

CarbonFree Rainy River Project

Project Description Report

H375916-0000-840-066-0001

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IMPORTANT MESSAGE FOR READERS

This report has been prepared by Hatch Ltd. (Hatch) for the sole and exclusive use of CarbonFree Rainy River Ltd. (the “Client”) for the purpose of assisting the Client in making decisions with respect to the development of a proposed solar photovoltaic project and shall not be (a) used for any other purpose, or (b) provided to, relied upon or used by any third party.

This report contains opinions, conclusions and recommendations made by Hatch, using its professional judgment and reasonable care. Any use of or reliance upon this report by the Client is subject to the following conditions:

- the report being read in the context of and subject to the terms of the agreement between Hatch and the Client including any methodologies, procedures, techniques, assumptions and other relevant terms or conditions that were specified or agreed therein;
- the report being read as a whole, with sections or parts hereof read or relied upon in context;
- the conditions of the Project Location may change over time (or may have already changed) due to natural forces or human intervention, and Hatch takes no responsibility for the impact that such changes may have on the accuracy or validity of the observations, conclusions and recommendations set out in this report; and
- the report is based on information made available to Hatch by the Client or by certain third parties; and unless stated otherwise in the Agreement, Hatch has not verified the accuracy, completeness or validity of such information, makes no representation regarding its accuracy and hereby disclaims any liability in connection therewith.

Table of Concordance

The following concordance table cross-references the contents of this Project Description Report with each requirement identified in Table 1 of O. Reg 359/09 so that the required information can be easily found within this report.

Requirement per Table 1 of O. Reg 359/09	Project Description Report Section
1. Describe any energy sources to be used to generate electricity at the renewable energy generation facility.	Section 3.2
2. Describe the facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.	Section 3.5
3. If applicable, describe the class of the renewable energy generation facility.	Section 3.4
4. Describe the activities that will be engaged in as part of the renewable energy project.	Section 3.6
5. Describe the name plate capacity of the renewable energy generation facility.	Section 3.3
5.1 i) Describe how the electricity that is proposed to be generated is intended to be used, sold or supplied to other persons. ii) Identify the duration of any agreements in respect of the use, sale or supply of the electricity. iii. Whether the name plate capacity of the facility exceeds the quantity of electricity that is intended to be used, sold or supplied to other persons, and, if so, by how much.	Section 3.3
6. Describe the ownership of the land on which the project location is to be situated.	Section 3.1
7. Describe If the person proposing to engage in the project does not own the land on which the project location is to be situated, a description of the permissions that are required to access the land and whether they have been obtained.	Section 3.1
8. Describe any negative environmental effects that may result from engaging in the project.	Section 4, Table 4-1
9. If the project is in respect of a Class 2 wind facility and it is determined that the project location is not on a property described in Column 1 of the Table to Section 19, provide a summary of the matters addressed in making the determination.	N/A
10. If the project is in respect of a Class 2 wind facility in respect of which Section 20 applies and it is determined that the project location does not meet one of the descriptions set out in Subsection 20 (2) or that the project location is not in an area described in Subsection 20 (3), provide a summary of the matters addressed in making the determination.	N/A
11. Provide an unbound, well-marked, legible and reproducible map that is an appropriate size to fit on a 215 mm by 280 mm page, showing the project location and the land within 300 m of the project location.	Appendix A

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Appendix A Project Location

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 Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – Renewable Energy Approvals Under Part V.0.1 of the Act, (herein referred to as the REA Regulation), came into force on September 24, 2009, and identifies the Renewable Energy Approval (REA) requirements for renewable energy generation facilities in Ontario. As per the REA Regulation (Part II, Section 4), ground mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and require a REA.

Section 13 of the REA Regulation requires proponents of Class 3 solar projects to prepare a Project Description Report (PDR). As prescribed by Table 1 of O. Reg. 359/09, the PDR shall describe the following:

1. *“Any energy sources to be used to generate electricity at the renewable energy generation facility;*
2. *The facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity;*
3. *If applicable, the class of the renewable energy generation facility;*
4. *The activities that will be engaged in as part of the renewable energy project;*
5. *The name plate capacity of the renewable energy generation facility;*
6. *How the requirement set out in Section 57.2 is satisfied, including the following:*
 - i) *A description of how the electricity that is proposed to be generated is intended to be used, sold or supplied to other persons;*

- ii) *The duration of any agreements in respect of the use, sale or supply of the electricity; and*
 - iii) *Whether the name plate capacity of the facility exceeds the quantity of electricity that is intended to be used, sold or supplied to other persons and, if so, by how much.*
7. *The ownership of the land on which the Project Location is to be situated;*
 8. *Any negative environmental effects that may result from engaging in the Project; and*
 9. *An unbound, well-marked, legible and reproducible map that is an appropriate size to fit on a 215 mm by 280 mm page, showing the Project Location and the land within 300 m of the Project Location.”*

A draft of the PDR must be made available to the public, the local municipality and identified Indigenous communities, at least 60 days prior to the first and final public consultation meetings in accordance with O. Reg. 359/09.

