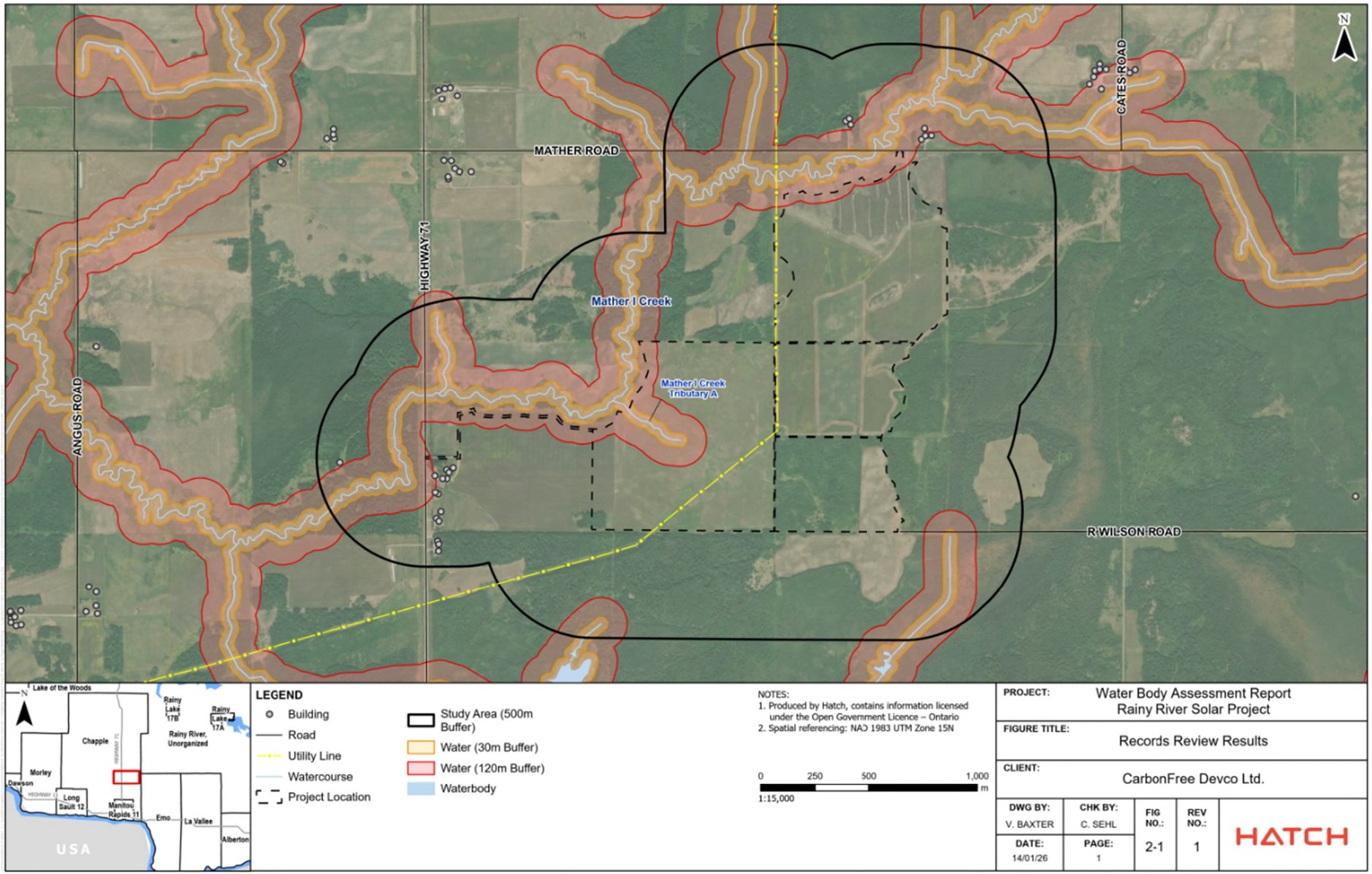

Figure 2-1: Records Review Water Body Features

3. Site Investigation

A site investigation is required as part of the Water Assessment to confirm the presence/absence of water body features, as outlined in Subsection 31(1) of the REA Regulation. The following sections outline the REA Regulation requirements, methodology and results of the Water Assessment Site Investigation.

