CarbonFree Rainy River Project

Construction Plan Report

H375916-0000-840-066-0008

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Table of Concordance

The following concordance table cross-references the contents of this Construction Plan 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		Report Section
1.	Describe any construction or installation activities.	Section 2
2.	Describe the location and timing of any construction of installation activities for the duration of the construction or installation.	Section 2.1
3.	Describe any negative environmental effects that may result from construction or installation activities.	Section 3, Table 5-2
4.	Describe mitigation measures in respect of any negative environmental effects.	Section 4, Table 5-2

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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 230 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.

Construction of the Project will commence in Q1 2027 once the Renewable Energy Approval (REA) and other required permits have been obtained. This Construction Plan Report provides a detailed description of the construction phase activities, including location and timing details.

1.1 Legislative Requirements

The Construction Plan Report is a supporting document required for an REA under Section 13 and Table 1 of O. Reg. 359/09 – Renewable Energy Approvals Under Part V.0.1. of the Act. This report is required as part of an application for all renewable energy projects that require an REA with the exception of Class 2 wind facilities.

1.2 Purpose of Report

The purpose of the Construction Plan Report is to describe the project activities that will be undertaken during the construction phase so that all potential negative environmental effects may be identified. The report also describes mitigation measures that will be implemented to mitigate the potential negative effects during construction. Finally, the report will be made available to local boards, the public, Indigenous communities and other stakeholders to communicate details of the planned construction activities.

Section 2 of the Report describes the construction and installation activities including location and timing. Section 3 presents the potential negative environmental effects and Section 4 describes the proposed mitigation measures to prevent or reduce those potential effects. Finally, Section 5 summarizes environmental monitoring of identified negative environmental effects that may occur during construction.

2. Project Construction and Installation Activities

2.1 Construction Overview

Project Construction will include four phases, which are further described in Section 2.2:

- Phase 1 – Site Preparation.
- Phase 2 – Construction and Installation.
- Phase 3 – Equipment Testing and Commissioning.
- Phase 4 – Site Restoration.

2.1.1 Site Plan

Appendix A contains a conceptual site plan depicting the proposed facility components including the access roads, solar PV module arrays, inverters, transformers, and the connecting electrical line. Setback distances from identified significant natural features and waterbodies are also shown.

2.1.2 Construction Schedule

Construction of the Project is expected to commence in Q1 2027 once the REA and other required permits have been obtained. The construction period is estimated to be approximately 24 to 30 months in duration, with Project commissioning anticipated in 2029. The approximate timeline of each of the four construction stages is provided in Table 2-1.

Construction hours will normally be from 7:00 a.m. to 7:00 p.m., Monday through Friday; however, there may occasionally be the need to work extended hours and/or on the weekends.

Table 2-1: Approximate Construction Schedule

Activity	Approximate Timeline
Site Preparation	
Vegetation clearing	January 2027 to March 2027
Fencing	July 2027 to September 2027
Temporary access roads and laydowns	July 2027 to September 2027
Grading and drainage	July 2027 to September 2027
Construction and Installation	
Solar pile install	November 2027 to June 2028
Trackers and racking	December 2027 to September 2028
Solar modules, combiner boxes, DC wiring	January 2028 to October 2028
Medium-voltage station foundations	October 2027 to May 2028
Medium-voltage station equipment delivery and installation	March 2028 to July 2028
Main transformer substation civil works	December 2027 to June 2028
Main transformer substation equipment delivery and installation	March 2028 to October 2028

Activity	Approximate Timeline
Transmission line install	March 2028 to October 2028
Testing and Commissioning	
DC testing	May 2028 to October 2028
Medium-voltage commissioning and testing	October 2028 to March 2029
High-voltage commissioning and testing	November 2028 to March 2029
Site Restoration	
Restoration, e.g., of temporary access roads and temporary laydown areas	April 2029 to June 2029

2.1.3 Workforce

The Project will employ a workforce recruited from within the local area including local Indigenous communities to the greatest extent possible. The workforce will include construction supervision, general and skilled labour, equipment operators, technicians for electrical systems and commissioning, plant installation and operation, security and general maintenance.

2.1.4 Power and Communication

During construction, electrical power will be provided by portable diesel generators for small equipment and hand tools supplied by the Contractor. The Proponent may also obtain an electrical power supply feed and communication line from the local utilities, to provide the needed electricity for the construction offices, security lighting, and other purposes.

2.1.5 Temporary Water Takings

No temporary water takings from a ground or surface water source will be required for construction. In order to meet the water demand during construction, the Contractor will be required to supply water by truck. The water will be used for construction, sanitary, and dust control purposes.

2.1.6 Materials/Waste Generated at or Transported from the Project Location

Typical construction wastes, such as broken PV modules, electrical wires, wood, and miscellaneous packaging materials, will be sorted and disposed of in accordance with local, provincial, and federal regulations during construction. Recyclable waste will be transported to the closest recycling center at the expense of the Contractor. As required, the Contractor will supply and maintain on-site portable self-contained toilets.

2.2 Phase 1 – Site Preparation

Site preparation includes site clearing and grubbing, construction of temporary laydowns, surface grading, construction of access roads, drainage systems, and installation of security fencing.

2.2.1 *Site Survey and Staking*

A registered Ontario land surveyor conducted a site survey in late 2025 and early 2026, and marked the exact location of the site perimeter for fencing and access road layout. Additional surveying will be completed as required.

2.2.2 *Vegetation Clearing*

Trees and large standing vegetation will be cleared where necessary. Meadow vegetation will be left in place to the extent possible. Tree cutting will be completed using chainsaws. Stumps, roots and brush vegetation will be removed using an excavator or small bulldozer.

During the clearing activities, areas with standing vegetation excluding merchantable timber and/or large diameter trees shall be mulched and distributed on-site as biodegradable erosion protection matting for exposed soil areas accordingly.

2.2.3 *Construction Laydown Area (Temporary Land Use)*

One construction laydown area will be developed on the property. The laydown area will be located adjacent to where the solar PV arrays are installed, will be cleared of vegetation, and topsoil will be removed where required and stockpiled for later reuse on-site during site restoration. Selected areas will then be laid with compacted gravel.

The laydown area will be used as a truck unloading and loading area and to temporarily store various machinery, equipment and materials needed for construction. It will also include fuel and waste storage areas, and modular office and washroom trailers.

2.2.4 *Sediment and Erosion Controls*

Prior to any vegetation removal, clearing and/or grading activities, sediment and erosion control measures (e.g., silt fence barriers) will be installed in accordance with a Sediment and Erosion Control Plan to be prepared for the Project. All sediment and erosion control measures will remain in place throughout the construction period and will be routinely inspected and maintained by the Contractor.

2.2.5 *Access Roads*

A permanent access road will be constructed from Wilson Road. The access road will be approximately 6 m wide and constructed of crushed gravel. A smaller gravel road will be constructed 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. Ditches and culverts will be constructed, as necessary, to maintain drainage.

2.2.6 *Surface Drainage*

Alterations to land topography will be limited to minor grading as required. Surface runoff will be directed to existing drainage systems (e.g., roadside ditches). Accordingly, alterations to the existing surface drainage patterns are not expected as part of the construction and of the Project. This will ensure productivity of the agricultural land is maintained.

2.2.7 Safety and Security

The Project Location will be gated and fenced to prevent unauthorized access. The fence design includes an 8,000 m chain-link fence, approximately 2 m high, and topped with barbed wire. Signage will be posted identifying the facility as a solar project on private land. Additional security measures may be installed such as task or motion-sensor lighting, and/or security cameras.

2.3 Phase 2 – Construction and Installation

The next phase of Construction consists of installation of foundations and structural supports for the solar PV modules, inverters and transformers; installing the inverters, transformers and associated electrical cabling and the electrical distribution lines; as well as construction of the main transformer substation yard and containment structure.

