Golden Leaf Agrivoltaics Inc.

Design and Operations Report

Golden Leaf Agrivoltaics Project, Drummond-North Elmsley, Ontario, Canada

Project #: 26-3072

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Submitted by
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1.0 Introduction

Golden Leaf Agrivoltaics Inc. (Golden Leaf Agrivoltaics) is proposing the Golden Agrivoltaics Project (the Project), a proposed Class 3 ground-mounted solar facility with a maximum nameplate capacity of up to 13.2 Megawatts alternating current (MWac). The Project, which consists of solar panels and associated equipment and infrastructure located on private land in Township of Drummond/North Elmsley, Ontario (the Project Location) (**Figure 1**). Figures are provided in appended to this report.

The Project is being designed using agrivoltaics, which is the practice of combining agriculture and solar energy production on the same land. As part of this approach, sheep grazing may be implemented as a vegetation management strategy to control plant growth beneath and between the solar panels, providing both sustainable land management and agricultural benefits.

Golden Leaf Agrivoltaics was awarded a contract by the Independent Electricity System Operator (IESO) under the Long Term 2 Energy – Window 1 (LT2 (e-1)) process in April 2026. The Project is subject to several approvals including an *Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA)* under Part V.0.1 of the Ontario *Environmental Protection Act*.

As outlined in Chapter 6 the Technical Guide to Renewable Energy Approvals (2016), the principal content of the Design and Operations Report (DOR) is defined in Table 1 of *O. Reg. 359/09* and includes the potential for environmental effects as they relate to permanent solar facility components and their operation, within 300 m of the Project Location. The DOR is the principal document where the details of a renewable energy generation facility are presented. It builds on the Project Description Report (PDR) by defining:

- The exact site plan;
- The design of the facility and the equipment to be used;
- How the facility will be operated;
- How environmental effects will be monitored and mitigated; and
- How emergencies and communications will be managed.

The DOR report provides a detailed site plan, facility design plan, facility operations plan and Environmental Effects Monitoring Plan ("EEMP") (**Appendix A**). It also contains the framework to develop an Emergency Response and Communications Plans (ERCP) (see **Section 9**) that cover the life of the proposed Project from construction through to and including decommissioning. A summary of the requirements under *O. Reg 359/09* and where they are addressed in this report is included in **Table 1.**

Table 1: Checklist for Requirements under O. Reg. 359/09 – Design and Operations Report

Required Documentation	Location in Report
Site Plan Requirements	
One or more maps or diagrams of: all buildings, structures, roads, utility corridors, rights-of-way and easements required in respect of the renewable energy generation facility and situated within 300 metres of the facility,	**Figures 2-4**
any ground water and surface water supplies used at the facility,	**Section 5.3.10**, *Water Supply* **Section 6.1.2**, *Water Taking*
any things from which contaminants are discharged into the air,	N/A – the facility will not require components from which contaminants are discharged to air.
any works for the collection, transmission, treatment and disposal of sewage,	**Section 5.3.12**, *Sewage Disposal*
any areas where waste, biomass, source separated organics and farm material are stored, handled, processed or disposed of,	N/A - the facility will not require components from which waste, biomass, source separated organics and farm material are stored, handled, processed or disposed of.
the Project Location in relation to any of the following within 125 metres: the portion of the Oak Ridges Moraine Conservation Plan Area that is subject to the Oak Ridges Moraine Conservation Plan, the area of the Niagara Escarpment Plan, the Protected Countryside, the Lake Simcoe watershed, and	N/A as shown in **Figures 2-4**
any noise receptors or odour receptors that may be negatively affected by the use or operation of the facility.	**Figures 2-3**
a description of each item diagrammed under subparagraph i, and	**Section 4**, *Site Plans* **Section 5.1**, *Existing Features*

Required Documentation	Location in Report
one or more maps or diagrams of land contours, surface water drainage and any of the following, if they have been identified in complying with this Regulation: properties described in Column 1 of the Table to Section 19, heritage resources, archaeological resources, water bodies, significant or provincially significant natural features and any other natural features identified in the Protected Countryside or in the portion of the Oak Ridges Moraine Conservation Plan Area that is subject to the Oak Ridges Moraine Plan.	**Figures 2-4**
Conceptual Plan Requirements Related to Design	
If the facility includes a transformer substation, the works, facilities and equipment for secondary spill containment.	**Section 6.1**, *Daily Operations, Staffing and Training* **Section 8**, *Emergency Response and Communications Plan* **Section 7**, *Environmental Effects Monitoring Plan* ***Appendix A*** *- EEMP*
Conceptual Plan Requirements Related to Operations	
If the facility includes a transformer substation, a description of the processes in place to prevent spills,	**Section 6.1**, *Daily Operations, Staffing and Training* **Section 8**, *Emergency Response and Communications Plan* **Section 7**, *Environmental Effects Monitoring Plan* ***Appendix A*** *- EEMP*

Required Documentation	Location in Report
a description of the processes to prevent, eliminate or ameliorate any adverse effects in the event of a spill, and	**Section 6.1**, *Daily Operations, Staffing and Training* **Section 8**, *Emergency Response and Communications Plan* **Section 7**, *Environmental Effects Monitoring Plan* ***Appendix A*** *- EEMP*
a description of the processes to restore the natural environment in the event of a spill.	**Section 6.1**, *Daily Operations, Staffing and Training* **Section 8**, Emergency Response and Communications Plan ***Appendix A*** – EEMP
Environmental Effects Monitoring Plan Requirements	
Performance objectives in respect of negative environmental effects.	**Section 7**, *Environmental Effects Monitoring Plan* ***Appendix A*** *- EEMP*
Mitigation measures to assist in achieving the performance objectives mentioned in subparagraph i.	**Section 7**, *Environmental Effects Monitoring Plan* ***Appendix A*** *- EEMP*
A program for monitoring negative environmental effects for the duration of the time that the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.	**Section 7**, *Environmental Effects Monitoring Plan* ***Appendix A*** *- EEMP*
Response Plan Requirements	
Measures to provide information regarding the activities occurring at the Project Location, including emergencies.	**Section 8**, *Emergency Response and Communications Plan*

Required Documentation	Location in Report
Means by which persons responsible for engaging in the Project may be contacted.	**Section 8.3**, *Non-Emergency Communications Plan*
Means by which correspondence directed to the persons responsible for engaging in the Project will be recorded and addressed.	**Section 8.3**, *Non-Emergency Communications Plan*
General	
If it is determined that a Project Location is not on a property described in Column 1 of the Table to section 19 of O. Reg. 359/09, provide a summary of the matters addressed in making the determination.	**Section 4**, *Site Plans*
If section 20 of O. Reg. 359/09 applies in respect of the Project 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.	**Section 4**, *Site Plans*
If subsection 21 (3) or 23 (2) of O. Reg. 359/09 applies, provide a summary of the matters addressed in making the determination, under subsection 21 (3) or clause 23 (2) (a), as the case may be, including a copy of the document completed under the applicable provision, and	**Section 4**, *Site Plans*
(b) under clause 23 (3) (b), if applicable.	**Section 4**, *Site Plans*

2.0 The Proponent

Golden Leaf Agrivoltaics Inc. (Golden Leaf Agrivoltaics) is the proponent partnership between Compass Greenfield Development Inc. (Compass) and Algonquins of Pikwakanagan First Nation (AOPFN) responsible for the development and permitting of the Golden Leaf Agrivoltaics Project (the Project) renewable energy facility. Compass is a renewable and clean energy developer, investor and asset manager working across Canada. Compass advances greenfield development opportunities for solar and battery energy storage (Compass Greenfield, 2026).

Compass is coordinating and managing the approvals process for the Project. The primary contact at Compass/ Golden Leaf Agrivoltaics is as follows:

Full Name of Company:	*Golden Leaf Agrivoltaics Inc. (Compass Greenfield Development Inc.)*
Prime Contact:	*Bhavin Mistry, Senior Manager, Development*
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Telephone:	*(416) 716-0898*
Email:	*bhavin@compassgreenfield.ca*
Project Website:	*https://goldenleafagrivoltaics.ca/*

Dillon Consulting Limited (Dillon) has been retained by Golden Leaf Agrivoltaics to prepare the REA application for the Project. The primary contact at Dillon is as follows:

Full Name of Company:	*Dillon Consulting Limited*
Prime Contact:	*David (Dave) Restivo, Project Manager*
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3.0 Project Location

The proposed Class 3 solar agrivoltaics facility is to be located within the Township of Drummond/ North Elmsley, Ontario. The Project Location is generally bounded by Drummond Concession 1 to the north and Churchill Road to the east. The Project site will be contained within three privately-owned land parcels, Lot 17, Concession 10 (Property Identification Number (PIN) 05232-0010) and Lot 16, Concession 10 (PINs 05232-0237 and 05232-0238). These lands will continue to be privately owned and leased by Golden Leaf Agrivoltaics, with the approximate centroid at the following geographic coordinates:

- Latitude: 44.919350 N
- Longitude: -76.184856 W

The Project Location is defined in O.Reg. 359/09, which identifies the location of all project components. The term "Project Location" is defined in O.Reg. 359/09 to be "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". Project components, including solar panels and electrical facilities such as inverters, transformers, substations and electrical collector lines; as well as Project access roads will be located on private land.