3.1 REA Regulation Requirements – Water Assessment Site Investigation

Per Section 31(1) of the REA regulation, a Water Assessment Site Investigation is required for the proposed Project to determine:

a) Whether the results of the analysis summarized in the report prepared under Subsection 30(2) are correct or require correction, and identifying any required corrections.

b) Whether any additional water bodies exist, other than those identified in the records review.

c) The boundaries, located within 120 m of the project location, of any water body that was identified in the records review or site investigation.

d) The distance from the project location to the boundaries determined under Clause c) above.

3.2 Site Investigation Methodology

3.2.1 Site Investigation Type

The REA Regulation distinguishes between two different Site Investigation types: a physical Site Investigation and Alternative Site Investigation. The details of the type of Site Investigation completed for the Project are outlined below.

3.2.1.1 Physical Site Investigation

A physical Site Investigation was completed for the Project Location. This included walking throughout the Project Location to investigate the air, land and water and verify the presence/absence of natural features. Dates and details of the Site Investigation are provided in Section 3.2.2.

3.2.2 Weather Conditions and Methodology

The details of the site investigation related to the dates, times and weather conditions are provided in Table 3-1. Weather conditions are based on the weather network results for Fort Frances, Ontario.

Table 3-1: Site Investigation Details – Dates, Times and Weather Conditions

Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hrs)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
May 26, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	20:55	21:55	1	5°C	0	9	0
May 30, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	7:02	8:30	1.5	18°C	1	50	0
June 3, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	21:00	22:30	1.5	16°C	1	10	0
June 4, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	8:00	10:30	2.5	17°C	2	10	0
June 23, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	21:50	23:15	1.25	16°C	1	50	0
June 24, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:00	10:15	3.25	19°C	1	0	0
July 8, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:15	13:30	6.25	17°C	0	60	0

3.2.3 Name and Qualifications of the Site Investigators

The name and qualifications of the site investigator are provided in Table 3-2.

Table 3-2: Name and Qualifications of Site Investigators

Details and Qualifications		
Name	Taylor Simpanen	Audrey Nerino
Education and Professional Affiliations	• Dipl. Fish and Wildlife Technician (2018) • Dipl. Arboriculture and Urban Forestry (2019) • Ontario Breeding Bird Atlas • Bird Studies Canada	• Honours, Bachelor Environmental Studies, Geography (2019)
Years in Practice	~5 years	~6 years
Experience Summary	Taylor has worked on numerous renewable power projects including hydropower, pumped storage, solar, and wind facilities during his career. He has extensive knowledge and experience completing terrestrial and aquatic field investigations, including Species at Risk (SAR) surveys and monitoring, habitat assessments (including critical habitat), breeding birds, amphibian and reptile, mammals, fisheries, benthics, botanical identification and inventories, Ecological Land Classification (ELC) surveys, wetland delineations, tree health assessments, aquatic and significant wildlife habitat assessments, water quality monitoring, hydrological assessments, and soil sampling.	Audrey has over five years of experience engaging with various Indigenous partners and stakeholders across multiple projects related to infrastructure, energy, and social development. Audrey has assisted in identifying environmental permitting requirements for multiple infrastructure and energy projects, requiring familiarization with various provincial and federal environmental legislation. Additionally, she has experience leading the completion of deliverables required under the MTO Class EA process, including reviewing existing reports, developing mitigation for potential terrestrial and aquatic impacts, and developing associated documentation.
Certifications and Professional Development	Certificates: • Maritimes Wetland Evaluation System Training (2024) • Ecological Land Classification (ELC) (2023); • Butternut Health Assessor (2022). • Class 2 Crew Lead Electrofisher (2017) • OBBN (2018) Professional Development: • NHIC Data Sensitivity Training Course (2025); • Wood Turtle Habitat Assessment Training (2023); • IBP Banding Certificate (2020); • Bird Studies Canada Migration Monitoring Training (2018)	Certificates: • Geomatics Certificate program, 2019

3.3 Site Investigation Results

The site investigations differed from the records review findings as outlined in the below sections and illustrated in Figure 3-1.