2.3.1 Inverter Building and Electrical Equipment Foundations

Foundations will be required beneath transformers and inverters. Subsurface grounding grids may be required depending on soil resistivity conditions. Foundation construction for electrical equipment comprises of excavation and removal of surface materials (topsoil will be stockpiled for later reuse during site restoration), placement of granular material, formwork, reinforcing steel, grounding, and placement of cast-in-place concrete pads. Ready-mix concrete will be delivered by transit mixer truck from a local supplier.

2.3.2 Solar PV Modules

The Project will include approximately 130,676 solar PV modules. These modules will be hand-mounted on the supporting structure by PV installers.

2.3.3 PV Module Structural Support

The PV modules will be mounted on single axis trackers. The trackers will be supported by steel posts which are founded in either concrete slab-on-grade, or foundations buried in the ground to a depth below the frost line.

2.3.4 Substation Construction

The substation yard will be cleared of vegetation and topsoil will be removed and stockpiled for later reuse during site restoration. Construction of the substation yard will include installation of ground grid, foundation construction, construction of a secondary containment structure, covering the area with crushed stone, and installation of the substation transformer and other electrical equipment. Switchgear, protection and control equipment will be housed in a prefabricated, weatherproof building enclosure.

2.3.5 Electrical System and Trenching Requirements

A network of underground DC cabling will be required from the termination point of each PV array at combiner boxes to the inverters and medium-voltage transformers. The inverters convert the DC electricity to AC and the transformers step up the voltage to 34.5 kV. A network of overhead and underground AC cables will be required to transmit the AC current

to the main transformer situated in the substation yard and will then flow through overhead electrical lines to the existing HONI transmission system.

Electrical cables will be buried below grade according to the Ontario Electrical Safety Code. A simple trenching device will be used to install the underground cables, whereby a slot is opened, the cable laid with sand above and below, and the excavated soil replaced. Where necessary, and as approved by the Electrical Safety Code, conduits will be used to house and protect the electrical cabling.

2.3.6 Construction and Installation Equipment

Table 2-2 lists the equipment that is expected to be used in the construction of the Project. The construction equipment will be driven to the site, and any heavy machinery will be transported via trailer. The construction equipment will generate noise, dust and air emissions (exhaust) during operation. These activities are not expected to have any significant negative environmental impact on nearby wildlife or vegetation.

The construction vehicles and some machinery use a variety of petroleum-based or synthetic chemicals including fuel (diesel and gasoline) for engine combustion; lubricants (motor oils) for engine cooling and lubrication of mechanical parts; hydraulic fluids (mineral oil) for hydraulic systems such as brakes, power steering, backhoes and excavators; and coolants (methanol, glycol blends) used in vehicle radiators and windshield antifreeze. The potential effects of accidental spills or leakage of theses fluids, along with mitigation measures to prevent and/or clean-up spills are discussed in Sections 3.18 and 4.18, respectively.

Table 2-2: Tentative List of Potential Construction Equipment

Equipment	Approximate Size/Weight	Usage
Track-Type Tractor	38 T	Land clearing and grubbing; spreading granular material for access road.
Wheel Tractor-Scraper	26 T	Excavating and moving topsoil.
Hydraulic Excavator	26 T	Excavating topsoil and placing backfill.
Backhoe Loader	9 T	Excavating topsoil and placing backfill.
Wheel Loader	20 T	Moving soil and granular material.
Dump Truck	20 T	Transport and placement of granular for access road.
Motor Grader	19 T	Grading of access road during construction (as necessary).
Drum Vibratory Compactor	11 T	Granular compaction for access road.
Crawler Crane	50 T	Pile driving or installation of screw piles.
Pile Driving Equipment	20 T	Mounted on the crawler crane, used for driving piles.
Rough Terrain Crane	23 T	Unloading and moving material and equipment.
Telescopic Handler	10 T	Unloading and moving material and equipment.

Equipment	Approximate Size/Weight	Usage
Concrete Transit Mixers	20 to 25 T (loaded)	Transportation and placement of concrete mix for foundations.
Container Box and Flatbed Semi-Trailers	40 to 70 T (loaded)	Transportation of tracked machines (bulldozers, excavators), large electric equipment (inverters, transformers, building enclosures) and materials (precast concrete pads, solar PV modules and support racks).
Pickup Trucks	3 T	General transportation of small equipment, materials, and personnel.
Diesel Generators, Air Compressors		Power supply for electrical equipment (hand tools, etc).
Hand Tools - Drills, Saws, wrenches, Concrete Vibrators, Welders		General construction and assembly activities.

2.3.7 Materials Brought On-Site

Table 2-3 lists the principal construction materials that will be transported to the Project Location for construction and installation. In addition, estimates of the number of vehicle loads required and where the material will be used and/or temporarily stored is provided. Construction laydown will occur within the Project Location.

Table 2-3: Tentative List of Potential Construction Materials

Construction Material	Delivery Vehicle	Usage	On-Site Storage
Solar PV Modules	Semi-Trailer	Solar PV modules.	To be stored in laydown area for up to 18 months.
Solar PV Module Racks	Semi-Trailer	Racking supports for PV modules.	To be stored in laydown area for up to 18 months.
Steel Support Piles	Semi-Trailer	Foundation supports for PV modules racks.	To be stored in laydown area for up to 18 months.
Inverters, Transformers and Enclosures	Semi-Trailer	Electricity inversion and voltage transformation and equipment weather protection.	To be stored in laydown area for up to 18 months.
DC and AC Cables, and Conduits	Semi-Trailer	Electrical cabling and conduits.	To be stored in laydown area for up to 18 months.
DC Disconnects, Combiner Boxes and Connectors	Semi-Trailer	Electrical disconnect switches, wire combining and cabling connections.	To be stored in laydown area for up to 18 months.
Concrete	Semi-Trailer	Precast or poured foundations for racking and switchgear pad (including underground vault).	No.
Granular A	Dump Trucks	Access roads, substation yard, temporary laydowns, etc.	To be stored in laydown area for up to 18 months.
Granular B	Dump Trucks	Access roads, substation yard, temporary laydowns, etc.	To be stored in laydown area for up to 18 months.

Construction Material	Delivery Vehicle	Usage	On-Site Storage
Sand	Dump Trucks	Access roads, substation yard, temporary laydowns, etc.	To be stored in laydown area for up to 18 months.
Topsoil (if required)	Dump Trucks	Site Restoration	To be stored in laydown area for up to 30 months.

2.4 Phase 3 – Testing and Commissioning

Testing and commissioning will be performed on the installation prior to and after start-up and connection to the power grid. Solar modules, inverters, cabling, will be checked for system continuity, reliability, and performance standards. If problems or issues are identified, modifications will be made prior to start-up. Additional commissioning tests will be performed following connection.

2.5 Phase 4 – Site Restoration

After construction is complete, any remaining construction material, equipment, debris and waste will be removed from the site. Any topsoil that had been removed and stockpiled during construction will be reused where possible and the areas will be revegetated. If any soils show evidence of compaction, mechanical loosening/aeration may be used to improve the success of revegetation efforts. Areas beneath and immediately surrounding the solar PV modules will be seeded with graze species to promote continued agricultural use of the land (agrivoltaics). A “green screen” of trees will be planted (or maintained) in selected areas to help mitigate potential noise and aesthetic impacts to local residences.

3. Environmental Effects

The potential negative environmental effects that may occur during construction are described below and summarized in Table 5-1. The assessment considers potential effects within 300 m of the Project Location.

Information on the existing baseline conditions of the natural heritage and water body features can be found in the following documents:

- Natural Heritage Assessment Report (Hatch Ltd., 2026. H375916-0000-840-066-0002).
- Water Body Assessment Report (Hatch Ltd., 2026. H375916-0000-840-066-0004).

3.1 Archaeological Resources

A Stage 1/2 Archaeological Assessment was completed in 2025. No areas of archaeological potential were identified, and no further archaeological assessment was recommended.