4.0 Site Plans

The Project site plans detail the location of solar facility components, natural features, noise receptors, land uses, setbacks and other features in accordance with Table 1 of *Ontario Regulation 359/09*. The following (and their associated infrastructure) are *not* shown in the site plans because they will not be collected, transmitted, treated, stored, handled, processed or disposed of in the construction, operation or decommissioning of the solar facility: groundwater, drinking water, sewage, biomass or source separated organics. The solar facility will not discharge contaminants into the air during its operation.

Figure 2 identifies the Project Location boundary and lands within 300 m. It provides a larger context for the solar facility components and natural features that will be shown in more detail in **Figures 3** and **4**. **Figure 2** identifies applicable buildings, structures, roads, utility corridors, rights-of-way, municipal land use designations, on-ground uses, property parcels, lots and concessions, and railways.

Figure 3 provides the location of proposed solar facility components. The components include PV panels (and associated racking and supports), inverter stations, transformers (including the project 44kV step-up transformer substation), access roads, permanent fences and gated entrances. The conceptual solar facility layout and detailed information regarding components are provided in **Section 6**. The temporary laydown areas will be located within the Project Location boundary. **Figure 3** shows the Project noise-emitting components (i.e., inverter stations and transformers). More information is provided in **Section 5.1.**

Figure 4 identifies applicable natural features and water bodies within the Project Location and surrounding 300 m. Distances from each applicable natural feature to the Project Location are provided. Setbacks apply only to those natural features evaluated as 'significant', 'treated as (assumed to be) significant' or 'provincially significant' as outlined in the *Natural Heritage Assessment* (NHA) *Evaluation of Significance Report*. Details regarding applicable water bodies are provided in the *Water Assessment Report*.

4.1 Transformers and Noise Receptors

The Project is designed to operate 365 days per year. However, the PV panels are designed to generate electricity during daylight hours. The operating characteristics of the inverters and transformers are dependent on the amount of electricity generated by the PV panels, which is at a maximum when the sunlight is most intense. To comply with regulations, the *Noise Study Report* used a conservative night-time sound level limit of 40 dBA to model the worst-case impacts at receptors.

4.2 Cultural Heritage Resources

Matrix Heritage was retained by the Proponent to complete a Cultural Heritage Assessment Report as required under *O. Reg. 359/09* for the proposed Golden Leaf Agrivoltaics Project.

The assessment included background research, consultation with appropriate agencies and Indigenous communities, and a site visit to survey potential cultural heritage resources within the study area. The assessment identified one potential built heritage resource (the stone house at 1161 Drummond Concession 1, has been identified in the study area but outside of the project area) and zero cultural heritage landscapes.

Following evaluation under *Ontario Regulation 9/06*, it was determined that the property does not possess cultural heritage value or interest. The study did not identify any protected properties within the study area. This was determined by investigating several municipal, provincial, and federal heritage registers and databases to determine the presence or absence of potential protected properties identified in Section 19 of *O. Reg. 359/09*. Because no heritage resources of value or protected properties were confirmed, no direct or indirect adverse impacts are anticipated from the project, no alternatives are recommended in relation to cultural heritage. However, It is recommended that the Township of Drummond / North Elmsley consider the designation of BHR-1 under Part IV of the Ontario Heritage Act for its design/physical value, and contextual value.

The Cultural Heritage Assessment Report is currently under review with the Ministry of Citizenship and Multiculturalism.

4.3 Archaeological Resources

Matrix Heritage was retained by the Proponent to complete Stage 1 and Stage 2 Archaeological Assessments as required under *O. Reg. 359/09*.

The Stage 1 assessment included a review of the MCM archaeological site databases, a review of relevant environmental, historical, and archaeological literature, as well as primary historical research including: historical maps, land registry, and census records.

The Stage 1 background assessment concluded that, based on criteria outlined in the Standards and Guidelines for Consultant Archaeologists (Section 1.3, (2011)), the study area has both pre-contact Indigenous as well as historical Euro-Canadian archaeological potential.

The Stage 2 AA was undertaken from June-September 2026. A total of thirteen (13) artifacts were collected from two positive test pits and subsequent intensification. The initial positive test pits were identified over 40 metres apart in the central western portion of the study area. The assemblage consists of historic 19th to 20th century domestic material. Based on the results of this investigation it is recommended that no further archaeological study is required for the study area.

4.4 Land Uses and Land Use Plans

The proposed solar facility will be located within lands currently zoned by the Township of Drummond/North Elmsley Official Plan as a 'Rural' land. The Official Plan identifies Natural Corridors and Linkages to the northeast and west of the proposed project, as well as a wetland to the north of the side. Significant woodlands are present to the south of the project site.

The proposed facility is physically low-profile and would be non-obtrusive to the surrounding community. Low profile vegetation will be grown beneath and between the panel rows to stabilize soils. As part of the Project's agrivoltaic design, sheep grazing may be used to manage vegetation beneath and between the solar panels, supporting both land management and agricultural use. The Project Location could be returned to its pre-construction condition or future anticipated land use after decommissioning. **Figure 2** depicts the current land uses within the Project Location and surrounding 120 m as identified by the Ecological Land Classification conducted as part of the Natural Heritage Assessment (NHA).

Mitigation measures will be undertaken to minimize impacts to surrounding land uses (see **Appendix A**). The Project Location will be returned to its original condition or similar after decommissioning.

A search and analysis of available records identified that the Project is not located in areas subject to Land Use Plans; specifically, the Project does not lie within the Niagara Escarpment, Lake Simcoe Watershed, Oak Ridges Moraine or the Greenbelt Provincial Plan areas.

4.5 Natural Heritage and Water Bodies

The Project has been subject to several field investigations, and a thorough review of development constraints was undertaken prior to delineating the Project Location. Based on the field studies conducted, the Project Location was refined to minimize, and, where possible, avoid impacts to significant natural heritage features. The layout of the Project has been developed to minimize its footprint and predominantly avoid significant natural features.

4.5.1 Natural Heritage Features

Following completion of the NHA records review, site investigation, and evaluation of significance, the following natural features were evaluated to be significant or treated as significant and located either within the Project Location or within 50 m of the Project Location:

- Two woodland units were identified within 50 m of the Project Location (Woodland A within the 50 m setback is not significant; Woodland B within the Project Location and 50 m setback is identified as significant by the Township of Drummond/North Elmsley Official Plan (2025).
- Open Country Bird Breeding Habitat (Habitat of Species of Conservation Concern; located within the Project Location and 50 m setback; significant).
- Species of Conservation Concern (Species at Risk) Bats Habitat (Special Concern and Rare Wildlife Species; located within the Project Location and 50 m setback; requires evaluation).

For the purposes of the Project, features identified as significant or treated as significant will be subjected to the mitigation measures outlined in the *NHA Environmental Impact Study Report* to minimize or avoid negative environmental effects. Features evaluated as not significant within the Project Location or surrounding 50 m do not require further study or mitigation.

The layout of the project will allow for the natural features evaluated to be significant (or treated as significant) to be maintained in the local landscape after the Project is constructed and operational. For detailed information on natural heritage features within and surrounding the Project Location, please refer to the NHA.

4.5.2 Water Bodies

A *Water Assessment Report* was completed to identify water bodies within the Project Location and surrounding 120 m (and 300 m for Lake Trout Lakes).

Under *Ontario Regulation 359/09,* the definition of a water body includes lakes, permanent and intermittent streams and seepage areas, but does not include grassed waterways, temporary channels for surface drainage, rock chutes and spillways, roadside ditches that do not contain a permanent or

intermittent stream, temporary ponded areas that are normally farmed, dugout ponds or artificial bodies of water that are intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and outdoor confinement areas.

As outlined in Sections 30 and 31 of *Ontario Regulation 359/09*, a records review and site investigation were undertaken to fulfill the requirements of the *Water Assessment Report*. The assessment consisted of a comprehensive records review followed by a field site investigation to verify the presence, boundaries, and characteristics of potential water bodies. The records review identified one intermittent stream within the 120 m designated setback zone. The site investigation, conducted in June 2026, confirmed one potential intermittent stream identified during the records review was a grassed waterway. Two dugout ponds were observed but do not meet the definition of a Renewable Energy Approval (REA) water body and are excluded from further assessment. Since no water bodies regulated under O. Reg. 359/09 were confirmed within these limits, the project complies with Section 30(2), and a separate Water Body Report under Section 39 or Section 40 is not required.

Based on the results of the site investigation, there are no applicable REA water bodies within the Project Location or within 120 m of the Project Location. As such, a Water Body Report, as outlined under REA Sections 39 and 40 is not required for this Project.

5.0 Facility Design Plan

The following subsections describe the solar facility components that are planned to be in place for the life of the Project. The currently proposed locations of the Project components are shown in **Figure 3**. Temporary features related to construction and decommissioning activities are described in the *Construction Plan Report* and *Decommissioning Plan Report*. They are also shown in **Figure 3** for context.