3.3.1 Mather I Creek

Site Investigations confirmed the presence of Mather Creek within 120 m of the Project Location at two distinct locations on two separate parcels proposed for development (Figure 3-1). As a result, the Project Location has been setback a minimum of 30 m from the waterbody.

3.3.2 Mather I Creek Tributary A

Site investigations revealed that Mather I Creek Tributary A is not present within the Project Location. General surface drainage was present throughout the existing agricultural fields; however, no intermittent or permanent watercourses were identified.

Table 3-3: Summary of Watercourses Identified During Site Visits and their Proximity to the Project Location

Water Body	Site Investigation Determinations (Per REA Regulation)		
	In Project Location	Within 30 m of Project Location	Within 120 m of Project Location
Mather I Creek	No	No	Yes
Mather I Creek Tributary A	No	No	No

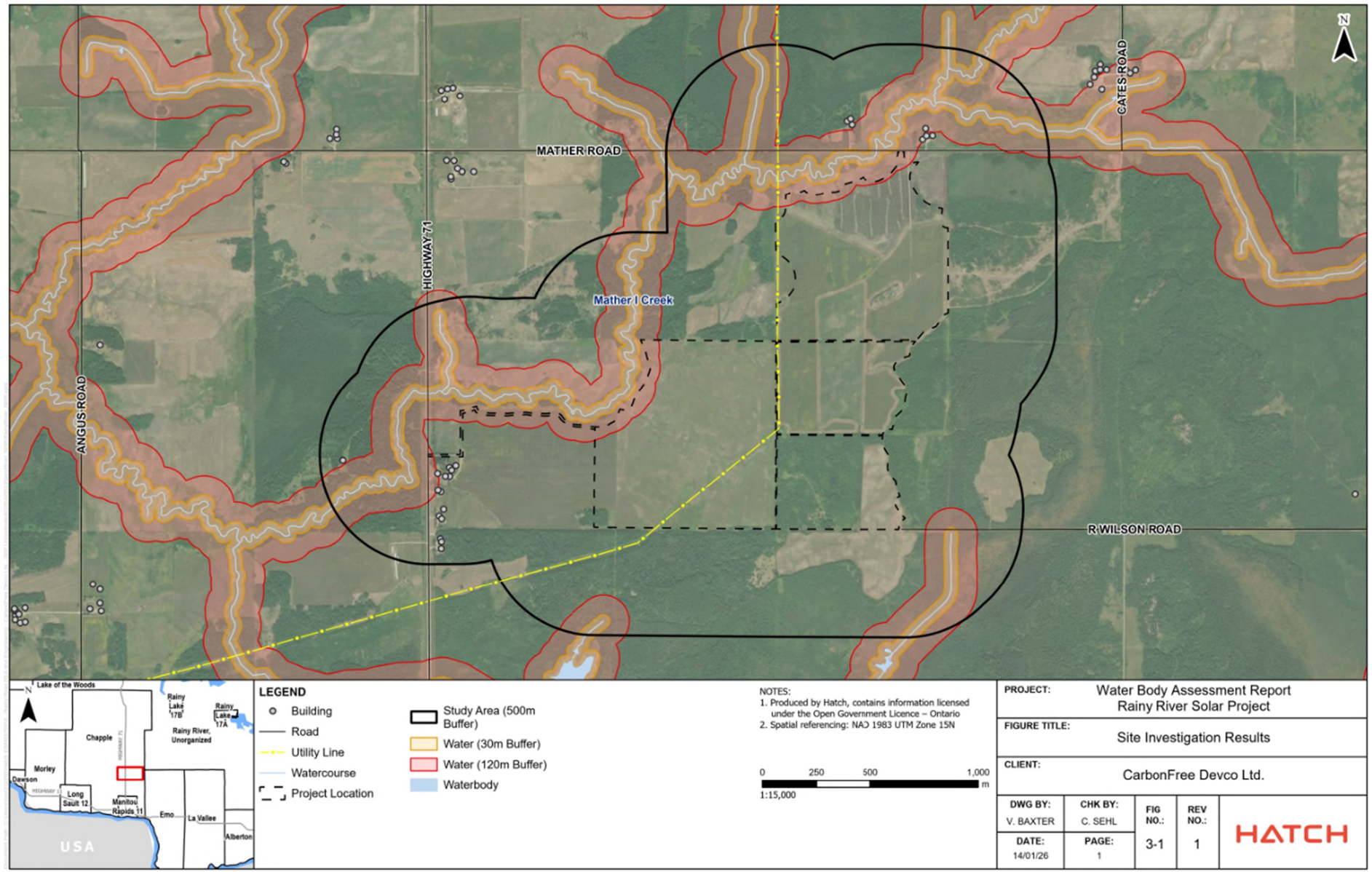

Figure 3-1: Site Investigation Results

4. REA Regulation – Environmental Impact Study

Section 39(1) of the REA Regulation prohibits the construction, installation or expansion of any component of a solar project within the following locations:

- A lake or within 30 m of the average annual high-water mark of a lake.
- A permanent or intermittent stream or within 30 m of the average annual high-water mark of a permanent or intermittent stream.
- A seepage area or within 30 metres of a seepage area.

Section 40(1) of the REA Regulation prohibits construction, installation or expansion of any component of a solar project within the following locations:

- Within 120 m of the average annual high-water mark of a lake, other than a Lake Trout Lake that is at or above development capacity.
- Within 300 m of the average annual high-water mark of a Lake Trout Lake that is at or above development capacity.
- Within 120 m of the high-water mark of a permanent or intermittent stream.
- Within 120 m of a seepage area.

However, Section 39(2) and 40(2) allow proponents to construct Project components for Class 3 solar facilities within the locations noted above, subject to the completion of an EIS. Sections 39 and 40 of the REA Regulation indicate that the EIS report must

- Identify and assess any negative environmental effects of the project on a water body and on land within 30 m of the water body.
- Identify mitigation measures in respect of any negative environmental effects.
- Describe how an environmental effects monitoring plan will address any negative environmental effects.
- Describe how the construction plan report addresses any negative environmental effects.

4.1 EIS Methodology