1.2 Purpose of Report

The PDR is one of the first Project documents prepared once the REA process commences and serves several purposes. Initial drafts of the Report were used to provide preliminary information regarding the Project to the public, Indigenous groups, municipalities and other government agencies. As the REA process has progressed, the PDR has been updated based on information obtained from various studies and data collection activities as well as preliminary planning and engineering of the Project. The final version of the PDR serves as a comprehensive overview document that summarizes all of the important information about the Project.

Section 2 of the PDR describes general information about the Project including the Project name, location and contact information. Section 3 describes the Project components, the major construction activities, operational aspects and decommissioning. Section 4 describes the potential environmental effects associated with the Project's construction, operation and decommissioning phases and the proposed mitigation measures to prevent/minimize those effects.

This PDR has been prepared in accordance with the requirements identified in Table 1 of O. Reg. 359/09, as well as the guidance provided in the Ministry of the Environment Conservation and Parks (MECP) *Guidance for Preparing the Project Description Report as part of an application under O. Reg. 359/09* (MECP, 2023).

2. General Information Requirements

2.1 General Information

The proposed Project is located along Mather Road within the Township of Chapple (the Township), in the District of Rainy River, Ontario.

The Project Location¹, per the definition in the REA Regulation, includes the entire footprint of the Project, including all temporary and permanent parts of the land that will be utilized. This includes the following features:

- All areas where vegetation will be cleared;
- Temporary and permanent access roads;
- Solar panel arrays;
- Inverters/pad-mounted transformers;
- Substation yard, main substation transformer and communication tower;
- Temporary laydown area for construction;
- Fencing; and
- Electrical distribution line from the substation to the interconnection point.

Four properties are expected to be leased by a CarbonFree-related entity from the landowners and sub-leased to the proponent. The total area of these four properties is approximately 210 ha, and the Project Location covers approximately 115 ha of this. The Property Identification Numbers (PINs) are as follows:

- 560370070.
- 560370159.
- 560370005.
- 560370142.

The primary existing land use within the Project Location is agricultural and pasture, with some forested areas. The Project Location is presented in Appendix A as Figure 1.

Surrounding land uses found within 300 m of the Project location include mainly agricultural (primarily hay/crop) and undeveloped forested area.

¹ Project Location means, when used in relation to a renewable energy project, a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposed to engage in the project" [O. Reg. 359/09, s. 1 (1)].

2.2 Contacts

CarbonFree Rainy River Ltd. is the proponent of the Project. Contact information is as follows:

Doug Deeks
Vice President - Projects
CarbonFree Group
1 St Clair Ave W #801, Toronto, ON M4T 1Y5
Tel: 647-408-9680
Email: ddeeks@carbonfree.com

The proponent has retained Hatch Ltd. (Hatch) to assist in meeting the REA requirements. Contact information for Hatch is as follows:

Shanley Thompson, Environmental Scientist
Hatch Ltd.
973 Balmoral St, Thunder Bay ON P7B 0E2
Tel: 807-625-8731
Email: shanley.thompson@hatch.com

2.3 Federal Involvement

No federal lands or resources will be utilized for the Project and based on the resources within the Project Location, issues under Federal jurisdiction are not anticipated. The Project is not expected to be subject to either the *Impact Assessment Act* (IAA) or the *Fisheries Act*. Therefore, no Federal involvement (including permits and approvals) is required.

General compliance with the *Migratory Birds Convention Act* is expected to be maintained through removing and managing vegetation outside of the breeding bird period (April to September) or where necessary completing nest sweeps ahead of vegetation clearing activities.

2.4 Authorizations Required

The Project may require the following permits, approvals and authorizations, as applicable.

Federal Legislation:

- *Migratory Birds Convention Act* - Compliance with the migratory breeding bird timing windows.

Provincial Legislation:

- *Environmental Protection Act* - Renewable Energy Approval.
- Ministry of Transportation (MTO) – encroachment permits and easements.