The Project layout may be subject to adjustments during the detailed design phase. Any adjustments made during detailed design phase will remain within the Project Location boundary.

5.1 Existing Features

The solar facility will be connected to the existing distribution circuit. The facility will be accessed from one main access road, which will be off Drummond Concession 1 Road located north of the property.

5.2 Electricity Generation Process

PV panels will be the technology used to convert solar energy into electricity. With exposure to sunlight, the solar modules convert solar radiation into direct current (DC) electricity through a PV process. The PV process occurs when the energy from the sunlight is transferred to semiconductors contained in the modules. DC electricity generated from the PV panels will be collected and converted into AC electricity by inverters, which will be contained in multiple inverter stations. An inverter station is comprised of multiple components, including inverters and can include a medium-voltage (MV) transformer. The AC energy output from the inverter stations will be transmitted via underground/overhead cables and connected to a 44kV project transformer substation with connection to the existing local distribution grid.

5.3 Solar Facility Components

The following sub-sections provide detail on the individual components that will be used over the lifetime of the Project.

5.3.1 PV Panels and Mounting System

Golden Leaf Solar will consist of approximately 21,195 solar photovoltaic (PV) modules. These are contained in a series of single-axis tracker racking systems which are attached to trackable ground-mounted racking structures organized into solar arrays. It is anticipated that LONGi Hi-MO9 LR8-66HYD 635-670M PV panels, or equivalent, may be used.

The final number and model of PV panels may be subject to change until a final decision on the module supplier is made and detailed design has been completed. Should a higher output (Watt) panel be chosen, it may result in a reduction in the overall number of panels needed and a corresponding reduction in racking system components. It will not result in additional impacts such as an increase Project Location or increased noise output. The PV panels will be installed on a single axis tracking system. A single axis tracking system is designed to move throughout the day to capture solar irradiance as the sun moves from east to west.

The PV panels will be aligned in rows to be spaced according to design criteria and will be mounted on a racking system. The type of anchoring system and/or foundation supports for the racking structures will be determined as part of detailed design prior to construction, but it is anticipated that the racks will be supported by screw piles into the ground.

The number of racks required may be subject to change until a final decision on the selection of the racking supplier is made and detailed design has been completed. Each of the racking structures will be assembled on-site. Racking foundation design will vary depending upon the depth of overburden (soil above bedrock). Based on preliminary geotechnical investigation, and a depth of overburden ranging from 0.2 m to 0.8 m above bedrock, pre-drilled ground screws are expected to be used for the support of the racking.

5.3.2 Inverter Stations and Equipment

DC electricity generated from the panels will be transmitted through underground wires (or an appropriate above-ground alternative based on sub-surface conditions of the site) connected to combiner boxes where several incoming wires from the racks will be combined into a single outgoing cable. From the combiner box, the DC current will be transmitted below ground to one or more inverter units (enclosed) which will convert the DC electricity into AC electricity suitable for distribution to the local grid at M21 Point of Interconnection (POI) at Drummond Concession 1. Inverter units will be spread across the Project Location. The inverters will be equipped with noise mitigation measures to reduce noise emissions, as needed.

There will be both intermediate transformers located in proximity to the inverters as well as a primary or main step-up transformer that will transform the power up grid voltage (44 kV) suitable for the distribution to the local grid. Appropriate grounding systems will be installed for the Project, where necessary. The type of support foundation for the inverter units, intermediate transformers and the protection equipment will depend on the results of geotechnical studies and the supplier selected, thus the construction methods may vary. The primary step-up transformer will be a double-walled transformer or have secondary containment.

5.3.3 Electrical Collector System

The AC electrical energy output from the inverter stations will be collected via collection lines which will be either installed underground or above ground on poles. Poles are anticipated to be between 40 and 50 feet tall and will be equipped with mounting structures and electrical insulators and ancillary equipment such as grounding wire, communications cables, and others as necessary. Above ground poles will be supported by anchored guy wires where necessary.

Buried collection lines will require above ground junction boxes for cable splices. It is anticipated that the lines will generally follow the internal access roads, public road networks, or they will be directionally drilled under or span over existing water bodies. The exact locations of lines for the electrical collector system will be determined during detailed design; however, they will all be within the Project Location boundary as shown in **Figure 2**.

5.3.4 Connection Line

The poles for the connection line will be upgraded, works for which (including moving existing lines) is being undertaken and managed by Hydro One. The project will install cables specific to the solar project.

5.3.5 Access Roads

One main access road will be needed for the construction equipment and related vehicles to enter the Project Location. The access location will be off Drummond Concession 1 Road located north of the property. Internal access roads will also be developed for construction purposes and to provide long-term access for maintenance during operation. The roads will be approximately 4-5 metres wide and will be granular. Geotextile fabric may be used where necessary to improve structural integrity and preserve the granular. If necessary, culverts will be installed beneath the access roads at locations where conveyance of surface water drainage is required.

5.3.6 Fencing, Lighting and Security

For the safety of the public and wildlife and for security purposes, a perimeter fence will be installed. This will be a chain link fence of standard height (approximately 1.8 m) with a 3-strand barbed wire at the top, that will be installed around the entire Project Location. The perimeter fence is a requirement of the Electrical Safety Authority ("ESA") and will be built and posted with signs to required specifications, in accordance with the Canadian Electrical Code. Gates will be installed where the fence intersects access roads.

The perimeter fencing is to have contact with the ground surface to prevent entry of wildlife. Where it is not feasible for the fence to contact the ground, other measures will be installed to prevent wildlife access under the fence. During the construction phase, in areas appropriate to protect hatchling turtles, the spacing in the chain link should be of sufficient mesh size to prevent entry from the ground surface to a height of approximately 0.5 m. Note, turtle nesting areas were not identified in proximity to the site. Accordingly, this mitigation measure will only be implemented if necessitated during construction based on site observations.

For security and maintenance purposes, lights may be installed near the entrance of the facility, and task-specific lights will be provided as necessary. These will be appropriately shielded or directed and may also be motion-sensored to address potential negative effects, as necessary.

5.3.7 Communication Tower

A communications tower will be installed and operated by Hydro One or the Project Team, for emergency disconnect purposes only.

5.3.8 Water Crossings

It is not anticipated that maintenance of water crossings will be required. Water bodies have been mapped in relation to the Project Location. It is not anticipated that the design of the Project will require installation of new water crossings for access roads. Appropriate buffers have been applied to water bodies found within 300 m of the Project Location. For more information, please refer to the *Water Assessment Report* and *Water Body Report*.

5.3.9 Stormwater Management Installations

Stormwater management (SWM) measures such as swales, drainage ditches, rock check dams, etc. will be installed as needed to avoid impact to off-site drainage conditions. A SWM Plan will be developed prior to construction to identify the location and type of installations required.

5.3.10 Water Supply

Water is not required for the generation of electricity at the solar facility. Water would either be taken from a local well or be trucked in from a municipal supply using a local water hauler. It is not anticipated that an above ground or subsurface water tank will be required.

5.3.11 Groundwater

Based on a review of the Mississippi-Rideau Source Protection Assessment Report, it was determined that the Township of Drummond/North Elmsley, Ontario, which contains the Project Location, uses groundwater wells as a water source. The Project Location and setback area do not fall within any vulnerable area delineation for intake protection areas, wellhead protection areas, or within a significant groundwater recharge area (Mississippi-Rideau Source Protection Committee).

5.3.12 Sewage Disposal

Sewage disposal is not required for the generation of electricity at the solar facility.

5.3.13 Other Equipment

During the operation and maintenance phases, the solar facility will not engage in, nor will any equipment be required for, the following activities:

- the production, handling, storing or processing of any waste, biomass, source separated organics, farm material or biogas; or
- discharges of contaminants to air.

6.0 Facility Operations Plan

6.1 Daily Operations, Staffing and Training

The Project will operate year-round and generate electricity during daylight hours only. The solar facility will be continuously monitored and managed utilizing a Supervisory Control and Data Acquisition (SCADA) system which monitors the status of the facility in real time and stores historical data for the purposes of trending the performance of the facility.

Minimal on-site activity is required for daily operations. Operating reports for the Project, which will track persons on-site and the frequency of maintenance or any incidents, will be produced on a regular basis. Site operators will be trained on policy and procedures in the event of an emergency scenario. Operators will act as first responders in the event of an on-site emergency. Additional resources such as qualified contractors will be utilized in the event of an environmental spill.

During the operations phase, the only minor potential negative environmental effects to natural features would be due to routine maintenance at the Project Location. These are outlined in greater detail in the Environmental Effects Monitoring Plan ("EEMP") (see **Appendix A**). No hazardous materials will be stored on-site with the possible exception of oil for transformers. It is anticipated that the oil will be FR3 oil (derived from vegetable oils). Transformer oil will be adequately contained and accompanied by a Spills Prevention and Contingency Plan.

6.1.1 Stormwater Management

During the operations phase of the Project, management of stormwater is typically focused on the mitigation of potential longer-term effects of the proposed development, including marginal increases or decreases in stormwater retention, runoff volumes and/or flow rates, and erosion and sediment issues. Best management practices to mitigate these effects include regular monitoring and maintenance of SWM features during construction that are required for water quality and quantity control (e.g., bioretention swales, etc.) and that are to remain in place for the duration of facility operation. Specific activities may include monitoring runoff sediment levels after rain events, and performing scheduled clean-out of stormwater facilities, as necessary.