There remains a potential to uncover deeply buried heritage or archaeological resources (including human burial sites) which would not have previously been identified. Mitigation measures to apply in the event of such a chance find are discussed in Section 4.12.

3.2 Built Heritage and Cultural Heritage Landscapes

A Cultural Heritage Assessment was completed in 2025 to determine if there could be any potential negative impacts of the Project on any heritage buildings and structures or cultural heritage resources. The assessment determined that the Project Location was absence of criteria that would necessitate further action in the form of a Cultural Heritage Evaluation Report. No mitigation measures have been recommended as there were no resources observed.

3.3 Topography

No major earth excavation, filling or regrading works are anticipated that would result in significant alteration to the existing topography. As part of the site preparation activities, some infilling of low-lying areas is expected, followed by general surface grading and contouring where required. Soils will be excavated for the construction of foundations and trenches will be dug for the buried cables. In both cases, these excavations will then be backfilled and leveled to match the existing grade, resulting in no impacts to topography. There will be no impacts to topography for lands adjacent to the Project Location since no landform alterations will occur on adjacent lands.

3.4 Soils

Construction activities could potentially result in negative effects on soil, including rutting and compaction from heavy machinery, erosion of unvegetated soils, especially along slopes and during precipitation events, and accidental spills. Potential adverse effects on soils due to accidental spills are further discussed in Section 3.18. Mitigation measures to address impacts to soil are described in Section 4.3.

3.5 Vegetation

There will be some removal of natural vegetation (grasslands/meadowland, and trees and shrubs) required for the Project. This represents a minor loss of natural vegetation from the vicinity of the Project Location. The impact is considered reversible in the long term, as natural vegetation can be replanted following project decommissioning.

Vegetation communities in the vicinity of the Project Location may also be impacted by dust deposition on leaf surfaces, resulting in minor impairment of growth. This effect would be temporary in nature and will result in only short-term minor impacts to vegetation communities adjacent to the Project Location.

Mitigation measures to address these impacts to vegetation are described in Section 4.4.

Vegetation could also be damaged as a result of accidental spills which are addressed in Section 3.18.

3.6 Wetlands

Wetlands identified within or within 50 m of the Project Location are described in detail in the Project Natural Heritage Assessment (H375916-0000-840-066-0002). Project components and construction activities will be set back a minimum of 30 m from wetlands as described in

the Natural Heritage Assessment, with the exception of transmission line components of the Project. Where possible, laydowns and storage areas will be located 50 m from wetland features. Sediment and erosion controls will be put in place in instances where construction activities are required within 50 m of a wetland per the Projects Sediment and Erosion Control Plan. Further mitigation methods are detailed in Section 4.5. As a result of mitigation, no residual impacts to wetlands are expected.

3.7 Wildlife

Wildlife habitat is described in detail in the Project Natural Heritage Assessment (H375916-0000-840-066-0002). The Project will result in a loss of wildlife habitat as some meadows/grasslands and forested lands will be removed from the Project Location. This impact is considered reversible in nature, as natural vegetation could be restored following project decommissioning. The loss is also considered minor, as considerable amounts of these habitats would remain surrounding the Project Location.

The noise caused by the operation of construction machinery and equipment on-site and presence of the construction workforce may result in avoidance of the Project Location by species intolerant of these types of disturbances. Given the existing disturbance present in the area from the existing agricultural operations, roadways, and residential areas nearby, it is not anticipated that there will be a significant avoidance of the area.

The movement of construction machinery across the site has the potential to result in the incidental take of wildlife species as a result of collisions with moving vehicles. Machinery operating on-site will be travelling at low speeds and, therefore, the potential for incidental take is considered low, and likely restricted to species of small mammals and reptiles/amphibians that may be unable to rapidly move away from oncoming machinery.

These effects are temporary in nature and will result in only short-term minor impacts to wildlife communities on and in the vicinity of the Project Location. Mitigation measures to address these impacts are described in Section 4.6.

3.8 Surface Water

Surface water features within 300 m of the Project Location are documented in detail in the Project Water Body Assessment Report (H375916-0000-840-066-0004). Surface water quality of the tributaries located on and within 300 m of the Project Location could potentially be impaired during construction through sedimentation resulting from increased surface water runoff caused by vegetation removal, soil compaction, erosion of excavated or exposed soils, or through the deposition of fugitive dust. These effects are temporary in nature and will result in only short-term minor impacts to the waterbodies in the vicinity of the Project Location. The Project Location has been set back a minimum of 30 m from all water features. Where construction activities are required to take place within 120 m of a water body, sediment and erosion controls will be implemented between the Project Location and water body. Additional mitigation measures to address impacts to surface water quality are described in Section 4.7. Potential adverse effects to surface water quality as a result of accidental spills are discussed

in Section 3.18. The Stormwater Management Report is appended to the Design and Operations Report (H375916-0000-840-066-0006) and describes measures to maintain drainage patterns and water quality across the Project Location.

There are no expected impacts to surface water quantity. There will be no water taking for Project construction.

3.9 Groundwater

Dewatering of excavations will not be required for the support foundations and, therefore, no impacts to groundwater levels are expected.

Groundwater quality could be impaired as a result of contamination from accidental spills during construction (see Section 3.18).

3.10 Aquatic Habitat and Biota

Installation of solar PV modules will not have any direct adverse effects on aquatic habitat and/or biota, as the Project Location and construction activities will be set back 30 m of the average annual high-water mark of any of the watercourses.

Indirect adverse effects on aquatic habitat and biota may occur throughout construction. Construction activities could potentially result in adverse effects due to erosion in the Project Location which could then lead to sediment in the watercourses. Increased turbidity could affect biota (e.g., clogging of gills, alterations in behaviour, smothering of incubating eggs). Sedimentation within waterbodies could also adversely affect aquatic habitat. Mitigation measures to address these potential adverse effects are described in Section 4.9. Aquatic biota could also be negatively affected by accidental spills during construction (see Section 3.18).

Generally, standard mitigation measures as described in Section 4.9 such as sediment and erosion controls, stormwater management plans, and spill prevention and response plans are expected to avoid impacts to aquatic habitats and biota.

3.11 Air Quality and Noise

Dust may become airborne from vehicular traffic, heavy machinery use, and soil moving activities. Dust in the air can have a range of effects including, but not limited to:

- impacts on human health as a result of irritation to lungs, eyes, etc., ingestion/inhalation of potential contaminants which could impact construction workers or nearby residents;
- impacts on surface water quality and aquatic habitat if the dust is deposited into waterbodies; and
- impacts on vegetation if heavy dust loads build up on photosynthetic surfaces, thereby resulting in mortality of the plants.

In most cases, fugitive dust results in minor and temporary impacts.

In addition to impacts from dust, a variety of construction, haulage and personnel vehicles, as well as portable generators, will be used on-site during the construction period. The use of this equipment will result in exhaust emissions containing, among other emissions, carbon monoxide, nitrogen oxides and sulphur oxides. Operation of this equipment will result in some minor decrease in air quality in the immediate vicinity of operating equipment. This effect, however, will be temporary in nature and emissions would be expected to dissipate following the equipment being shut down or its movement out of the affected area.

Construction and installation activities will result in increased noise levels within the vicinity of the Project Location. Noise emanating from the Project Location could disturb neighbouring residents and other sensitive receptors in the vicinity of the Project Location, as well as disturb local wildlife populations.

Construction noise disturbance will be short term in nature and are expected to be minor in magnitude. Mitigation measures to address these impacts are described in Section 4.10.

3.12 Land Use

During construction, there will be a short-term reduction in the amount of land that can be actively used for agriculture. The land is not considered Prime Agricultural Land. Once all project components have been installed, site restoration, landscaping and agrovoltaics will return a portion of the Project Location back to the agricultural land base, including some areas that are not currently being used for that purpose. Therefore, no residual impact to land use is anticipated.