- *Ontario Endangered Species Act or Species Conservation Act* - Permit(s) or registration(s).
- *Ontario Heritage Act* – An archaeological assessment and cultural heritage assessment were completed and the associated reports were submitted to the Ministry of Citizenship and Multiculturalism.
- As part of the REA approval process, a Natural Heritage Assessment (H375916-0000-840-066-0002) was completed and submitted to the Ministry of Natural Resources for review.

Municipal Legislation:

- Municipal Zoning Bylaw - Zoning By-law Amendment.
- Municipal Approvals - Site Access Agreement, Site Plan Approval, Building Permit, Traffic Plan Approval.

3. Project Information

The following Sections are intended to satisfy the requirements of Table 1 of O. Reg. 359/09: Section 10 – Project Description Report which directs the proponent to provide a description of the Project. Further details on the design of the Project will be provided in subsequent reports required as per O. Reg. 359/09, including the Construction Plan Report (H375916-0000-840-066-0008), Design and Operations Report (H375916-0000-840-066-0008) and the Decommissioning Plan Report (H375916-0000-840-066-0007).

3.1 Land Ownership

The Project is proposed to be constructed on privately owned land. It is expected that the development will occur across four separate parcels of land to facilitate the installation of solar panels and the transmission infrastructure required to connect to the existing grid. The Project properties will be leased by a related entity to the Project proponent which will sublease the land to the proponent. Ongoing consultation is being completed with the private landowners and with the Township of Chapple. Current property boundaries are depicted within Figure 1 of Appendix A.

3.2 Energy Sources for Generation

Solar energy will be used to generate electricity. No supplementary fuel sources are used in the generation of this renewable energy.

3.3 Name Plate Capacity

The DC name plate capacity of the solar panels will be up to 82 MW. The name plate grid connection (AC) capacity of the Project is expected to be up to 60 MW. The nameplate capacity will not exceed the quantity of electricity that is contracted to be sold to the Independent Electrical System Operator (IESO). Technical information related to the model and capacity of PV modules can be found in Section 3.5.

For purposes of this Report, it is assumed that the Project will retain a 20-year power purchase agreement with the IESO, which may be extended to 35 years.

3.4 Class of the Renewable Energy Facility

The Project will be a Class 3 solar facility. That is, the Project is ground-mounted and greater than 10 kW.

3.5 Project Components

Figure 1 in Appendix A provides a conceptualized depiction of the Project, including the Project Location boundaries, existing local roads, topographic contours, existing transmission line, land uses, natural features and waterbodies on and within 300 m of the Project Location.

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

- Approximately 130,676 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.
- 4.4 MW AC inverters that will convert the direct current supplied by the PV modules to alternating current. Fourteen 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 68-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 around the perimeter of the Project Location and a gated entrance.
- A surface water drainage system comprised of grassed swales, roadside ditches and culverts.

3.5.1 Project Layout

Upon exposure to sunlight, the solar modules convert solar radiation into DC electricity through a process referred to as the photovoltaic effect. This effect occurs when the sunlight energy is transferred to semiconductors in the modules, which creates a corresponding electric current. 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. Where necessary, these foundations may be supported by concrete. Tracking structures are expected to be oriented to the north-south, tracking the sun movement from east to west. A typical tracker system will have up to 20 foundation posts and approximately 50 PV modules connected together by electrical wiring. The racks of modules will be arranged in long rows, typically spaced about 6 m apart east-to-west. The DC electrical current from the solar PV modules will be transmitted across the back of the modules and

through underground wires connected to combiner boxes. The combiner boxes allow the connection of numerous incoming wires from the racks of modules into a single outgoing electrical cable. The DC electrical current from the combiner boxes will be transmitted through underground cabling connected to a 4.4 MW inverter. Each inverter will convert the DC electrical current to AC and medium voltage (MV) transformer will step-up the voltage to 34.5 kV. The electricity, now at 34.5 kV (AC), will be transmitted through a combination of overhead and underground cabling to the main transformer situated in the substation yard, which will step up the voltage from 34.5 kV to 115 kV. Electricity will then flow from the substation yard through overhead electrical lines and connect to the transmission line at 115 kV.



Figure 3-1: Typical View of PV and Tracker Set Up²

3.6 Project Activities

In accordance with Table 1 of O. Reg. 359/09, the Project activities involved in the construction, operation and decommissioning phases of the Project are outlined in the following sections.

3.6.1 Assessments and Surveys

Site investigations and targeted field surveys took place between spring and fall 2025, as appropriate for each survey type, to meet REA process requirements. The results of these surveys resulted in minor changes to the Project Location as shown in the Draft Project Description Report. Site investigations and targeted field surveys included but were not limited to the following:

- Ecological Land Classification;
- Wetland/Waterbody/Watercourse Delineation;

² Example Image sourced from Arctech Skyline II Catalog. PV and tracker technology used on site may vary.