The Proponent will prepare a SWM Plan during the detailed design stage and prior to the start of construction. This SWM Plan will include recommended mitigation measures and monitoring activities to take place during operation of the facility.

6.1.2 Water Taking

Water takings are not anticipated to be required during operations. Any water that may be taken from an on-site well is estimated would be very minor (i.e., less than 50,000 L/day). Therefore, no negative effects are anticipated.

6.2 Operations and Maintenance Activities

The activities outlined in **Table 2** are associated with the operation and maintenance of the solar facility. It will operate year-round and generate electricity during daylight hours only. The amount of daily power generated will depend on the available resource. During normal Project operations, minimal on-site activity is required.

Table 2: Operations and Maintenance Activities

Activity	Description
Monitoring and Meter Calibrations	The solar facility will be monitored remotely 24 hours a day to ensure proper power output and to alert the operations staff to potential issues. Most issues can be remotely diagnosed so that the correct individual(s) can be dispatched to the solar facility to correct any problems.
Routine Periodic Maintenance and Inspection of Project Components	Site visits will occur as scheduled to visually inspect the solar facility and monitor that the facility is in proper working order. Activities that will occur during these visits may include data collection, regular maintenance (as described below) and any necessary minor repairs such as replacement of weathered electrical components. Security visits may also occur periodically. Transformers, inverters, solar panel arrays and racking will be visually inspected during scheduled visits.
Access Roads	Routine inspections of access roads may indicate the need for the addition of granular material and/or minor levelling and grading activities. The work is normally accomplished by small-scale equipment such as a skid steer loader.
Lighting	For security and maintenance purposes, task-specific lighting may be installed near the entrance of the facility and task-specific lights will be provided as necessary. These will be appropriately shielded or directed to avoid light trespass impacts to neighbours and natural features. Lighting may also use motion sensors to address potential negative effects, as necessary, and will be inspected for burned/broken bulbs. Regularly scheduled maintenance will occur.

Activity	Description
Periodic Landscape Maintenance	Native vegetation or a crop suitable for grazing may be planted once construction activities are complete. It will be necessary to maintain the land in such a way that vegetation does not shade or in other ways impact the solar panels. Regular scheduled maintenance will also occur to manage weed growth, which may include the use of sheep grazing or established vegetation management zones with meadow or early successional shrub habitat as part of a vegetation management strategy. This will be done in consideration of seasonal limitations outlined in the NHA. It is not anticipated that herbicides will be used to manage vegetation. Regularly scheduled maintenance will occur.
Major Maintenance	Unforeseen, large repairs are not anticipated. Should major maintenance or equipment replacement be required it will be performed using existing roads and site access points.
Third Party Inspections and Testing	Activities will be carried out as required by the local utility and other governing bodies in addition to any regularly scheduled inspections and testing.
Traffic	Activities will be carried out as required by the local utility and other governing bodies in addition to any regularly scheduled inspections and testing. No major deliveries are anticipated for maintenance. Minimal vehicle traffic is associated with regular maintenance.
Drainage and Erosion Control	Stormwater runoff at the Project Location will be managed as per a detailed SWM Plan to be developed and implemented by the appropriate engineer and contractor; and this will be done with consideration to maintaining pre-construction drainage patterns and recommendations or limitations outlined in the NHA or Water Reports. Implemented measures will be inspected during routine maintenance.
Waste	During the operation phase, no hazardous materials will be stored on-site except for oil for transformers and small quantities required for facility maintenance. Transformer oil will be adequately contained and accompanied by a Spills Response Plan, which will be developed prior to the start of construction.

7.0 Environmental Effects Monitoring Plan

The EEMP outlines how potential negative environmental effects of the proposed Project will be mitigated and how ongoing monitoring will occur to meet the requirements set out in Ontario Regulation 359/09. The EEMP includes information on potential negative effects associated with all phases of the Project from construction through decommissioning. The potential negative environmental effects associated specifically with the construction phase are also described in the Construction Plan Report. Given the nature of solar power generation and the mitigation and monitoring commitments set out in the REA application, no significant environmental effects are expected during the operation of the Project.

Appendix A presents the EEMP for the Project, which includes identification of the potential negative environmental effects, performance objectives, mitigation strategies and the proposed monitoring plan for each affected feature or environmental component.

8.0 Emergency Response and Communications Plan

Emergency events associated with a solar facility are unlikely. The proponent will develop an Emergency Response and Communications Plan (ERCP) that cover the entire life of the Project including construction, operation and decommissioning phases. The plans will be in place prior to construction and will be reviewed and updated on an annual basis or when necessary, due to changes in operation. Information dissemination to stakeholders on significant changes will follow the same procedures as described in **Section 8.3**.

8.1 Emergency Response Plan

Prior to construction, the Proponent will establish an emergency response plan for the Project to be included in the ERCP. In preparing this plan, the Proponent will discuss potential emergency scenarios that could arise during construction, operation, maintenance and decommissioning of the Project with related parties such as the Township of Drummond/North Elmsley, Fire Department, etc. and finalize the plan. A project-specific emergency response plan for the construction phase of the project will be developed by the contractor(s). Copies of the plan will be kept on-site and in relevant offices. Similarly, the emergency response plan may be updated upon the commissioning of the Project.

8.2 Emergency Communications Plan

An emergency communications plan will be included in the ERCP and will provide key contact information for relevant responders, regulators, landowners, Indigenous Rights Holders and other stakeholders. It will contain a description of the communication protocols between the Proponent and relevant responders under emergency scenarios applicable to the Project. Key contacts and their information (names, emergency phone numbers) will be kept in an established, highly visible location in the construction site and the Proponent offices for access during an emergency.

In the event of an emergency, relevant responders will be contacted in accordance with the chain of communication included in the ECRP. If required during a major emergency, the Proponent will provide information releases to the community. Technical staff will recommend action plans and assist with responses to the public, stakeholders, Indigenous Rights Holders and first responders such as the local fire department and police services.

8.3 Non-Emergency Communications Plan

This section provides information on the methods of communication and information dissemination in non-emergency situations.

8.3.1 Ongoing Stakeholder Engagement

Stakeholder engagement activities will continue throughout the life of the Project. Information will be mailed and/or emailed to stakeholders and Indigenous Rights Holders as necessary. During construction and operations phases of the Project, a sign will be erected at the entrances to the solar facility, which will include the appropriate contact information, including telephone number should the public have any questions, concerns or complaints.

The following consultation activities are up-coming:

- final copies of REA documents posted on website;
- notice announcing application posting on Environmental Registry of Ontario (ERO);
- announcement on the Project website when MECP review is complete and IESO Notice to Proceed has been issued; and
- other ongoing communications with the public and stakeholder groups.

Members of the public can contact the Proponent at any time with questions or comments about this Project via phone or email. Contact information is provided in **Section 2.0** of this and other REA technical reports and is available on the website and in newspaper notices.

8.3.2 Communications Methods, Records and Complaints Resolution Process

Correspondence received by the Proponent will be recorded in an electronic file and/or logbook. If received prior to the REA submission to MECP, this correspondence will be included in the *Consultation Report*. If received after the REA submission and during the MECP Technical Review of the application, it will be recorded and provided to the MECP, if requested. In both cases, if the correspondence requires a response, this will be provided in a timely fashion, and the response will be recorded.

Complaints and other communications received during the construction, operations, maintenance and decommissioning phases will be recorded in an electronic file and/or logbook and will include the following:

- time and date of communication
- type of inquiry/comment/complaint
- name and contact information of the person(s)

- response and date of response, and
- any follow-up issues.

A record will be kept for complaints, including: the history of the complaint resolution process that was followed and actions taken to address the cause of the complaint. Where appropriate, steps will be taken to prevent reoccurrence of similar complaints in the future, and this information will also be recorded.

9.0 Considerations for Projects Subject to Land Use Plans

The Project is not located in areas subject to Land Use Plans. Specifically, the Project does not lie within the Niagara Escarpment, Lake Simcoe Watershed, Oak Ridges Moraine or the Greenbelt.

10.0 Conclusions

This DOR has been completed to fulfill regulatory requirements as mandated by the provincial government for the development of the Project. This report is consistent with the provisions of *Ontario Regulation 359/09* for a Class 3 Solar Facility and has been prepared in accordance with MECP guidance documents. Given the nature of solar power generation, few (if any) negative environmental effects are anticipated during the operations phase. Potential negative effects on the environment from operational and maintenance activities are outlined in the EEMP and have been minimized or avoided through careful facility layout planning, the application of appropriate mitigation measures, and adherence to regulatory requirements. An ERCP will provide the framework and protocols for the facility so that the Proponent, stakeholders, Indigenous Rights Holders and first responders are prepared in the unlikely event of an emergency. Based on the results of the Noise Study Report the Project is predicted to be compliant with regulatory noise requirements without the use of mitigation measures during operations.