The following steps outline the methodology that was used to prepare this EIS:

- Documentation of Project components and activities during all Project phases, including construction, operations and decommissioning, and identification of temporal and spatial boundaries.
- Identification of effects that are likely to occur on the environmental components as result of implementing the Project.

- Development of mitigation measures to eliminate, alleviate or avoid the identified negative effects.
- Design of an environmental effects monitoring program to confirm the predicted effects and the effectiveness of mitigation measures.

4.2 Project Components and Activities

The following sections briefly describe the construction, operation and decommissioning phases of the Project. The summary information is taken from the Project Description Report (H375916-0000-840-066-0001). More detailed information on the Project phases, components, design, and construction methodology can be found in the

- Construction Plan Report (H375916-0000-840-066-0003).
- Design and Operations Report (H375916-0000-84-066-0006).
- Decommissioning Plan Report (H375916-0000-840-066-0007).

4.2.1 Project Components

The main components of the Project are expected to include the following:

- Approximately 131,000 solar PV modules, each 625 watts (W) and weighing about 33 kg, with approximate dimensions of 2,382 mm long by 1,134 mm wide by 30 mm thick.
- Fourteen 4.4 MW AC inverters that will convert the direct current supplied by the PV modules to alternating current. Similarly, pad-mounted 4.4 Megavolt-ampere (MVA) three-phase, liquid filled transformers that will ‘step up’ the voltage to 34.5 kV. Each installation will consist of a single 4.4-MW inverter and a single 4.4-MVA pad-mounted transformer.
- A gravel substation yard that will house an approximately 50-MVA substation transformer that will ‘step up’ the voltage from 34.5 kV to 115 kV, switchgear, control and monitoring equipment, and a communication tower.
- A primary internal access road with one entrance from Wilson Road, and a secondary perimeter access road.
- A chain link fence measuring approximately 8000 m around the perimeter of the Project Location and a gated entrance.
- A surface water drainage system comprised of grassed swales, roadside ditches and culverts.

4.3 Construction

It is anticipated that construction of the Project will take up to 24 months, depending on time of year and various other factors. Prior to construction, the area will be surveyed, and any buried infrastructure will be located before commencing with site preparation. Construction is anticipated to start in early 2027, pending receipt of requisite permits and approvals.