- Amphibian Surveys;
- Pileated Woodpecker Cavity Searches;
- Breeding Bird Surveys;
- Grassland Bird Surveys; and
- Bat Snag Surveys and Acoustic Surveys.

3.6.2 Construction

It is anticipated that construction of the Project will take between 24 and 30 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 commence in Q1 2027, once the REA and other required permits have been obtained. Project commissioning is anticipated in 2029. The approximate timeline of each of the four construction stages is provided in Table 3-1.

Table 3-1: Approximate Construction Schedule

Activity	Approximate Timeline
Site Preparation	
Vegetation clearing	January 2027 – March 2027
Fencing	June – August 2027
Temporary access roads and laydowns	June 2027 – September 2027
Grading and drainage	June 2027 – September 2027
Construction & Installation	
Solar pile install	November 2027 – June 2028
Trackers and Racking	December 2027 – September 2028
Solar modules, combiner boxes, DC wiring	January 2028 – October 2028
MV station foundations	October 2027 – May 2028
MV station equipment delivery and installation	March 2028 – July 2028
Main transformer substation civil works	December 2027 – June 2028
Main transformer substation equipment delivery and installation	March 2028 – October 2028
Transmission line install	March 2028 – October 2028
Testing & Commissioning	
DC testing	May – October 2028
MV commissioning and testing	October 2028 – March 2029
HV commissioning and testing	November 2028 – March 2029
Site Restoration	
Restoration e.g., of temporary access roads and temporary laydown areas	April to June 2029

3.6.2.1 *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.

3.6.2.2 *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 roads 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 for the future land use will be removed and restored by replacing the topsoil and seeding the area or as otherwise agreed to with the landowner.

3.6.2.3 *Laydown Area*

A construction laydown area will occur on the Project Location, adjacent to where the solar PV arrays are installed. The laydown area will be cleared of vegetation and topsoil will be removed where required and stockpiled for later re-use on-site during site restoration. Selected areas will then be laid with compacted gravel.

3.6.2.4 *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. The fence design includes an 8,000 m fence, approximately 2 m high. Signage will be posted identifying the facility as a solar project on private land.

3.6.2.5 *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.

3.6.2.6 *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 2900 trackers, each holding up to 50 PV modules. The modules will be hand mounted on the racking system by installers with the help of a small mobile crane if needed. Once completed, areas beneath and immediately surrounding the solar PV modules will be seeded with graze species to promote continued agricultural use of the land (agrivoltaics).

3.6.2.7 *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.

3.6.2.8 *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 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.

3.6.2.9 *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 1, Appendix A).

3.6.2.10 *Testing and Commissioning*

Following the installation of all electrical components, testing and commissioning will be performed prior to and following 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.

3.6.3 *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. The Project will be operated remotely and, accordingly, no employees will be on

site with the exception of maintenance and inspection personnel or security staff (as needed). 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. An acoustic assessment has been completed (H376108-0000-846-066-0001) to assess expected noise levels during the operation and maintenance phase. Noise levels at all identified receptors are expected to be at or below the 40 dB performance limit threshold.

3.6.3.1 *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. Vegetation management will prioritize non-chemical methods, including mowing and potential livestock grazing, to maintain ground cover and support continued agricultural use of the lands through an agrivoltaics approach. 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 reseeded 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 quarterly 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.

3.6.3.2 *Stormwater Management*

A stormwater management design has been prepared and has been appended to the Design and Operations Report (H373113-0000-840-066-0006). The purpose of the plan is to minimize any potential negative environmental effects to the existing drainage conditions (e.g., increased runoff, erosion and sedimentation) 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.
- Rainfall runoff from the 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. A spill response plan can be found in the Design and Operations Report (H373916-0000-840-066-0006).

3.6.3.3 *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.

3.6.3.4 *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.

3.6.3.5 *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.

3.6.3.6 *Exhaust Equipment*

The Project has no facilities or equipment that will discharge contaminants or pollutants to the air during normal operation of the Project.

3.6.3.7 *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. An Acoustic Assessment Report (H375916-0000-846-066-0001) has been prepared to review proposed locations of noise emitting equipment and confirm the applicable MECF and NPC-300 noise levels will not be exceeded during operation.