The generation of power from solar energy will displace up to 13.2 MW AC of electricity that otherwise may have been generated by fossil fuel or non-renewable power plants. As a result, the energy generated will not contribute to climate change or emissions-related health impacts. The project will contribute to the province's *Energy for Generations* (June 2025) plan, Ontario's first Integrated Energy Plan, which states that "*starting in 2025, nearly 3,000 MW of energy storage will be added to the grid enabling intermittent renewables to play a more reliable and integrated role*". A further benefit is that jobs will be created, especially during the construction phase.

The overall conclusion of this Design and Operations Report is that this Project can be operated without any significant adverse residual effects to the environment.

Figures

Figure 1: Project Location

Figure 2: Site Plan – Land Use

Figure 3: Site Plan – Conceptual Component Layout

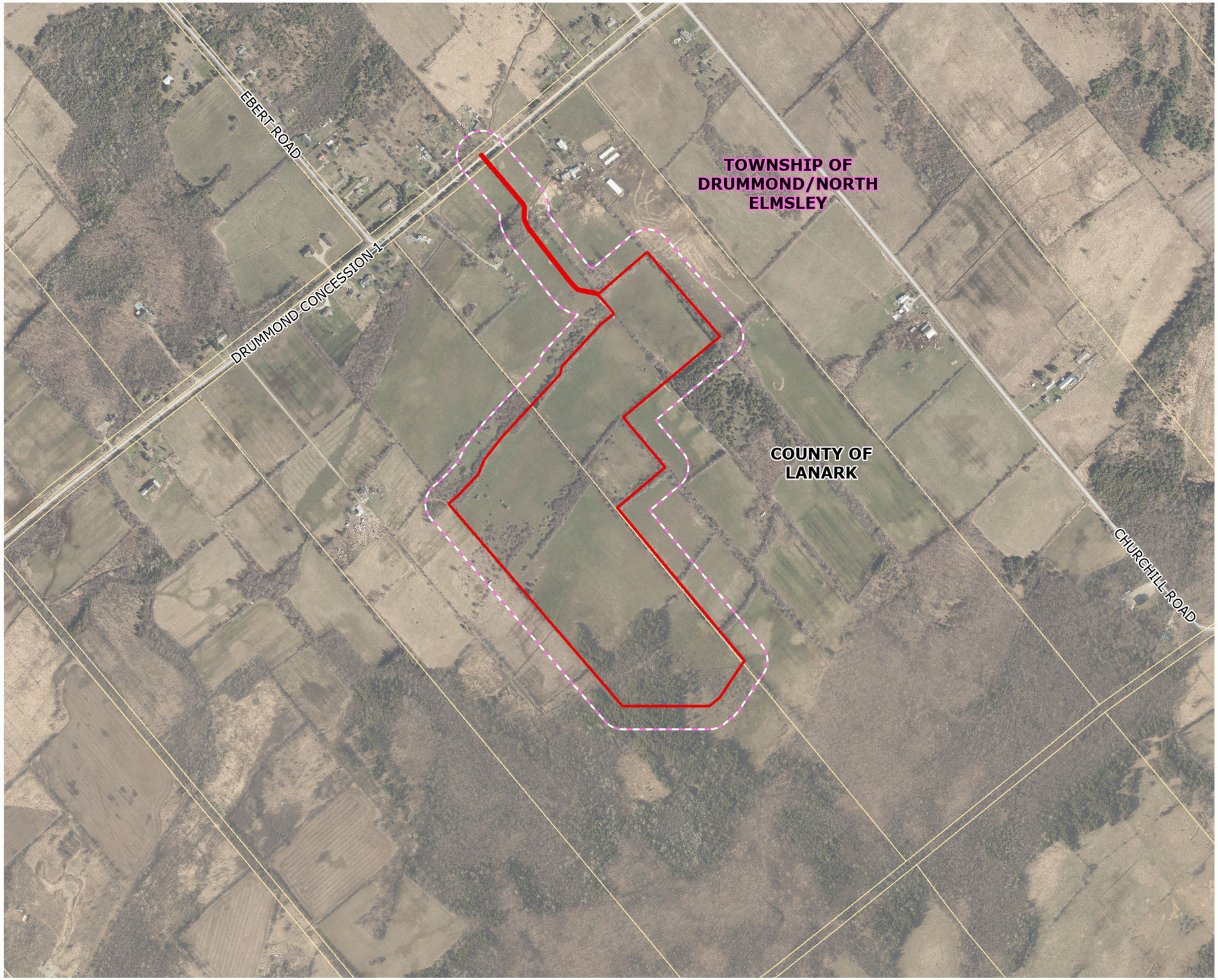
Figure 4: Site Plan – Natural Heritage Features

Golden Leaf Agrivoltaics Project

Evaluation of Significance Report

Project Location

Figure #1



- Project Location
- Adjacent Land Setback (50 m)
- Local Road
- Lot/Concession



Map Drawing Information:
Data Provided by Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Scale 1:8,000

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Checked By: MM	Status: DRAFT
Map Projection: NAD 1983 UTM Zone 18N	Date: 2026-09-04

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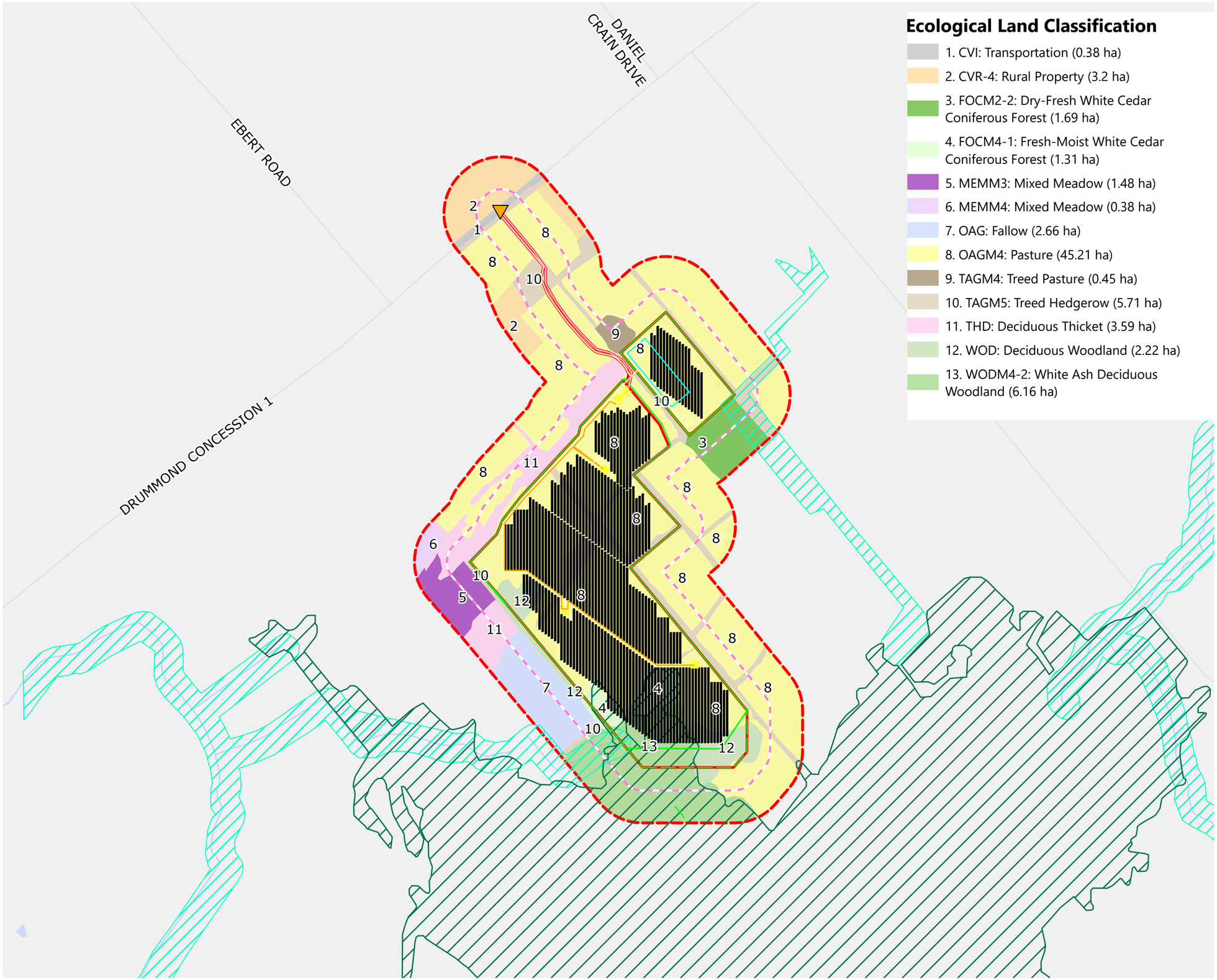