4.3.1 *Site Preparation*

Prior to site preparation, a sediment and erosion control plan will be prepared and implemented. Trees and large standing vegetation will be cleared from areas where the PV arrays will be constructed. Meadow vegetation will be left in place to the extent possible. Locations of topsoil, timber and vegetation stockpiles will be pre-determined and not within 30 m of any identified waterbodies.

4.3.2 *Access Road Construction*

The new primary access road, with an entrance from Wilson Road, will be approximately 6 m wide and will be constructed of crushed gravel. In addition, there will be a smaller gravel road which will be about 3 to 5 m wide. Exact dimensions and locations of access roads will be finalized in consultation with the Township of Chapple. Road construction will involve vegetation clearing (if necessary) and topsoil removal prior to the placement of a granular base. Ditches and culverts will be constructed, as necessary, to maintain drainage. Following construction, any access roads that are not required will be removed and restored by replacing the topsoil and seeding the area.

4.3.3 *Laydown Area*

A construction laydown area will occur on the Project Location, adjacent to where the solar PV arrays are installed.

4.3.4 *Perimeter Fencing*

A chain link fence topped with barbed wire and access gates will be installed around the perimeter of the Project Location to prevent unauthorized access.

4.3.5 *Installation of Support Structures*

Foundations and/or support structures will be required beneath transformers, inverters and PV panels. Detailed engineering for the design of the foundations and support structures is yet to be completed. However, it is expected that the pads for the transformers and inverters will be concrete slab-on-grade. The PV panels will be installed on racks mounted on tracking structures. The tracking structures are expected to be supported by steel piles, driven or screwed into the ground. Concrete may be used to support or ballast the steel piles when necessary. It is estimated that up to 58,000 piles will be installed within the Project Location to support the tracking structures and the PV panels. Foundation construction and the installation of support structures will be subject to inspection prior to the installation of PV panels, and wiring.

4.3.6 *Installation of PV Modules, Trackers and Mounting Racks*

The solar PV modules will be mounted on racks mounted on tracking structures. Each tracker is comprised of a long steel torque tube (approximately 50 m to 100 m long), mounted on steel piles driven or screwed into the ground. A simple racking system will be assembled onto each torque tube, and the PV modules will be attached to the racking system. There will be approximately 2,900 trackers, each holding up to 50 PV modules. The modules will be mounted on the racking system by installers with the help of a small mobile crane if needed.

4.3.7 Electrical Cable Installation

A network of underground DC cabling will be required from the termination point of the PV array to the inverters and MV transformers, which will then convert the DC electricity to AC and step up the voltage to 34.5 kV.

A network of overhead and underground AC cables may be required from the inverters, to connect the PV array to the proposed substation and HONI transmission system.
A simple trenching device will be used to install the underground cables, whereby a slot is opened, the cable laid, and the soil replaced.

4.3.8 Substation Construction

The substation yard will be located near the center of the Project Location. Construction will include excavation of topsoil, installation of ground grid, foundation construction, construction of secondary containment, covering the area with crushed stone, installation of the substation transformer and other electrical equipment. Switchgear, protection and control equipment will be housed in a prefabricated, weatherproof building enclosure. The substation transformer will step-up the voltage from 34.5 kV to 115 kV prior to connecting to the existing HONI 115 kV transmission line.

4.3.9 Electrical Distribution Line and Interconnection Point

Connecting to the existing HONI 115 kV transmission line that runs through the Project Location will require a short overhead transmission line (approximately 35 m) to be constructed between the Project substation yard and the point of interconnection (POI) with the existing HONI transmission line presented in Figure 2-1, and Figure 3-1.

4.3.10 Testing and Commissioning

Following the installation of all electrical components, testing and commissioning will be performed prior to start up and connection to the power grid. The solar modules, inverters, transformers and electrical cables will be checked for system continuity, reliability and performance. If problems or issues are identified, remedial corrections will be made prior to start-up.

4.4 Operation and Maintenance

The Project will operate year-round and generate electricity during daylight hours.
The amount of power generated will depend on daily weather conditions and sufficient solar irradiation. To ensure the safety and integrity of the Project, access will be limited to Project personnel and unauthorized public access will be prevented by fences, gates and security procedures.