3.6.3.8 *Emergency Response and Communication Plan*

An Emergency Response and Communication Plan (ERCP) will be implemented to ensure the safety of personnel, the public, and the environment throughout all phases of Project development. The plan will outline clear procedures for responding to potential emergencies such as severe weather, medical incidents, and equipment failures. It will also establish communication protocols with emergency services, regulatory agencies, and project stakeholders to ensure timely and effective information flow during and after any potential incidents. The ERCP will be reviewed regularly and updated as needed to reflect changes in project activities, site conditions, and regulatory requirements as development proceeds. The ERCP has been developed as part of the Designs and Operations Report (H375916-0000-840-066-0006), which outlines the exact site plan, design of the facility, how emergency communications will be handled, and details regarding operation of the facility including how environmental effects will be monitored and mitigated.

3.6.4 *Decommissioning*

The anticipated lifespan of the Project is approximately 35 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 (H375916-0000-840-066-0007) has been developed and published as part of the REA application process.

3.6.4.1 *Management of Waste and Excess Materials*

All waste and excess materials will be disposed of in accordance with applicable regulations. Waste that can be recycled under municipal programs will be recycled accordingly. Waste that requires disposal will be disposed of in a provincially licensed facility by a provincially licensed hauler. Although hazardous waste is not anticipated on site, any hazardous waste will be removed from site and disposed of in accordance with provincial requirements.

Typical waste materials and modes of disposal, recycling, or reuse are listed in Table 3-2.

Table 3-2. Typical Facility Decommissioning Waste Materials and Modes of Disposal

Component	Disposal Method
Solar Panels	Reuse or recycle
Steel racks and mounts	Salvage for reuse or recycle for scrap
Cabling	Recycle
Inverter step-up transformers, inverters and circuit breakers	Salvage for reuse or recycle for scrap
Concrete foundations	Crush and recycle as granular material
Granular materials	Reuse or dispose in landfill
Geotextile material	Dispose in landfill
Oils/lubricants	Recycle
Hazardous material	Dispose through licensed hauler
Miscellaneous non-recyclable materials	Dispose in landfill

4. Potential Negative Environmental Effects

The potential negative environmental effects that may occur during construction, operation and decommissioning phases of the Project are described in Table 4-1. The categories for the potential negative environmental effects were selected following the *Technical Guide to Renewable Energy Approvals* (MECP, 2023) and include:

- Cultural Heritage – includes protected properties, archaeological resources, and heritage resources;
- Natural Heritage – includes provincial parks or conservation reserves, Areas of Natural and Scientific Interest (ANSIs) (earth science and life science), southern wetlands, wildlife habitats, and woodlands;
- Water – includes water bodies, such as lakes, permanent streams, intermittent streams and seepage areas;
- Air, Odour and Dust;
- Noise;
- Local Interests, Land Use and Infrastructure;
- Provincial and local infrastructure;

- Public Health and Safety;
- Areas Protected under Provincial Plans and Policies; and
- Other Resources.

Based on current knowledge of the Project, Project Location and standard/regulated environmental protection practices, proposed mitigation measures have been provided as have monitoring activities to be undertaken to confirm mitigation measures are having the intended effects. Further details of the studies undertaken, potential impacts considered, and recommended mitigation and monitoring are provided in the

- Natural Heritage Assessment Report (H375916-0000-840-066-0002).
- Water Body Assessment Report (H375916-0000-840-066-0004).
- Construction Plan Report (H375916-0000-840-066-0008).
- Design and Operations Report (H375916-0000-840-066-0006).

4.1 Preliminary Records Review and Site Visit.

A preliminary records review and site reconnaissance were conducted to support early-stage planning and natural heritage characterization for the Project. The records review included an evaluation of available provincial and regional data sources such as the Natural Heritage Information Centre (NHIC) Make-a-Map tool, Land Information Ontario (LIO), Crown Land Use Policy Atlas (CLUPA), and satellite imagery. The review focused on identifying the potential presence of species at risk (SAR), wetlands, watercourses, woodlands, and other natural heritage features within at least 300 m of the proposed Project location, consistent with Chapter 5 of the MECP's *Technical Guide for Renewable Energy Projects*.

Site reconnaissance and targeted surveys were completed by Hatch Biologists in Spring and summer 2025 to validate the findings of the records review, provide a baseline characterization of site conditions, and inform Project design and where necessary Environmental Impact Studies . The site was assessed on foot to the extent feasible, with the reconnaissance generally extending to a 300-m buffer around the Project location. Results of the site studies have been documented within the Natural Heritage Assessment Report (H375916-0000-840-066-0002).