Ecological Land Classification

- 1. CVI: Transportation (0.38 ha)
- 2. CVR-4: Rural Property (3.2 ha)
- 3. FOCM2-2: Dry-Fresh White Cedar Coniferous Forest (1.69 ha)
- 4. FOCM4-1: Fresh-Moist White Cedar Coniferous Forest (1.31 ha)
- 5. MEMM3: Mixed Meadow (1.48 ha)
- 6. MEMM4: Mixed Meadow (0.38 ha)
- 7. OAG: Fallow (2.66 ha)
- 8. OAGM4: Pasture (45.21 ha)
- 9. TAGM4: Treed Pasture (0.45 ha)
- 10. TAGM5: Treed Hedgerow (5.71 ha)
- 11. THD: Deciduous Thicket (3.59 ha)
- 12. WOD: Deciduous Woodland (2.22 ha)
- 13. WODM4-2: White Ash Deciduous Woodland (6.16 ha)

Golden Leaf Agrivoltaics Project

Design and Operations Report

Land Use

Figure 2

- Project Location
- 50 m Site Investigation Area
- Study Area (120 m)
- Point of Common Coupling
- Fence
- Interface Transformer
- Inverter
- Laydown Area
- Overhead Line
- Racking
- Road
- Vegetation Management Area
- Underground Cable
- Local Road
- Watercourse
- Water Body

Zoning (Approximate)

- Natural Corridor and Linkages
- Significant Woodland

Map Drawing Information:
Data Provided by Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Scale 1:8,000

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Created By: AEE	Project: 26-3072
Checked By: KV	Status: DRAFT
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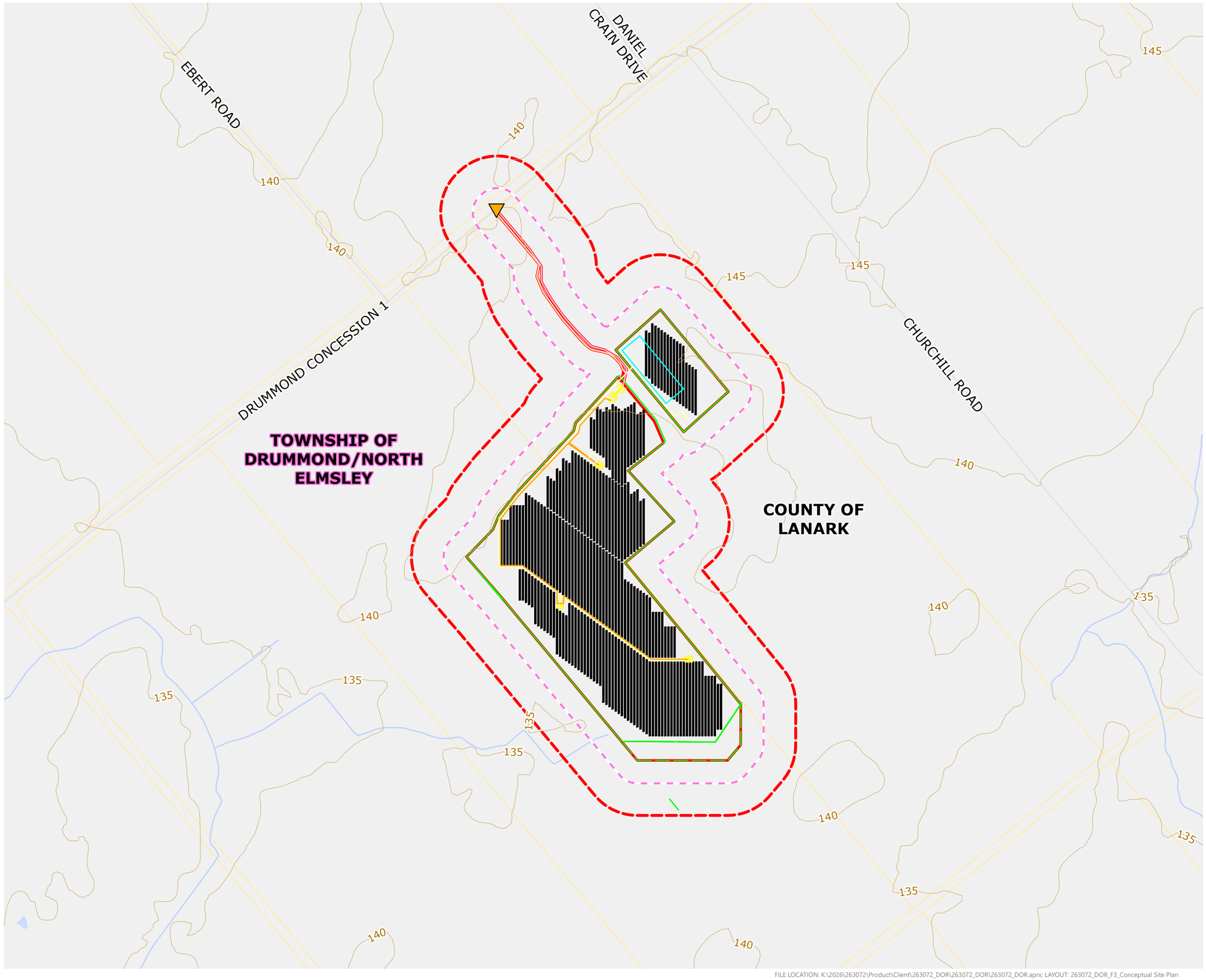
Golden Leaf Agrivoltaics Project

Design and Operations Report

Conceptual Site Plan

Figure 3



- Project Location
- Study Area (120 m)
- 50 m Site Investigation Area
- Point of Common Coupling
- Fence
- Interface Transformer
- Inverter
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- Overhead Line
- Racking
- Road
- Vegetation Management Area
- Underground Cable
- Watercourse
- Local Road
- Water Body
- Lot/Concession
- Contour

Map Drawing Information:
Data Provided by Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

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Checked By: KV	Status: DRAFT
Map Projection: NAD 1983 UTM Zone 18N	Date: 2026-11-18

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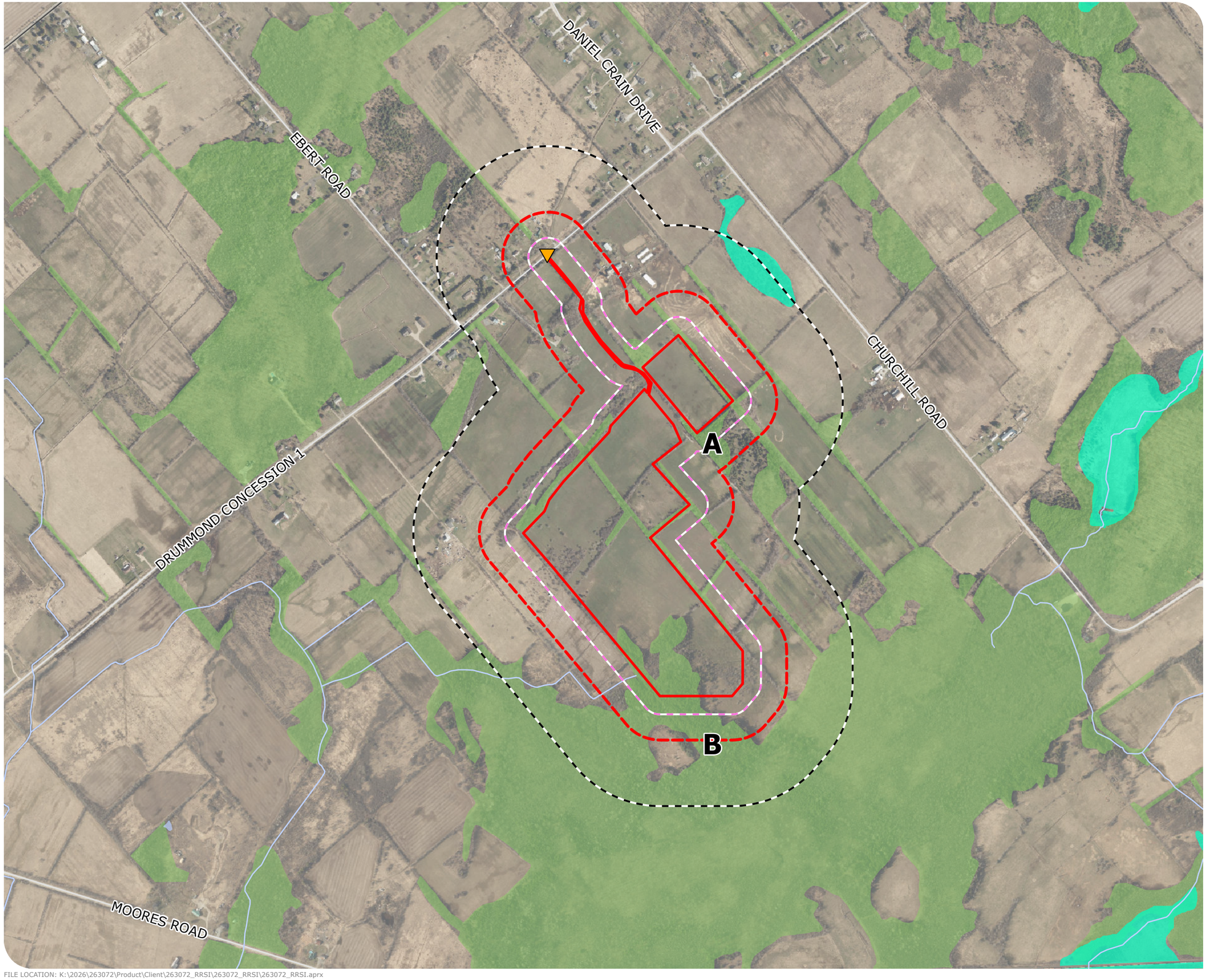