3.13 Traffic

Minor increases in traffic volumes and equipment delivery to the Project Location and temporary disruption along routes utilized by construction vehicles may result in occasional, minor delays to local community traffic flow during the construction period. This potential negative effect is most likely to affect the local area road users in the vicinity of the Project Location, as opposed to resulting in an inconvenience to a wider, regional area. Mitigation measures to address these impacts are described in Section 4.12.

3.14 Local Roads

The use of local roadways by heavy construction vehicle traffic may result in some minor roadway damage during the construction of the Project. This potential negative effect is most likely to affect the local area road users in the vicinity of the Project Location, as opposed to resulting in an inconvenience to a wider, regional area. Mitigation measures to address these impacts are described in Section 4.13.

3.15 Public Safety

Operation of heavy equipment (e.g., excavators, graders, dump trucks) and other construction vehicles presents a safety risk to the public if encountered. An active construction site in general poses many risks to the public who would not be wearing proper personal protective equipment. Mitigation to minimize this risk is described in Section 4.14.

3.16 Waste Management

Construction activities will likely result in the generation of recyclable material, construction wastes, and hazardous wastes including sanitary wastes. This has the potential to adversely impact soil and water, as well as human health. Mitigation measures to address these impacts are described in Section 4.15.

3.17 Protected Properties

No protected properties, as defined in Section 19(1) of O. Reg. 359/09, exist on or adjacent to the Project Location. Therefore, no adverse effects on protected properties will occur.

3.18 Spills

Spills of petroleum hydrocarbon materials from vehicles/equipment operating on-site or spills of concrete materials from concrete trucks could occur during the construction process. Spills may occur due to equipment failure or malfunction, leakage from storage areas (if such materials are stored on-site) as a result of weakness in the storage equipment, improper handling techniques, and/or improper refuelling techniques.

Spills may contaminate soils, surface water, and/or groundwater, and may adversely impact vegetation or terrestrial and aquatic biota. The magnitude of the impacts depends on the volume spilled and whether the spill occurs on land or in water. Spill response measures are discussed in Section 4.18.

4. Mitigation Measures

4.1 Archaeological Resources

There is limited potential for unplanned discovery of archaeological artifacts or human remains during project construction.

If any artifacts are discovered, work in the area will immediately cease. Flagging tape/temporary fencing will be used to restrict access to the area. A licensed archaeologist will be contacted to conduct an assessment, as well as local First Nation groups, where requested.

If any human remains are discovered, work in the area will immediately cease. Flagging tape/temporary fencing will be used to restrict access to the area. Local police will immediately be contacted.

Work will not resume until authorities have given approval to proceed.

4.2 Topography

Minimal grading of the Project Location is required. Decommissioning of the Project will include regrading to original conditions.

4.3 Soils

Where excavation occurs, topsoil will be temporarily stockpiled for later reuse. Site restoration will include mechanical loosening/aeration of soils if required.

Additionally, potential impacts to soils will be minimized by developing and implementing a robust Erosion and Sediment Control Plan (Section 4.17), and Spill Prevention and Emergency Response and Communications Plans (Section 4.18).

4.4 Vegetation

Construction limits will be flagged to prevent accidental clearing and disturbance beyond the area that is necessary to clear. The Contractor's on-site environmental inspector will monitor clearing to ensure it does not exceed these limits.

Progressive site reclamation will include replanting of vegetation where possible. All areas will be restored upon Project decommissioning.

The Contractor will also be responsible for dust control (see Section 4.10), erosion and sediment control (Section 4.17), and Spill Prevention and Emergency Response and Communications Plans (Section 4.18).

4.5 Wetlands

Avoidance will be the primary means of mitigation for wetlands, with all project generation components being set back at least 30 m from any wetland that is greater than 2 ha in size. The Project's transmission line is expected to overlap and span wetland features. Transmission line components will be sited with the intention of minimizing the overall footprint overlapping or occurring within wetlands. Sediment and erosion controls will be put into place where the Project location extends within 50 m of wetlands.

Other mitigation is addressed in the following sections: dust control (see Section 4.10), erosion and sediment control (Section 4.17), and Spill Prevention and Emergency Response and Communications Plans (Section 4.18).

4.6 Wildlife

To minimize the potential for bird and bat mortality (incidental take) resulting from construction activities, vegetation clearing will be timed to occur outside of the breeding bird period and bat maternity roosting period (generally April 15 through August 31). If this is not possible, a trained avian biologist will inspect the proposed work area for nesting birds immediately prior to any clearing. If an active nest is located within the proposed work area, a protective buffer will be implemented around the nest within no work can occur until the chicks have fledged the nest.

Construction vehicles and machinery will follow speed limits to minimize the potential for wildlife mortality due to collisions. Low speed limits will be enforced on dedicated Project access and internal roads. To further reduce the potential for wildlife mortality, operators must check under vehicles/machinery at the start of each workday to ensure no small animals such as turtles are present.

Mitigation for wildlife habitat will be as described for wetlands and vegetation, namely setbacks from wetlands (Section 4.5), implementation of erosion and sediment controls

(Section 4.17), and Spill Prevention and Emergency Response and Communications Plans (Section 4.18).

4.7 Surface Water

There will be no surface water takings for construction use. This will ensure there are no impacts to surface water quantity throughout and beyond the Project Location.

Avoidance will be the primary means of mitigation for surface water quality, with all project components being set back at least 30 m from any water body, watercourse or wetland.

Additionally, potential impacts to surface water during Project construction will be minimized by implementing dust controls (Section 4.10), an Erosion and Sediment Control Plan (see Section 4.17), and Spill Prevention and Emergency Response and Communications Plans (Section 4.18).

4.8 Groundwater

There will be no groundwater takings for construction use. This will protect groundwater levels throughout and beyond the Project Location.

Development and implementation of a spill prevention and response plan will reduce the possibility of impacting groundwater quality through accidental spills during construction. Details of the Spill Prevention and Emergency Response and Communications Plans are found in Section 4.18.

4.9 Aquatic Habitat and Biota

Avoidance will be the primary means of mitigation for potential impacts to aquatic habitat and biota. All project components and will be setback at least 30 m from any water body, watercourse or any wetland greater than 2 ha.

Additionally, potential impacts to aquatic habitats and biota during Project construction will be minimized by implementing dust controls (Section 4.10), an Erosion and Sediment Control Plan (see Section 4.17), and Spill Prevention and Emergency Response and Communications Plans (Section 4.18).

4.10 Air Quality and Noise

The following best management practices to mitigate air and noise emissions during construction will be implemented:

- Watering of unpaved roads during dry periods (approved chemical suppressants may be applied if watering is not sufficient or not practical).
- Stabilize and cover stockpiles as necessary (e.g., with mulch, geotextile, or other approved dust suppressant).
- Avoiding earth-moving works during excessively windy weather.
- Dust curtain to be used on loaded dump trucks delivering materials.

- Vehicles/machinery will be in good working condition with proper exhaust emission control systems.
- Limit vehicle/machinery idling.
- Limit all construction and installation activities to daylight hours.

Neighbouring residents, local Indigenous communities, and other stakeholders will be informed about the planned construction dates and times in advance and will be provided the contact information for the Contractor should they have any concerns with the dust or noise levels during construction. The Contractor will be responsible for dealing with reasonable concerns as quickly as possible.

4.11 Land Use

Site restoration following construction and installation activities will allow agricultural land uses to continue within the Project Location.

4.12 Traffic

To reduce the impacts of construction traffic to the public, designated transportation routes will be utilized, signage will clearly depict any detour directions, flagmen will be utilized if required, and all construction vehicles will be driven with respect for traffic laws.

4.13 Local Roads

To reduce the potential for damaging local roads during construction, construction traffic will utilize the highway rather than local roads to the extent possible. Additionally, any load/ tonnage restrictions will be adhered to. Damage to local roads will be repaired by the Contractor as necessary during the construction period.