Operationally, there are no significant hazards involved in the operation of the Project, nor are hazardous materials stored on site or created by the Project during its operation. The Project will not generate significant quantities of waste from its operation.

4.4.1 Maintenance and Inspection

The Project solar PV modules, inverters and transformers and other electrical equipment, wiring and electrical connections will be routinely inspected, typically on a monthly basis. Any broken or malfunctioning PV modules, electrical cabling or components will be repaired or replaced by facility staff. Trash, debris and equipment parts replaced during maintenance and repair activities will be collected and properly stored in waste disposal bins.

All waste collected during operation of the Project will be removed in accordance with provincial and municipal requirements.

Vegetative ground cover, drainage systems and trees will be monitored and maintained, typically on a monthly basis. If required, water trucks will bring water to supply the water to support vegetative cover. Since suitable ground cover will be established under the PV modules, some form of vegetation abatement such as grass cutting may be required several times throughout the summer months and may extend outside of the fenced project area to maintain the fence line of the Project. No hazardous chemicals are anticipated to be used for regular maintenance or vegetation abatement activities and will only be considered for management of invasive species, where present. Limited and targeted use of herbicides will be applied by a licensed exterminator in accordance with the *Pesticides Act*, R.S.O. 1990, c. P.11 and O. Reg. 63/09 and will be used in accordance with the approved label for the product, along with standard mitigation measures for the herbicide.

The Project Location, including any drainage features (e.g., grassed swales, culverts) and any sediment and erosion control measures (e.g., riprap protection, rock flow checks) will be visually inspected for any signs of erosion or sedimentation and recorded. Regular maintenance such as the cleanout of accumulated sediment and/or the removal of any debris blockage would be conducted at that time. If required, remedial works (e.g., stabilizing and/or reseeding of identified erosion areas) and repairs to any drainage features or sediment and erosion control measures will be implemented to minimize environmental impacts.

The need to clean the solar PV modules will be determined according to local weather conditions, such as the quantity and frequency of rain and snow at the Project Location. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible that cleaning the modules will not be necessary at all. If required, water trucks will bring water to supply the water required. No chemicals will be used for the cleaning of the modules.

The transformers will be visually inspected on a regular basis and their status recorded. Any faulty equipment that could result in an oil leak will be repaired and any observed leaks will be cleaned up immediately by maintenance personnel. Secondary containment will be integrated into the design of the substation and will have the capacity to hold 110% of the mineral oil utilized in the transformer system. Transformer stations will be connected to a SCADA system that logs and communicates alarms in real time. Transformers will be monitored for oil levels, oil pressure, oil temperature, and gas accumulations to alert

operators to faults so as to identify potential issues or leaks. Spill response equipment will be left on site or in the maintenance trucks should leaks be observed.

During winter, primary access roads will be ploughed to clear snow to maintain access of personnel to Project facilities. Under most winter conditions, snow is expected to melt due to the module heating and the tilt of the modules. Under some conditions, manual snow removal may be performed by maintenance personnel who will clear the snow using a brush attached to a long pole.

4.4.2 Stormwater Management

A stormwater management design will be prepared to minimize any potential negative environmental effects to the existing drainage conditions (e.g., increased runoff, erosion and sedimentation) will not occur as a result of the Project. The following mitigation measures are expected to form part of the Project's stormwater management design:

- Existing drainage patterns within the Project Location will be maintained to the extent possible and/or as required to maintain the common law drainage rights of upstream or downstream riparian landowners.
- Following construction, the entire Project Location, with the exception of the access roads, will be re-vegetated with native grass or other suitable ground cover to promote surface water infiltration, filter storm water runoff and to prevent erosion.
- New drainage swales and channels will be constructed as enhanced (flat bottom) grassed swales to provide extended flow times, filtering of runoff and reduce the potential for erosion.
- Rainfall runoff from solar modules, inverter building rooftops, transformer concrete pads (if not enclosed in an inverter building), interior roads and parking area will be directed to grassed or vegetated areas to promote infiltration and filtering of runoff by vegetation prior to its conveyance to on-site grassed swales.
- All transformers will use mineral oils or FR3 oils, which are non-toxic, non-bioaccumulating and readily biodegradable in the environment. All transformers will be routinely inspected and any faulty equipment that could result in an oil leak will be repaired.
- Spill response equipment will be left on-site, and any observed leaks will be cleaned up immediately by maintenance personnel.