Table 4-1: Potential Negative Environmental Effects

Category	Environmental and Social Component	Potential Environmental Effects (Construction, Operation and Decommissioning)	Proposed Mitigation
Cultural Heritage	Archaeological Resources	Excavations during Project construction may result in the discovery and/or disturbance of archaeological resources.	<p>The archaeological assessment process can include between 1 and 4 stages, beginning with a determination of the potential for archaeological resources (Stage 1), followed by a resource inventory (Stage 2), archaeological site assessment (Stage 3) and if necessary, mitigation (Stage 4).</p> <p>A Stage 1 Archaeological Assessment has been undertaken by a licensed archaeologist at the proposed Project Location. No further archaeological work was recommended as a result of the assessment.</p> <p>During construction, if an artifact is found, work will stop until a licensed archaeologist has cleared the area and approved that construction can recommence, in accordance with Ministry of Citizenship and Multiculturalism requirements.</p>
	Protected Properties, Built Heritage and Cultural Heritage Landscapes	The proposed Project has the potential to cause negative effects to protected properties, built heritage and cultural heritage landscapes if such resources are identified in the vicinity of the proposed Project Location.	<p>No protected properties or built heritage resources have been documented on or within 300 m of the Project Property.</p> <p>A site inspection was completed by an experienced cultural heritage practitioner. In consideration of heritage within the Project, the REA Checklist: consideration of Potential Heritage Resources was consulted. No criteria or potential for cultural heritage resources on the property or within the project area was identified therefore no Cultural Heritage Evaluation Report (CHER) is required.</p>
Natural Heritage	Areas of Natural and Scientific Interest (ANSI)	No ANSIs were identified within 300 m of the Project Location.	None required.

Category	Environmental and Social Component	Potential Environmental Effects (Construction, Operation and Decommissioning)	Proposed Mitigation
	Wetlands	The Project Location has been setback 30 m from all. Therefore, only indirect effects may occur (e.g., spills, dust, erosion and sedimentation).	The Project Location has been set back 30 m from all wetlands. Sediment and erosion controls will be installed wherever the Project Location is within 50 m of a wetland. Spill prevention and response measures will be implemented. Dust suppression and stockpile stabilization will be used if required.
	Woodland/ Vegetation	The Project is located within areas of thickets, coniferous upland forest, mixed wood forests and agricultural lands. During construction, tree removal will be necessary to facilitate the construction of the Project.	Work areas will be flagged to limit clearing and ensure it will not extend beyond the Project Location.
	Terrestrial Wildlife/ Wildlife Habitat (including species at risk)	Potential loss of wildlife habitat and potential wildlife avoidance of the Project Location during construction and operation may occur as a result of disturbance.	Work areas will be clearly marked and will not extend beyond the Project Location. Studies were conducted in 2025 to identify candidate Significant Wildlife Habitats and identify necessary setbacks and additional mitigation measures. The results of these studies are documented as part of the Natural Heritage Assessment report. Additional mitigation measures include phasing vegetation removal outside of the active breeding bird and bat maternity periods (April 15 to August 31), and setbacks from present natural heritage features (wetlands, waterbodies).
	Physiography/ Topography	During construction, regrading of excavated soils and some minor alterations to local topography may occur.	future land-use and as agreed to with the landowner

Category	Environmental and Social Component	Potential Environmental Effects (Construction, Operation and Decommissioning)	Proposed Mitigation
	Soils	Grading activities are not expected to require soil excavation or removal from the Project Location. Potential reductions in soil quality may occur as a result of accidental spills, erosion, and soil compaction during construction.	Erosion and sediment control measures will be implemented prior to and during construction and will remain in place until vegetation and soils are stabilized at the Project Location. Mitigation measures will be implemented to protect soil quality and minimize compaction during construction.
Water	Surface Water	Accidental spills and soil sedimentation and erosion pose a risk of deteriorating surface water quality.	As described within the Waterbody Assessment Report (H375916-0000-840-066-0004), a 30-m setback will be applied from all waterbodies. Erosion and sediment control measures and spill prevention and response measures will be implemented to minimize any potential impacts to surface water. Details are provided in the Construction Plan Report, Design and Operations Report, and Decommissioning plan Report. A Stormwater Management plan has also been developed as part of the Design and Operations Report. The Stormwater Management Plan will generally maintain existing drainage patterns throughout the Project Location.
	Groundwater	Accidental spills pose a risk of deteriorating groundwater quality.	Spill prevention and response measures will be put into place throughout the Project Location to minimize the likelihood and impact of accidental spills. An Emergency Response and Communications Plan including spill response has been included in the Design and Operations Report (H375916-0000-840-066-0006).