4.14 Public Safety

The mitigation described above to reduce impacts on local traffic will also help mitigate risks to public safety, for instance, by having designated construction routes and ensuring the public is made aware of those routes.

Public safety will also be ensured at the Project Location by installing perimeter fencing, gates, signage, and security lighting and cameras. This will reduce the likelihood of unauthorized access.

4.15 Waste Management

Wastes will be sorted on-site (e.g., hazardous, non-hazardous, and recyclables) and stored appropriately into designated areas before being disposed of to an appropriate facility in accordance with local, provincial, and federal regulations. This includes storing any hazardous wastes with secondary containment until disposal off-site at a registered facility. If hazardous wastes are generated, the Contractor will also be responsible for registering through Ontario’s Hazardous Waste Program Registry.

4.16 Protected Properties

No protected properties, as defined in Section 19(1) of O. Reg. 359/09, exist on or adjacent to the Project Location. Therefore, no mitigation is required.

4.17 Erosion and Sediment Control Plan

The Contractor will be responsible for implementing the following erosion and sediment controls:

- Phase construction to minimize the time that soils are exposed.
- Silt fencing to be installed along the perimeter of construction areas within 50 m of wetlands, 120 m of watercourses and waterbodies, and ditches/drainage features.
- Temporary stockpiles to be located at least 50 m from any wetland, watercourse, water body or ditch/drainage feature, and will be stabilized to prevent wind and water erosion, as necessary.
- Disturbed areas will be stabilized and revegetated as soon as possible.
- Erosion and sediment control measures must be in place prior to the start of any earthworks and are to remain in place until areas disturbed during construction have been stabilized.
- An adequate supply of erosion (e.g., geotextiles, revegetation materials) and sedimentation (e.g., silt fences) control devices is to be provided on-site to control erosion and sedimentation and respond to unexpected events.

4.18 Spills

To mitigate the potential for spills during construction, the Contractor will be responsible for developing and implementing a Spill Prevention Plan and an Emergency Response and Communications Plan.

The Spill Prevention Plan will include the following measures:

- All potentially hazardous materials, fuels and lubricants must be stored in the laydown area, in a protected/bermed area and at least 50 m from watercourses.
- All refuelling and equipment maintenance activities will be conducted at least 50 m from wetlands or water features.
- Equipment is to be monitored to ensure it is well maintained and free of leaks.
- Portable toilets will be located no closer than 50 m from a watercourse/drain and will be pumped by a Ministry of the Environment, Conservation and Parks (MECP) approved hauler to an approved facility.

The Emergency Response and Communications Plan will include the following measures:

- Spill containment and cleanup supplies are to be maintained on-site at all times, including within all vehicles.
- All spills are to be reported immediately to the Site Environmental Inspector and/or Site Supervisor.
- The spill shall be contained and cleaned up as soon as possible.
- In the event of a reportable spill (e.g., spills of any volume within water, and spills of >100 L of hydrocarbons on land), the provincial Spills Action Centre (SAC) is to be contacted immediately, as required by provincial regulations.

The Emergency Response and Communications Plan will include the telephone number for the provincial SAC, and for local emergency responders.

A designated Site Environmental Inspector will be appointed by the Contractor to ensure compliance with these plans, and for ensuring that all site workers know what to do in the event of a spill.

5. Summary of Potential Residual Effects

A summary of each potential effect, proposed mitigation, and an assessment of the potential residual effects is summarized below in Table 5-2, using criteria outlined in Table 5-1.

Table 5-1: Environmental Effects Analysis Criteria

Criteria	Description of Threshold Ratings
Magnitude	• **Negligible (0):** No detectable change from baseline conditions. • **Low (1):** Differs from the average value for baseline conditions but remains within the range of natural variation and below a guideline or threshold value. • **Medium (2):** Differs substantially from the average value for baseline conditions and approaches the limits of natural variation, but equal to or slightly above a guideline or threshold value. • **High (3):** Differs substantially from baseline conditions and is significantly beyond a guideline or threshold value, resulting in a detectable change beyond the range of natural variation.
Geographical Extent (Biophysical)	• **Project Location (1):** Impact is limited to the Project Location. • **Study Area (within 50 m of Project Location) (2):** Effect occurs throughout the Study Area. • **Beyond Study Area (3):** Effect extends beyond the Study Area.

Criteria	Description of Threshold Ratings
Duration	• **Short Term (1):** Impact lasts less than 2 years (e.g., during the Construction Phase of the Project). • **Medium Term (2):** Impact lasts from 2 to 50 years (i.e., encompassing construction and operation phases). • **Long Term (3):** Impact lasts from 50 to 53 years (i.e., impact lasts into the decommissioning and post-closure phase).
Frequency	• **One Time (1):** Impact is confined to one discrete event. • **Sporadic (2):** Impact occurs rarely and at sporadic intervals. • **Regular (3):** Impact occurs on a regular basis. • **Continuous (4):** Impact occurs constantly.
Reversibility	• **Reversible (1):** Impact can be reversed. • **Partially Reversible (2):** Impact can be partially reversed. • **Permanent (3):** Impact cannot be reversed, is of permanent duration.
Ecological and Socio-Economic Context	• **High (1):** The receiving environment or population has a high natural resilience to imposed stresses and can respond and adapt to the impact. • **Neutral (2):** The receiving environment or population has a neutral resilience to imposed stresses and may be able to respond and adapt to the impact. • **Low (3):** The receiving environment or population has a low resilience to imposed stresses and will not easily adapt to the impact.
Certainty of Knowledge	• **High (1):** There is a good understanding of the cause-effect relationship and all necessary data are available for the Project. The effectiveness of the mitigation measures is well known. There is a low degree of uncertainty, and variation from the predicted effect is expected to be low. • **Moderate (2):** The cause-effect relationships are not fully understood, there are a number of unknown external variables, or data for the Project are incomplete. The effectiveness of mitigation measures is moderately well understood. There is a moderate degree of uncertainty; while results may vary, predictions are relatively confident. • **Low (3):** The cause-effect relationships are poorly understood, there are a number of unknown external variables, and data for the Project are incomplete. The effectiveness of the mitigation measures may not yet be proven. High degree of uncertainty and final results may vary considerably.

Table 5-2: Summary of Potential Negative Environmental Effects due to Project Construction and Installation

Environmental Component	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Archaeological Resources	• Excavation.	No archaeological resources are known to be present. However, there is a potential for chance discovery and disturbance during excavations.	• If human remains or archaeological resources are discovered, work is to be halted immediately and appropriate authorities notified.	2	1	1	0	2	3	1
Protected Properties, Built Heritage and Cultural Heritage Landscapes	N/A	None. No protected properties, built heritage or cultural heritage landscapes have been identified within 300 m of the Project Location.	• None required.	2	1	1	0	2	2	1
Areas of Natural and Scientific Interest (ANSI)	N/A	No ANSIs were identified within 300 m of the Project Location.	• None required.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Physiography and Topography	• Grading. • Excavation.	Alterations to local topography.	• Decommissioning of the Project will include removal of aggregate material and regrading to original conditions, unless otherwise agreed to by land owner to support future land uses.	1	1	2	1	1	2	1
Soils	• Site preparation (vegetation clearing, minor grading). • Excavation. • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Reduction in soil quality.	• Topsoil will be temporarily stockpiled for later reuse. • Stabilize stockpiles to prevent wind and water erosion. • Construction phasing and progressive reclamation to limit the amount of time soils are exposed. • Site restoration will include mechanical loosening/aeration of soils if required. • All waste will be sorted into different streams (e.g., recyclable, non-hazardous and hazardous wastes). • Wastes will be securely stored on-site in designated areas and appropriately labelled containers, with secondary containment as required until disposal at a local facility in accordance with provincial regulations.	2	2	2	2	1	2	1
Vegetation	• Site preparation (vegetation clearing).	Vegetation loss.	• Clearing will be minimized to the extent possible. Work areas will be flagged to help ensure it does not extend beyond the Project Location. • Progressive site reclamation will include replanting of vegetation where possible. All areas will be restored upon Project decommissioning.	2	1	3	1	1	2	1