GOLDEN LEAF AGRIVOLTAICS PROJECT

DESIGN & OPERATIONS REPORT

NATURAL HERITAGE FEATURES

FIGURE 4

- Project Location
- 50 m Site Investigation Area
- Study Area (120 m)
- Study Area (300 m)
- Point of Common Coupling
- Major Road
- Local Road
- Watercourse
- Water Body
- Unevaluated Wetland
- Wooded Area

SCALE 1:10,000

0 125 250 500 m

N W E S

MAP DRAWING INFORMATION:DATA PROVIDED BY MNR

MAP CREATED BY: AEE
MAP CHECKED BY: MB
MAP PROJECTION: NAD 1983 UTM Zone 18N

PROJECT: 26-3072

STATUS: DRAFT

DATE: 2026-10-30

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Appendix A

Environmental Effects Monitoring Plan (EEMP)

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
CONSTRUCTION PHASE								
Cultural Heritage and Archaeological Resources								
Cultural heritage resources. Archaeological resources.	Disruption or destruction of cultural or archaeological materials.	Low	Low	Minimize impacts to cultural heritage resources Minimize impacts to archaeological resources	• Mitigation for archaeological resources will be implemented as outlined by the Stage 2 Archaeological Assessment and Cultural Heritage Assessment. • Avoidance or implementation of buffers where construction is to be located close to cultural heritage resources. Conduct further analysis of vibration-related impacts where buffers are not feasible. • No construction activities will take place in the vicinity of known archaeological finds until the assessments have been completed and clearance has been obtained from the MCM.	N/A	N/A	Should a previously undocumented archaeological resource be discovered, alteration of the site will immediately cease, and additional fieldwork will be undertaken by a licensed archaeologist in accordance with Section 48(1) of the Ontario Heritage Act. Should human remains be found, site alteration will immediately cease, and the local police or regional coroner's office will be notified immediately. If the coroner determines the remains are not subject to a forensic investigation, the Registrar of Burial Sites (under the *Funeral, Burial and Cremation Services Act, 2002)* and the provincial ministry responsible for heritage will be notified, and the discovery will be managed in accordance with applicable legislation.

[1] Please refer to the *Natural Heritage Assessment Environmental Impact Study* for additional monitoring information for natural features.

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
Natural Heritage Features								
Significant Woodlands Open Country Bird Breeding Habitat SCC (SAR Birds & Bats)	<u>Physical</u> Permanent removal or degradation of woodland/wildlife habitat/SAR habitat. Disturbance of wildlife species moving across general Project due to increased traffic volumes during construction. Mortality of avian species due to collision with overhead connection lines. <u>Functional</u> Increased vegetation species competition due to potential introduction of invasive species. Change in surface water/drainage run-off volumes and patterns to wetlands and associated wildlife habitat. Compaction of ground near treed vegetation root zone. Potential changes to water quality.			Persistence of significant natural features. Avoid or minimize sediment deposition. Significant wildlife habitat will continue to meet the criteria for significance post-construction (where retained following construction phase). General connectivity between wetlands, woodlands, and wildlife habitats maintained at a local landscape level.	Compensation planting to be provided where possible and as deemed appropriate by a qualified person for removal. Cleared lands to be vegetated with native plant species as soon as practical following construction activities to emulate pre-construction conditions to the extent possible. <u>Operational Vegetation Management Zone (Shade Mitigation)</u> • To ensure solar array performance without resulting in the outright removal or fragmentation of the Significant Woodland, a tailored Vegetation Management Zone (VMZ) will be established along the edge of the woodland, outside the perimeter security fence. • The VMZ encompasses 1.16 ha of woodland edge governed by a 3:1 setback to canopy height ratio. In this zone no ground disturbance, grading, soil compaction or physical project components will occur. Trees that breach the 3:1 solar shading angle will be selectively pruned or height reduced (topped) under the supervision of an ISA Certified Arborist rather than clear cut. Understory vegetation, low shrubs, leaf litter and root platforms will remain undisturbed to safeguard woodland edge hydrology and prevent soil destabilization. • By maintaining a modified canopy edge in lieu of full structural clearing, the VMZ minimizes edge microclimate shifts, avoids core interior habitat loss and preserves essential ecological functions within the adjacent natural heritage feature. • Cleared lands to be vegetated with native plant species as soon as practical following construction activities to emulate pre-construction conditions to the extent possible.	Planting area locations. Invasive species monitoring to occur within Project Location. ESC measures to be monitored where implemented according to the ESC plan. Wildlife monitoring to occur where fencing to exclude wildlife has been installed near significant wildlife habitat. Monitor for surface water quality at locations identified in the SWM Plan and/or REA issued by the MECP. Post-Construction Monitoring locations for	A survey of the planting area is to occur during the first growing season after planted. A survey for invasive species to occur during first growing season after Project reaches commercial operation. Monitor ESC measures regularly during construction. ESC monitoring to occur monthly or after rain events 10 mm or greater (within 24 hrs) until vegetation is re-established. Wildlife monitoring to determine if species present in construction disturbance area(s) to occur on an ongoing basis throughout the construction phase.	If survivorship in planting area is low, replacement may be require based on landscape planting warranty requirements. If invasive species are introduced into the Project Location from construction activities (i.e., species does not already occur in general areas), invasive species management will occur to remove the species and efforts to control further spread made. If accidental damage or removal to vegetation occurs beyond the planned removals, re-planting or similar native species may be require if function of the natural feature is compromised as determined by a qualified professional. Consultation to occur with MNR/MECP, as applicable. Repair deficiencies in ESC structures as soon as possible upon notification of breach in ESC structure and/or insufficient measures based on site conditions. If degradation of natural feature/habitat occurs, appropriate contingency measures will be implemented (e.g. re-

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
	Reduction in quality of habitat.				<u>Setbacks</u> • For wetlands/wildlife habitats not proposed for removal, setbacks provided below imply the vegetation that exists prior to construction will not be removed during construction to maintain the setback areas as vegetated buffers for the natural features. • A minimum 5 m setback to be applied to significant wildlife habitat and wetland areas adjacent to the Project Location where PV panels are located. A minimum 5 m setback to be applied to significant wildlife habitat and wetland areas adjacent to the Project Location where PV panels are located. A minimum 1 m setback is to be applied to access roads. <u>Erosion and Sediment Control (ESC)</u> • Restrict vegetation clearing to lands within the Project Location identified for development. Minimize soil exposure. • Install erosion and sediment control measures based on final Project ESC Plan prior to vegetation clearing, grubbing and grading to prevent mobilization of sediment and other contaminants from the Project Location into the surrounding landscape. ESC measures to remain functioning until vegetation has been re-established. <u>Stormwater Management</u> • Develop and implement a Stormwater Management Plan (SWM) Plan to ensure drainage patterns (i.e. movement of surface water across/from Project Location) are not significantly altered from the existing conditions due to road drainage, reduction in surface permeability due to soil compaction, etc. Hydrogeological work to be completed to verify that no significant changes to groundwater	significant natural features in the same location as pre-construction surveys where significant wildlife habitat is wholly or partially retained following construction and residual impacts are expected.	Monitor for surface water quality at a frequency and duration identified in the SWM Plan and/or REA issued by the MECP. Post-construction monitoring of significant wildlife habitat is not required as residual impacts are not expected.	establishment of mitigation measures, remediation), depending on the extent of degradation. If applicable performance objectives are not achieved following the first year of post construction monitoring and significant wildlife habitat is not reevaluated as significant, the MECP will be made aware of the monitoring results and additional habitat enhancement and post-construction monitoring will occur. The maximum length of time for post-construction monitoring will not exceed three years.

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
					characteristics are anticipated as a result of the Project. A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration, where applicable. <u>Vegetation/Habitat Considerations</u> • Woodland removal of sensitive natural features to be minimized if possible and vegetation management zone implemented to reduce impacts on the woodland edge. • To mitigate the effects of invasive species, the Clean Equipment Protocol for Industry (available from the Ontario Invasive Plant Council) should be followed for vehicles and equipment moving into and out of the Project Location. <u>Wildlife Considerations</u> • The construction workforce will be educated on local wildlife that may be encountered on the Project Location at the time of site orientation. Included in the orientation will be instructions for how to identify and avoid wildlife that may be encountered. • A protocol will be provided to contractors to follow in the event that wildlife is encountered. This protocol will include specific measures for dealing with turtles, snakes, breeding birds and other wildlife. Wildlife located within the Project Location will be relocated to an areas outside the Project Location (and into an area of appropriate habitat) as necessary. This will be completed by a professional trained in the safe handing of wildlife. Vehicle speeds restricted to 20 km/hr or less when travelling within the Project Location where PV panels and the substation are proposed. • Utilize fencing (e.g. perimeter fencing and/or silt fencing) to deter wildlife from entering the construction site during construction and decommissioning.			