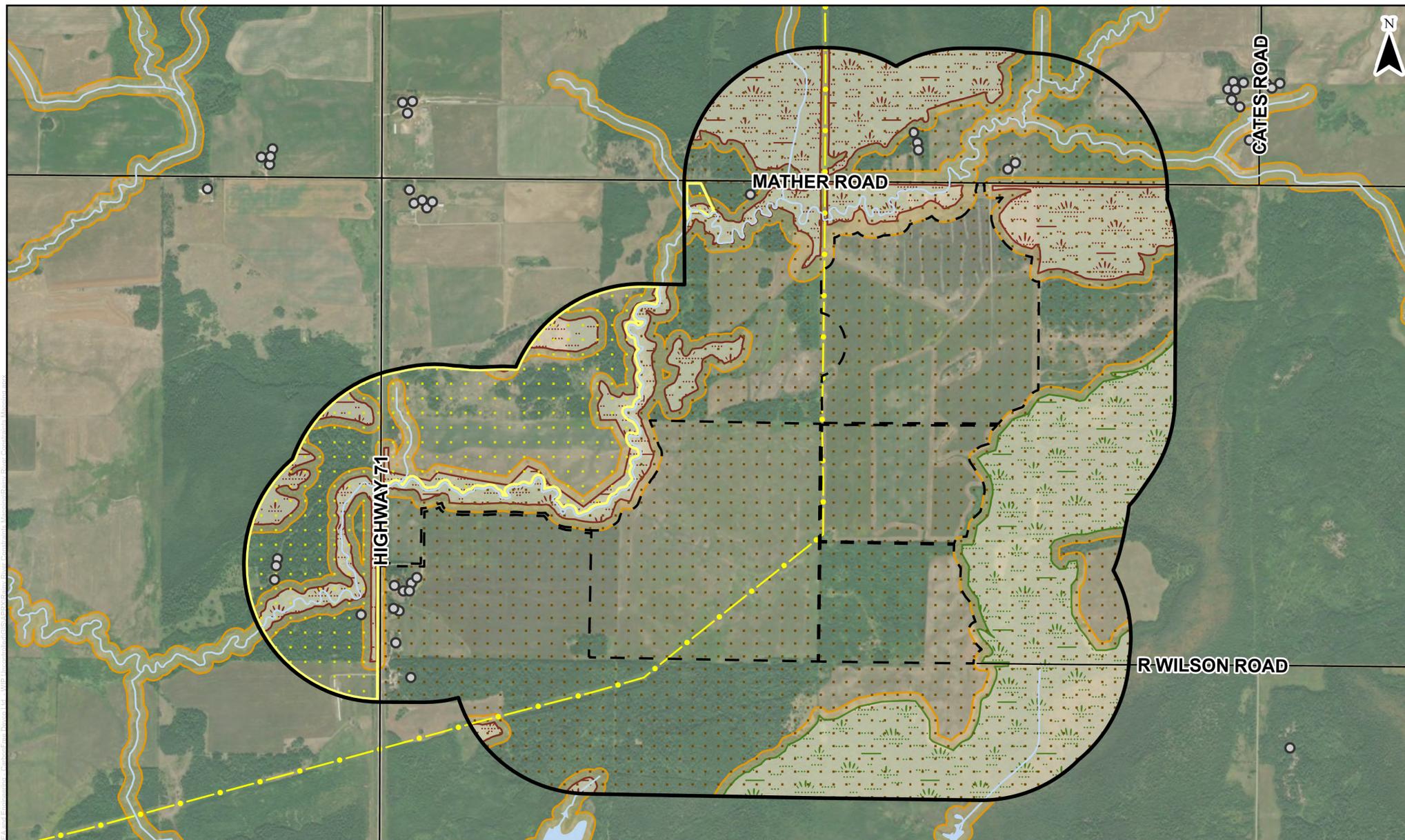
Category	Environmental and Social Component	Potential Environmental Effects (Construction, Operation and Decommissioning)	Proposed Mitigation
	Aquatic Habitat	The installation of the Project may result in negative impacts to fish and fish habitat, due to loss of riparian vegetation which provide sources of shade, cover and food production. In addition, certain materials such as fuel, lubricating oils and other fluids associated with Project activities have the potential to negatively impact aquatic habitats.	A 30-m setback of the Project Location from all waterbodies will be applied to ensure the protection of aquatic biota and habitats. Erosion and sediment controls and spill prevention and response measures will be implemented to minimize any potential impacts to aquatic biota/habitats.
Air Quality	Air Quality, Odour and Dust	Reductions in local air quality may occur during construction and decommissioning. Fugitive dust may occur as vegetation is removed and soils remain bare, as well as through the operation of equipment and vehicle traffic. There are no anticipated impacts identified during operations.	Mitigation measures will include standard best management practices. Dust will be suppressed during construction/ decommissioning, in accordance with provincial requirements and regulations.
Noise	Noise	Temporary disturbance to neighboring residents, businesses and surrounding wildlife may occur during construction and decommissioning. The operation of inverters and transformers may result in increased ambient sound levels.	Siting of noise emitting equipment will be the primary mitigation measure to accommodate NPC-300 standards at adjacent noise receptors. Any necessary additional mitigation or noise attenuation strategies will be developed, as required.
Local Interests, Land Use and Infrastructure	Visual Landscape	Installation of the Project will result in a change to the local landscape.	. A vegetated buffer will be planted (or maintained) in selected areas around the project perimeter to minimize visual impacts.
	Land Use	The Project is proposed to be located on privately owned land which is currently utilized for agricultural activities or is currently vacant and covered by woodland and successional vegetation.	Public and municipal consultation is ongoing to identify and resolve any concerns. All electrical infrastructure will be properly grounded to minimize the potential for stray voltage impacts on livestock.