Environmental Component	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Wetlands	• Site preparation (vegetation clearing, minor grading). • Access roads (water crossings). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Alteration to drainage regime along the edge of the wetland: • soil compaction • changes in moisture regime • fugitive dust • spills (e.g., fuel) • sedimentation • introduction of invasive species.	• Set back Project components and fencing 50 m from features. • Flag buffer area to prevent unauthorized access during construction. • Create and implement a sediment and erosion control plan to minimize sedimentation where Project activities are located within 50 m of a wetland or 120 m of a water body. • Create and implement a spills management procedure including the requirement that refueling, and fuel storage occur more than 50 m away from the natural feature. • Grading and civil design will consider existing drainage patterns to minimize impacts to wetland moisture regime.	2	2	2	3	2	2	2
Wildlife (Bat Maternity Roost Habitat)	• Site preparation (vegetation clearing, minor grading).	Loss of habitat function following construction of the Project is expected. Incidental take of individuals is possible if clearing takes place within the bat maternity roost window.	• Complete site clearing and grading outside of the active bat maternity period (April 15 to August 31). • Flag project extent to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	1	2	1	3	1	2
Wildlife (Grassland Birds)	• Site preparation (vegetation clearing, minor grading). • Access roads (water crossings). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Temporary loss of available foraging or nesting habitat. Incidental take of individuals is possible if clearing takes place within the bird nesting window.	• Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). • Flag project extent to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	2	2	1	3	2	2
Wildlife (Bald Eagle/Osprey Nesting)	• Site preparation (vegetation clearing, minor grading). • Access roads (water crossings). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Temporary loss of available foraging or nesting habitat.	• Complete site clearing and grading outside of the active nesting period (April 15 to August 31). • Flag project extent to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	1	1	1	2	1	2

Environmental Component	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Surface Water	• Site preparation (vegetation clearing, minor grading). • Access roads (water crossings). • Installation of Project.	Reduction in water quality or quantity.	• There will be no takings of surface water for construction use. • No project components will be installed within 30 m of a water body/watercourse. • Erosion and sediment controls will be installed. • Spill prevention measures will be implemented and a response plan prepared. • A stormwater management plan will be developed to maintain adequate site drainage. • All waste will be sorted into different streams (e.g., recyclable, non-hazardous and hazardous wastes). • Wastes will be securely stored on-site in designated areas and appropriately labelled containers, with secondary containment as required until disposal at a local facility in accordance with provincial regulations.	1	1	1	2	2	2	2
Groundwater	• Site preparation (vegetation clearing, minor grading). • Access roads (water crossings). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Reduction in water quality or quantity.	• There will be no groundwater takings for construction use. • Spill prevention measures will be implemented and a response plan prepared. • All waste will be sorted into different streams (e.g., recyclable, non-hazardous and hazardous wastes). • Wastes will be securely stored on-site in designated areas and appropriately labelled containers, with secondary containment as required until disposal at a local facility in accordance with provincial regulations.	1	1	1	2	3	2	2
Aquatic Habitat	• Site preparation (vegetation clearing, minor grading). • Access roads (water crossings). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Impacts to aquatic biota due to sedimentation or spills in water.	• Erosion and sediment controls will be installed. • Spill prevention measures will be implemented and a response plan prepared. • A stormwater management plan will be enacted on-site.	1	2	1	2	2	2	2
Air Quality, Odour and Dust	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Reduction in air quality.	• Road watering during dry periods. Other dust suppressants may be used if needed and in accordance with regulations. • Stabilize and cover stockpiles. • Reduce vehicle speeds on unpaved roads. • Restrict earth works during windy conditions. • Contractor to ensure all construction vehicles and equipment have properly functioning emission controls and that there is no excessive vehicle idling. • A notice will be sent to neighbouring residents advising of how they can report complaints related to dust.	1	2	1	3	1	2	1

Environmental Component	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Noise	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Noise impacting nearby sensitive receptors.	• Contractor to ensure all construction vehicles and equipment have properly functioning controls (e.g., mufflers) and that there is no excessive vehicle idling. • Construction will be limited to daytime hours. • A notice will be sent to neighbouring residents advising of how they can report complaints related to noise.	1	2	1	3	1	2	1
Visual Landscape	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Changes to local landscape/ viewscape.	• A “Green screen” of trees and shrubs will be installed in selected areas of the Project Location.	1	1	2	4	1	2	1
Land Use	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Loss of agriculture.	• Lands currently not used for agriculture will be added back to agricultural use during the life of the Project. • Site restoration will restore the ability to use the area under, beneath and immediately surrounding the solar PV panels for agriculture (e.g., sheep grazing).	1	1	2	4	1	2	1
Traffic and Local Roads	• Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Increases in local traffic/traffic disruptions/damage to local roads.	• A permanent access road for construction will be constructed to reduce pressure on local roads. • Speed limits, load restrictions, signage and flagging may also be used to reduce adverse impacts.	1	3	1	3	1	2	1
Public Safety	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Injury to public.	• The Project Location will be fenced and gated, with lights and signage posted to prevent unauthorized access during construction.	3	1	1	2	2	2	2
Protected Areas	N/A	None. There are no protected areas within 300 m of the Project Location.	• None required.							
Aggregate Resources	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	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.	• None required.							
Airports, Aerodromes, and Air Traffic	• Site preparation (vegetation clearing, minor grading). • Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	The closest airport/aerodrome is over 5 km away from the Project Location. No disruption to local air traffic is anticipated during construction/ installation.	• None required.							

6. Environmental Monitoring

Environmental monitoring will be undertaken throughout the construction phase to monitor the potential impacts and effectiveness of the proposed mitigation. Table 6-1 identifies specific performance objectives and monitoring methodologies and protocols, and also identifies contingency measures that may be implemented if monitoring shows that negative effects are occurring.

Table 6-1: Environmental Effects Monitoring Plan – Construction Phase

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Erosion and Sedimentation Resulting in Increased Turbidity in Site Runoff	A sediment and erosion control plan expected to include vegetation retention where possible. Vegetated setbacks of Project components to sensitive features. Erosion and sedimentation controls (e.g., silt fences, rock check dams, straw bales, erosion control blankets) near ditches, on steep slopes. 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 long-term 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 ESC measures to ensure they remain effective throughout construction.	Throughout Project Location.	During regular site inspection throughout construction.	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.
Adverse Effects to Surface Water, Groundwater, Wetlands, and Soil Quality Due to Accidental Spills	Standard mitigation to prevent spills and minimize magnitude of spills if they occur. For example, refueling at least 50 m from wetlands and water features.	No long-term environmental effects due to spills.	Visual monitoring where hazardous liquids may be stored, at transformer locations, where refueling may occur, and in parking areas. Monitoring of spill prevention measures, with spill reporting procedure in place.	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.	If monitoring identifies any missing spill trays, spill kits, improperly stored waste, etc., this will be addressed immediately. Spill contingency measures, such as an Emergency Response and Communications Plan, 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.