4.4.3 Water Supply Facilities

The Project does not require any on-site facilities to supply groundwater (wells) or surface water (ponds, watercourses) for operation of the Project. It is anticipated that water from rain and snow will be sufficient for cleaning the solar PV modules and maintaining vegetative cover onsite; if not, the Proponent will contact local suppliers to provide water in tankers from

off-site sources for this purpose. No chemicals will be used in the cleaning of the PV modules.

4.4.4 Wastewater (Sewage) Facilities

The Project will not generate any wastewater (sewage) or discharge any liquid effluent from its operation, nor does the Project require any on-site facilities for the collection, transmission, treatment or disposal of wastewater for operation of the Project.

During operation, sanitary facilities (e.g. permanent washrooms with a septic disposal system) are not required. If sanitary facilities are determined to be required, portable toilets, provided and serviced by a local sanitation company, will be used.

4.4.5 Waste Disposal Facilities

The Project will not generate significant quantities of waste from its operation. A small waste disposal bin(s) will be provided on site to collect any trash, debris or equipment parts replaced during routine maintenance of the Project during its operation. Periodically, when required, the Proponent will arrange for a licensed waste disposal company to empty the bins and haul the waste to an appropriate waste disposal facility off-site.

4.4.6 Exhaust Equipment

The Project has no facilities or equipment that will discharge contaminants or pollutants to the air (e.g., exhaust gases from emergency back-up diesel generators) during operation of the Project.

4.4.7 Noise Generating Equipment

Noise generating equipment during the operation of the Project is expected to be limited to inverters and transformers adjacent to the solar PV arrays and within the substation. Minor noise may be generated by tracker motors at intervals throughout the day. A noise study will be completed to review proposed locations of noise emitting equipment to confirm the applicable MECP and NPC-300 noise levels will not be exceeded during operation.

4.5 Decommissioning

The anticipated lifespan of the Project is approximately 25 years. At that time the Project will be decommissioned or refurbished depending on market conditions and/or technological changes.

If the decision is to discontinue renewable energy generation, the decommissioning process would likely involve the following:

- Removal of the scrap metal and cabling. Where possible, these materials will be recycled, with non-recyclables taken to an approved disposal site.
- Removal of support structures and foundations; these materials will be recycled where possible.

- Cleanup and any necessary re-grading.
- A Decommissioning Plan Report will be developed and published as part of the REA application process.

4.6 Potential Negative Environmental Effects and Proposed Mitigation Measures

The potential negative environmental effects on waterbodies and watercourses that may occur during construction, operation and decommissioning phases of the Project are described in Table 4-1.

Mitigation measures have been proposed with the intent to minimize or prevent these negative effects and monitoring activities have been proposed to confirm the effectiveness of these mitigation measures.

4.6.1 Mather I Creek

Mather I Creek is a permanent watercourse which is associated with several areas of wetland and runs throughout the western portion of the Study Area from north to south. It is within approximately 120 m of the Project Location in both the southwest and north portions. The Project Location will be setback a minimum of 30 m from the feature. The changes to adjacent land coverage may influence the water levels and flows associated with the watercourse. The Project has been designed to minimize these changes in surface water flow patterns. Increases in sedimentation or spill occurrences associated with the Project could impact the watercourse however, standard mitigation measures such as sediment and erosion controls and spill prevention procedures are expected to sufficiently reduce the risk of impacting this feature.

4.6.2 Mitigation Measures

Industry best management practices (BMPs) related to sediment, erosion, groundwater and stormwater management have been included within the following reports:

- Construction Plan (H375916-0000-840-066-0003).
- Design and Operations (H375916-0000-840-066-0006).
- Decommissioning Plan (H375916-0000-840-066-0007).