Category	Environmental and Social Component	Potential Environmental Effects (Construction, Operation and Decommissioning)	Proposed Mitigation
	Traffic	<p>Construction and decommissioning of the Project may result in increases in local area traffic and the potential for temporary disruption along routes used.</p> <p>Traffic flow is not expected to be affected throughout the operation of the Project. Traffic impacts are not expected to have any significant effects on landfill sites or airports.</p>	<p>Traffic mitigation measures such as signage, and use of traffic control workers may be required over short durations with the goal of ensuring public and worker safety and minimizing impacts to traffic flow. Mitigation would include, but not limited to, designated entrance points, speed limits, signage and other measures to control traffic and safety protocols.</p>
Provincial and Local Infrastructure	Local Roads	<p>Construction, operation and decommissioning of the Project will require the use of roads maintained by the Ministry of Transportation, the District of Rainy River and the Township of Chapple. Some additional wear and tear of these roads may occur as a result of heavy vehicle traffic during project construction and decommissioning.</p>	<p>Mitigation could include, but is not limited to, designated entrance points, speed limits, signage and other measures to control traffic and safety protocols.</p>
Public Health and Safety	Community Safety	<p>Construction and decommissioning of the Project will result in a risk to community and workforce safety.</p> <p>During operation, potential risks to public safety are limited.</p>	<p>Safety procedures will be followed to ensure both worker and public safety. The public will not be allowed access during construction, operations or decommissioning. Perimeter fencing and gating will be utilized to prevent unauthorized access. An Emergency Response and Communication plan is included within the Design and Operations Report (H375916-0000-840-066-0006). It will be updated as development progresses.</p>
Areas Protected under Provincial Plans and Policies	Protected Area	<p>The Project is not within any provincial land use plan areas (i.e., Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan, Lake Simcoe Protection Plan).</p>	<p>None required.</p>

Category	Environmental and Social Component	Potential Environmental Effects (Construction, Operation and Decommissioning)	Proposed Mitigation
Other Resources	Waste Management and Disposal Sites	Construction and decommissioning of the Project will likely result in the generation of recyclable material, and municipal and sanitary waste.	The disposal and proper storage of wastes and recyclables will occur in accordance with municipal and provincial requirements and regulations.
	Aggregate Resources	The Project will not influence the availability of aggregate resources in the area. Any aggregate resources available within the Project Location will remain in place throughout the construction, operation and decommissioning of the Project.	The Project will not influence the availability of aggregate resources in the area. Any aggregate resources available within the Project Location will remain in place throughout the construction, operation and decommissioning of the Project.
	Airports / aerodromes	Nestor Falls Airport and International Falls Airport are located over 40 km away from the Project Location. Currently, glare associated with the Project is not anticipated to be a concern.	Backtracking technology is anticipated to minimize potential glare impacts.

Appendix A

Project Location

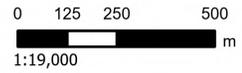


LEGEND

- Building
- Transmission Line
- Road
- Watercourse
- Project Location
- Study Area (500m Buffer)
- Agricultural Zone
- Rural Zone
- Setback
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

NOTES:

1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 15N



PROJECT: CarbonFree Rainy River Solar Project - Project Description Report				
FIGURE TITLE: Project Location				
CLIENT: CarbonFree Rainy River LTD				
DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.: 1	REV NO.: A	
DATE: 03/03/26	PAGE: 1			