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Increases in Surface Water Runoff from Project Location and Changes in Drainage/ Hydrological Conditions	Maintain existing drainage patterns as much as possible. Stormwater management measures which may include enhanced vegetated swales, ditch flow controls and filter strips.	No impacts on water quantity/drainage patterns. Minimize changes to surface water runoff conditions to receiving waterbodies.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies). As well, visual assessment of structural stability of mitigation measures and identification of unintended impacts.	Throughout Project Location.	During regular site inspections.	Visual monitoring of erosion would identify potential areas of concern, confirm that stormwater management measures remain as designed, and allow identification of deficiencies.	Documented internally in monthly construction monitoring reports.	Stormwater management measures will be remediated as necessary to ensure that they are functioning as designed. With erosion remediated as necessary to ensure no long-term erosion issues.
Incidental Take of Wildlife	Speeds to be limited on Project Location and maintenance workforce to be made aware of potential for wildlife on the Project Location. Vegetation clearing will be conducted in fall/winter months outside of the nesting period for breeding birds and outside of the bat maternity roosting period (April 15 to August 31).	No occurrences of incidental take.	Visual monitoring of access roads and other site areas will be conducted by workers on foot, and occasions of incidental take reported as they are identified.	Throughout Project Location.	Daily throughout construction.	Incidental take will be reported by workers to personnel responsible for environmental protection if incidents occur.	Any incidental takes on wildlife will be documented internally and reported within monthly construction monitoring reports. Unless the incidental takes of species is a species of conservation concern in which case reporting will be immediate to the MECP/Environment Canada.	If incidental take of species of conservation concern are recorded, work will be ceased until such time as a trained biologist can state that no other individuals of the species is present in the work area. Injured wildlife, specifically reptiles, will be taken to a wildlife rehabilitation center.
Wildlife (Loss of Grassland Bird Habitat)	Phasing Project to prevent impacts to SoCC (i.e., clearing outside of the active nesting period).	Minimize impacts to grassland nesting birds.	Earthworks activities in grassland habitats to be phased prior to any nesting activity becoming established. This will be confirmed via biologist where necessary. Vegetation on-site may be maintained to a level to minimize grassland bird habitation during the construction period.	Grassland habitats.	Ahead of earthworks starting in new locations.	Only tall grass areas are likely to support any grassland bird species including all SoCC observed within the Project area.	Documented internally and reported within monthly construction monitoring reports.	Nest sweep of areas immediately ahead of construction. Delaying construction to outside of nesting period.
Wildlife (Disturbance of Bald Eagle Nesting Activity)	Preclearing survey for stick nests.	Identify potential nesting features ahead of tree clearing.	Visual monitoring.	Wetland 1 and woodlands.	Ahead of clearing activities.	Nesting has potential to occur in super canopy trees near wetlands.	Documented internally and reported within monthly construction monitoring reports.	Phasing activities outside of when nests may be active or sensitive timeframes.
Dust Generation and Off-Site Transport	Minimizing vehicle speeds on unpaved roads. Stabilizing stockpiles. Spraying unpaved roads with water during dry periods.	Minimize fugitive dust from the construction site.	Visual monitoring of visible dust plumes during construction. Additionally, in winter, visual monitoring of snowbanks for dustfall. Complaint system in place in case neighbours have an issue.	Throughout construction site.	Periodically during all construction activities.	Visual monitoring would identify areas of concern, and complaint system would further indicate the extent and magnitude of the problem.	Documented internally in construction monitoring reports.	More frequent watering of roads may be implemented, or use of a chemical dust suppressant may be considered if watering is not sufficient.

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Noise Levels Disturbing Nearby Noise Receptors	Construction and installation activities typically limited to daylight hours. Ensure mufflers are in good working order on vehicles/machinery. Limit vehicle idling.	To minimize excessive noise emissions at nearby noise receptors.	Ongoing dialogue with adjacent noise receptors and follow-up response to noise complaints.	Throughout construction site with emphasis at the closest sensitive noise receptors.	Continually throughout construction.	Complaint system would indicate the extent and magnitude of the problem.	Documented internally in construction monitoring reports.	If Project components are not meeting performance objectives with respect to noise emissions, the Proponent will work with affected noise receptors to reduce disturbance to the extent possible.
Personal Injury to Public if Trespassing On-Site	Fencing, gates, lighting, signage and/or cameras to be used to limit unauthorized access.	Zero project-related injuries.	Site security monitoring.	Throughout the Project Location and facility perimeter.	Continually throughout construction.	Cameras will show any unauthorized access.	Incidents of trespassing or vandalism will be reported to local authorities.	Additional security measures will be implemented as required.
Increase in Traffic and Impacts to Local Roads	Use highway as main access road during construction to the extent possible.	Minimal disturbance to road condition and to public use of the roads.	Visual monitoring of road conditions. Public complaint system in place.	Along any local access roads that may be used for construction.	Periodically throughout construction.	Visual monitoring can detect issues like potholes or washouts. Complaint system will also indicate if there is a problem.	Documented internally in construction monitoring reports.	Construction traffic could be rescheduled or rerouted if necessary.

Appendix A
Site Plan

DWG. No. H375916-0000-220-271-0001

TRUE NORTH

MATHER RD

400m BUFFER TO BALD EAGLE STICK NEST

10m SETBACK OF EXISTING OVERHANGING UTILITY LINE

120m BUFFER TO BALD EAGLE STICK NEST

BALD EAGLE STICK NEST

BEDROCK OUTCROP

PAD FOR INVERTER (TYP.)

MANAGEMENT CAMP & OR LAYDOWN AREA (16317sq.m)

EXISTING DRAINAGE AREA

INVERTER (TYP.)

TP25-06

TRANS-CANADA HWY

3.55 (TYP.) OFFSET BETWEEN THE TRACKERS

EX. GUY WIRE (TYP.)

OH

TP25-07

TP25-03

MATHER I CREEK

ACCESS GATE 3

ACCESS GATE 2

PV ARRAY 2
(AREA:175.73 ACRES)
1227 FULL-LENGTH 1P TRACKERS
611 HALF-LENGTH 1P TRACKERS
TOTAL PANEL COUNT : 79690

TP25-05

BH25-01

TP25-08

6m (TYP.)

HV SUBSTATION

MW25-02

TP25-04

SUSTATION ACCESS GATE

O/H LINE TO POI

10m RADIUS FROM CENTER OF PRELIMINARY RECEPTOR LOCATION

HV POINT OF INTERCONNECTION (POI)
E434146.78, N5397310.68

TP25-01

TP25-02

PV ARRAY 1
(AREA:104.81 ACRES)
922 FULL-LENGTH 1P TRACKERS
117 HALF-LENGTH 1P TRACKERS
TOTAL PANEL COUNT : 50986

TP25-09

ACCESS GATE 1

TP25-10

R. WILSON ROAD

SITE PROPERTY LINE

ZOI OF INVERTER/ TRANSFORMER(189m)

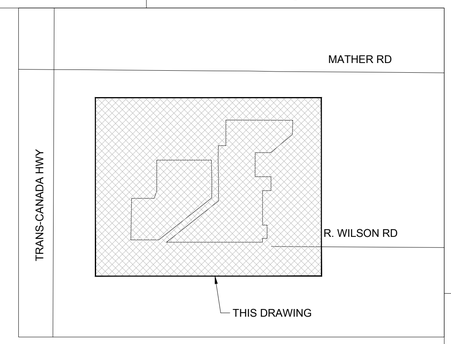
EXISTING BARBED WIRE FENCE. SEE NOTE 4

20M FIRE BREAK

PROPOSED CHAINLINK FENCELINE (TYP.)

EXISTING OVERHANGING UTILITY LINE

ZOI OF SUBSTATION (425m)



KEY PLAN
(N.T.S.)

TRACKER ARRANGEMENT	RAINY RIVER	
	NO OF TRACKER	
	FULL LENGTH	HALF LENGTH
TRACKER (1P)	2149	728
PANEL COUNT	111748	18928
TOTAL PANELS	130676	
POWER RATING OF PANEL	625W	
NO OF INVERTERS	14	
DC CAPACITY	81.67 MW	
AC CAPACITY	60.00 MW	
PITCH	6m (TYP.)	

NOTES:

1. ALL DIMENSIONS SHOWN HERE ARE IN METRES UNLESS MENTIONED OTHERWISE.
2. COORDINATE SYSTEM SHOWN HERE IS NAD83 (CSRS) 2010 UTM ZONE 15N with CGVD2013 AS VERTICAL DATUM.
3. TOPOGRAPHIC DATA SHOWN IS BASED ON THE SURVEY DATA FILE "260201-ST-Carbon Free Solar - Mather Road OG+Property.dwg" PROVIDED BY 'LANDMARK SURVEY AND TESTING' ON FEBRUARY 09, 2026 (REVISION NUMBER 2/9/26-001) AND THE DATA FILE "1m LIDAR CONTOURS" DOWNLOADED FROM GEOHUB ONTARIO.
4. EXISTING BARBED WIRE FENCE TO BE REMOVED WHERE IT CONFLICTS WITH PROPOSED FEATURES.