The Design and Operations Report will include a Stormwater Management Plan which will generally maintain drainage patterns throughout the Project Location. Sediment and erosion control measures will be implemented in any locations where watercourses are within 120 m of the Project Location. BMPs may include but are not limited to silt fencing, straw wattles, vegetated drainage swales, sedimentation ponds and site grading to direct surface runoff to areas where sufficient vegetated buffers exist (e.g., away from areas within 30 m of the Connection Line). Existing infrastructure (e.g., roadways) will be used to separate surface runoff away from existing waterbodies, all existing water-crossings (i.e., culverts) will be used

to span identified watercourses. In all cases, the Project Location will be setback a minimum of 30 m from all waterbodies.

4.6.3 Monitoring Plans

Ongoing, regular monitoring will occur during construction and decommissioning to ensure mitigation measures are installed and functioning as intended with no measurable effects to identified water bodies. Upon completion of construction and decommissioning, regular (e.g., monthly) monitoring will continue until pre-construction conditions are restored.

Stormwater management features are expected are expected to be inspected on monthly basis with deficiencies noted for correction internally. In the event that ongoing monitoring enters the winter months, monitoring may be suspended until spring.

Table 4-1 identifies potential environmental effects and proposed mitigation measures with respect to Mather I Creek (identified to be within approximately 120 m of the Project area) as shown in Figure 3-1. No impacts to Mather I Creek are anticipated to occur given the distance of the watercourse from the nearest project infrastructure.

Table 4-1: Summary of Environmental Effects, Monitoring Requirements with Respect to Water Body Features

Negative Effect	Project Phase	Mitigation Strategy	Performance Objective	Monitoring Plan					
				Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	Contingency Measures
Increase in surface water runoff from Project Location	Construction, Operations, and Decommissioning	Maintain existing drainage patterns as much as possible. Retain and/or plant dense vegetation as soon as possible following construction. Storm water management measures should be installed to control increases in runoff peak flows from the Project Location to pre-construction condition levels.	No impacts on water quantity / drainage patterns.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies).	Throughout Project Location.	During regular site inspections.	Visual monitoring of erosion would identify potential areas of concern.	Maintenance and improvement requirements actioned as needed and reported internally throughout monthly construction monitoring reports.	Erosion remediated as necessary to ensure no long-term erosion issues. Adjust stormwater management as needed.
Erosion of soils resulting in sedimentation of receiving waterbodies / watercourses.	Construction, Operations, and Decommissioning	Sediment and Erosion controls will be installed and maintained between the Project Location and wetlands or watercourses where work is required within 50 m of wetlands or 120 m of water features	No erosion from site over and above existing conditions.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies). Visual monitoring of erosion and sediment control measures to ensure they remain effective throughout construction.	Throughout Project Location.	During regular site inspections.	Visual monitoring of erosion would identify potential areas of concern.	Documented internally in monthly construction monitoring reports.	Erosion remediated as necessary to ensure no long-term erosion issues. Repair /restore erosion and sediment controls as needed.
Impacts to surface water quality due to accidental spills	Construction, Operations and Decommissioning	Standard mitigation to prevent spills and minimize magnitude of spills if they occur.	No impacts to water quality due to spills.	Visual monitoring at transformer locations and monitoring of spill prevention measures.	Throughout Project Location.	During regular site inspections.	Visual monitoring would identify potential areas of concern and ensure that spill prevention and control measures are functioning as designed and protocols are being implemented as specified in plans to meet performance objectives.	All spills and remediation efforts to be reported to Contactor's environmental site inspector and reported throughout monthly construction monitoring reports. Reportable spills in water or spills on land >100 L must be documented and reported immediately to the Ontario Spills Action Centre.	Spill contingency measures implemented as necessary in the event of a spill. Following spill event, response will be reviewed to determine if additional or altered response protocols are necessary to meet performance objectives.

5. References

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H375916-0000-840-066-0003. Hatch Ltd. 2025. Construction Plan Report. Prepared for CarbonFree Devco.

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H375916-0000-840-066-0007. Hatch Ltd. 2025. Decommissioning Plan Report. Prepared for CarbonFree Devco.

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Ontario Ministry of Natural Resources and Forestry (MNR). 2012. Land Information Ontario Data Description: Watercourses, Water Bodies. Queen's Printer for Ontario.