LEGEND:

- PROPOSED FULL-LENGTH 1P TRACKER
- PROPOSED HALF-LENGTH 1P TRACKER
- SITE PROPERTY LINE
- PROPOSED CHAINLINK FENCE
- 5m BUFFER OF FENCELINE
- WETLAND
- 30m BUFFER OF WETLAND
- WATER BODY
- 120m BUFFER OF WATER BODY
- PROPOSED MV-2
- PROPOSED ATV TRAIL
- EXISTING BEDROCK OUTCROP AREA
- ZOI SUBSTATION (425m)
- ZOI OF INVERTER/ TRANSFORMER(189m)
- 10m RADIUS FROM CENTER OF PRELIMINARY RECEPTOR LOCATION
- PROPOSED INVERTER PAD
- PROPOSED HV SUBSTATION PAD
- OH — EXISTING OVERHEAD UTILITY LINE
- EXISTING BRUSH ROCK PILE
- EXISTING BARBED WIRE FENCE
- EXISTING DRAINAGE AREA
- TP25-01 — TEST PIT
- BH25-01 — BOREHOLE
- MW25-01 — MONITORING WELL
- AREAS WITH SLOPES > 20%
- PROPOSED ACCESS GATE
- O/H LINE TO POI

OVERALL SITE PLAN

SCALE 1:5,000

0 50 100 150 200 250
1:5,000 SCALE IN METRES

NOT FOR CONSTRUCTION

HATCH

CarbonFree TECHNOLOGY
CARBONFREE TECHNOLOGY INC.
1 ST. CLAIR AVE. WEST, #501
TORONTO, ON M4T 1T5

No.	DESCRIPTION	BY	CHK'D	DATE
-	-			
0	ISSUED FOR PERMITTING	R.P.	J.M.	2026/03/06

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON	R. POKHAREL	NR	2026/03/06
DESIGNER	J. SUN	NR	2026/03/06
CHECKER	J. MOHAMMAD		2026/03/06
DESIGN COORD.	M. BASIQ		2026/03/06
RESP. ENG.	M. BASIQ		2026/03/06
LEAD DISC. ENG.	M. BASIQ		2026/03/06
ENG. MANAGER	J. MOHAMMAD		2026/03/06
PROJ. MANAGER	S. THOMPSON		2026/03/06
CLIENT NAME			

DRAWING APPROVAL STATUS: Issued for Permitting

CARBONFREE RAINY RIVER Ltd.
RAINY RIVER 71 SOLAR PROJECT

GENERAL SITE WIDE
CIVIL
OVERALL SITE PLAN

DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	NA

REG. PROFESSIONAL

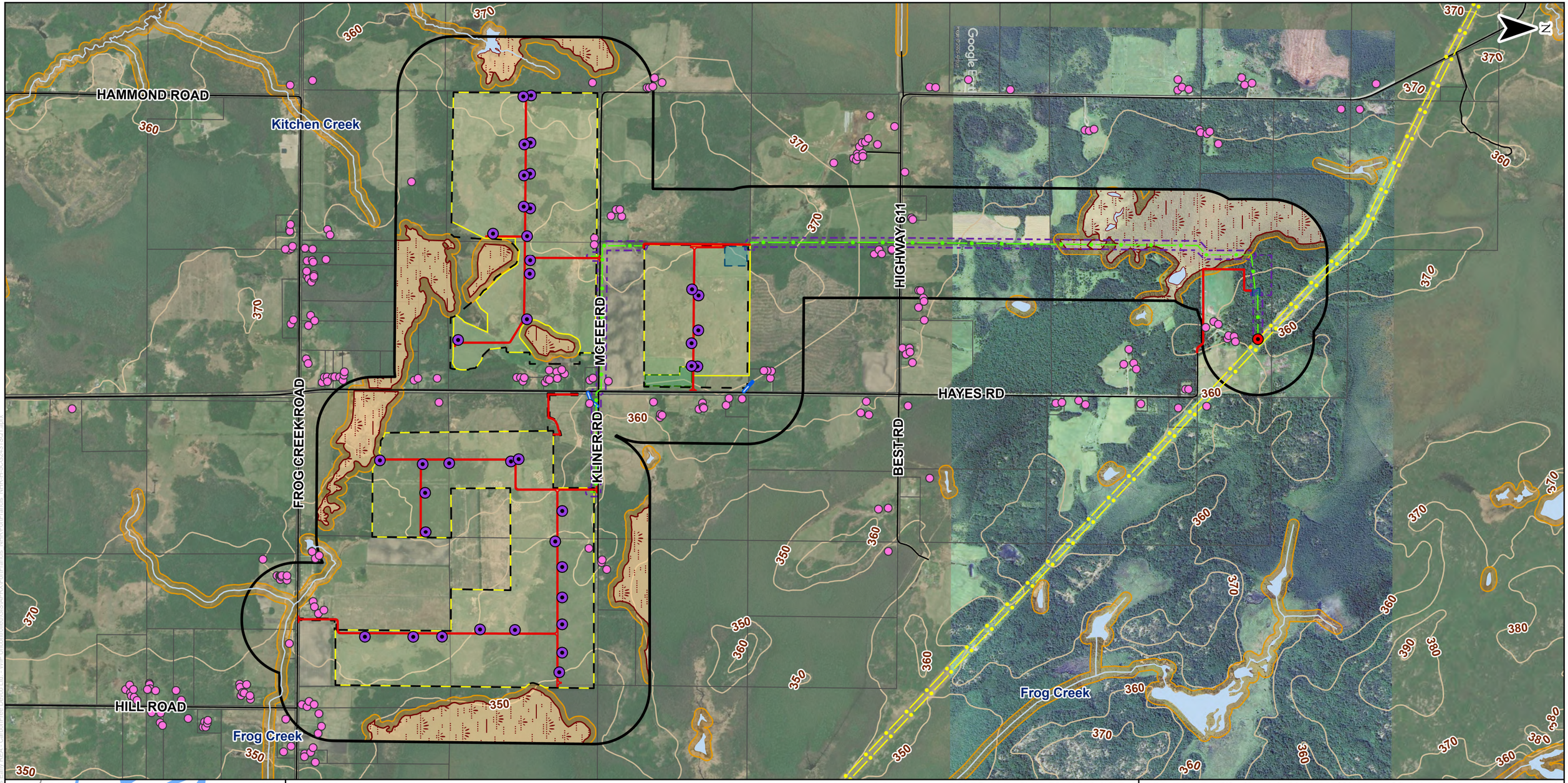
REVISIONS

SCALE 1:5,000

DWG. No. H375916-0000-220-271-0001

REV 0

SHEET SIZE: A1



LEGEND

- Noise Receptor
- Inverter
- Point of Connection
- Access Road
- Contour
- Road
- Proposed Transmission Line
- Transmission Line
- Unnamed Watercourse
- Watercourse
- Transmission Infrastructure
- Project Location
- Study Area (300m Buffer)
- Property Boundary
- Offices/Laydown Area
- Solar Array
- Substation/Switching Station
- Waterbody
- Wetland
- Riparian Buffer

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 15N
3. GoogleEarth 2025 Imagery added for clarity due to cloud cover.

0 250 500 1,000 m

1:20,000

PROJECT:	CarbonFree Fort Frances Project - Design and Operations Report
FIGURE TITLE:	Site Layout
CLIENT:	CarbonFree Fort Frances LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	C. SEHL	A1	1
DATE: 03/03/26	**PAGE:** 1		

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