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
					• The perimeter fencing is to have contact with the ground surface to prevent entry of wildlife. • here it is not feasible for the fence to contract the ground, other measures will be installed to prevent wildlife access under the fence. • Minimize impacts to breeding birds (April 1 to August 31) and bats (March 1 to November 30). • Clearing, turning and canopy maintenance of vegetation should be outside the breeding bird and bat season windows unless cleared by a qualified ecologist. • Should clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed 48 hours prior to clearing activities. If active nests are found of species protected in Migratory Birds Convention Act or nests of year-round protected species in the Migratory Bird Regulations, works within a buffer (species status dependent, as set by a qualified person in accordance with guidance provided by Environment Canada and Climate Change and/or MNR) will cease until nest has fledged. If no nests are present, clearing can occur. Prohibitions under the federal Migratory Bird Convention Act are to be compiled with. • Construction vehicle speeds to be restricted to 20 km/hr on municipal roads adjacent to where wildlife exclusion fencing has been installed (as described in this table). Minimize construction traffic during nighttime hours. Vehicle speeds to be restricted to 20 km/hr or less on the Project site and speed limit signage posted. • Access roads located outside of the perimeter fence are to be designed to discourage use by wildlife (e.g. turtle nesting deterred by use of hardeners, at grade access roads on bedrock etc.). • Overhead connection lines and supporting poles to include mitigation measures for reducing			

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
					collision mortality such as line marking in areas of known high bird activity. • Cleared lands to be vegetated with native species as soon as practical following construction activities. Check vehicle for snakes at start of day or if left idle for more than 1 hr.			
Water Bodies								
No water bodies were observed within the Project Location and Lands within 120 m.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Air, Odour and Dust								
Neighboring landowners	Deposition of dust on adjacent lands. Air quality and odour nuisance.	Low	Low	Minimize dust and odour resulting from construction activities.	• Vehicle idling will be prohibited where possible to minimize particulate matter from vehicles and equipment. • Equipment will be maintained in good working order. • Vehicular traffic will be minimized on exposed soils, and high traffic areas will be stabilized with fresh gravel. • Dust mitigation measures (e.g., light watering) will be implemented on gravel roads during construction.	N/A	N/A	N/A
Groundwater								
Groundwater table	Accidental fuel spillage/releases from equipment. Stormwater run-off. Minor waste generation.	Low	Low	Minimize impacts to groundwater during construction	• A Spill Prevention and Contingency to be in place prior to the start of construction. • Erosion and sediment control measures (e.g., silt fencing).	N/A	N/A	N/A
Noise								
Neighbouring landowners	Increased noise disturbance due to construction activities	Moderate	Low	Minimization of noise resulting from construction activities	• Maintaining equipment in good working order • Vehicle idling will be prohibited, where possible. • Construction noise within the Township of Drummond/North Elmsley is not governed by a dedicated municipal noise by-law, as the Township currently does not have a general	N/A	N/A	N/A

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
					noise or construction quiet-hours by-law in effect. Municipal exemptions and specific permitted operating hours (such as 7:00 AM to 7:00 PM) do not apply under local municipal code, though construction will be subject to provincial occupational safety guidelines and nuisance or disturbing-the-peace provisions. • Any noise complaints will be investigated and documented as discussed in the Communications Plan (see the Design and Operations Report).			
Land Use and Resources								
Land use at the Project Location	Removal of land from agricultural production.	Moderate	Low	N/A	• Impact is expected to be limited due to the Project's agrivoltaic design • Lands will be restored to their pre-construction condition, or a similar state at the time of decommissioning and adjacent lands can continue to be used for existing practices. • Mitigation measures will include implementation of an erosion and sediment control (ESC) plan, avoidance of major excavation works or fill placement, and grading techniques to meet pre-existing drainage conditions.	N/A	N/A	N/A
Neighbouring landowners	Visual impact.	Low	Low	N/A	Visual impacts during construction will be temporary in nature.	N/A	N/A	N/A
Provincial and Local Infrastructure								
General vicinity of the Project Location	Periodic traffic disruption.	Moderate	Low	Limit traffic flow disruption	A Traffic Management Plan will be prepared during detailed design in consultation with Township of Drummond/North Elmsley.	N/A	N/A	N/A
	Damage to local roads.	Moderate	Low	N/A	Roads will be returned to or maintained at pre-construction condition in accordance with Road Use Agreements established with Township of Drummond/North Elmsley.	N/A	N/A	N/A
Public Health and Safety								
Neighbouring landowners and other members of the community.	Equipment emissions.	Low	Low	N/A	• The project will comply with the Occupational Health and Safety Act regulation requirements during the construction phase.	N/A	N/A	N/A

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
Construction workers, neighbouring landowners and other members of the community.	Injury or death to construction workers or members of the public due to accidents related to construction equipment or traffic.	Low	High	No injury or death	• All equipment will be operated by qualified contractors. • All construction activities will be conducted by qualified contractors in accordance with required standards and codes. All activities will abide by local laws and regulations. • The contractor will create site-specific health and safety procedures. The contractor will also provide job safety assessment information prior to construction start up. • All equipment will be maintained in good working order. • The Project Location will be monitored during construction to discourage unauthorized access. Restricted areas will also be flagged, as appropriate. • Smoking will be prohibited except in designated areas. • Appropriate fire safety equipment (including fire extinguishers) will be available on site and stored in construction vehicles and site trailers as appropriate. An ERCP will be prepared in the event of an emergency on the site and will provide key contact information for relevant responders, regulators, landowners and other stakeholders.	N/A	N/A	N/A
Construction workers, neighbouring landowners and other members of the community, Municipal firefighters.	Fires (electrical, wildfire, etc.) at the Project Location during construction.	Low	Moderate	Minimize fire potential at the Project Location		N/A	N/A	Implementation of ERCPs.
Areas Protected Under Provincial Plans and Policies								
No potential negative effects are anticipated to the Greenbelt Protected Countryside, Greenbelt Natural Heritage System, Oak Ridges Moraine and/or Lake Simcoe Watershed.								
OPERATIONS PHASE								
Cultural Heritage and Archaeological Resources								
There are no potential negative effects anticipated to cultural heritage and archaeological resources and local infrastructure during the operations phase of the Project.								
Natural Heritage Features								
During the operations phase of the Project and following the implementation of a Stormwater Management Plan for the Project, there are no expected impacts or effects to significant natural features that would require ongoing mitigation measures or monitoring.								
Water Bodies								

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
No water bodies were observed within the Project Location and Lands within 120 m.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Air, Odour and Dust								
Operation of the facility will have no impact on air, odour or dust with the exception of unanticipated major maintenance activities, which have the potential to cause negative environmental effects as described for the construction phase of the Project. The same mitigation and monitoring activities would apply.								
Noise								
In addition to the effect listed below, unanticipated major maintenance activities have the potential to cause negative environmental effects as described for the construction phase of the project and the same mitigation and monitoring activities would apply.								
Neighbouring landowners.	Increased noise disturbance due to operation of the solar facility.	Low	Low	Minimize the amount of noise caused by the inverters to comply with the MECP Publication NPC-300	If required, perform a noise audit in accordance with the requirements of the MECP publication NPC-300 (Environmental Noise Guideline – Stationary and Transportation Sources - Approval and Planning), if necessary.	N/A	N/A	On-site noise testing and re-modelling, if required.
Groundwater								
Groundwater table	Release of fuels, chemicals or sewage disposal.	Low	Low	Minimize potential effects to the groundwater table during operations.	• The Emergency Response and Communication Plan will be followed should a spill occur (as outlined in the Design and Operations Report). • The MECP (Spills Action Centre) will be notified in the event of a spill. • Spill response kits will be kept on-site in trailers or vehicles, as necessary. • Potential effects to groundwater will also be mitigated in accordance with a Stormwater Management Plan, to be developed during detailed design.	Project area	N/A	N/A
Land Use and Resources								
Neighbouring landowners	Visual impact.	Moderate	Low	Minimize visual impact of project through screening.	• Visual impacts on rural residential homes immediately adjacent to the project will be minimized to the extent possible through landscape plantings. Note, vegetation screening can take 5-10+ years to establish.	Landscape planting area	A survey of the planting area is to occur during the first and second growing seasons after planted.	If survivorship in planting area is low, replacement may be require based on landscape planting warranty requirements.

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
Provincial and Local Infrastructure								
There are no potential negative effects anticipated to provincial and local infrastructure during the operations phase of the Project.								
Public Health and Safety								
In addition to the effects listed below, unanticipated major maintenance activities have the potential to cause negative environmental effects as described for the construction phase and the same mitigation and monitoring activities would apply.								
• Maintenance employees • Members of the public	Electrocution or other injury from operating components.	Low	Moderate	Minimize potential for electrocution or injury to public and employees.	The Project will comply with the Occupational Health and Safety Act regulation requirements during maintenance activities. The Project Location will be fenced as per Electrical Safety Authority ("ESA") requirements to prevent unauthorized access.	N/A	N/A	Implementation of ERCPs, should an injury occur.
• Neighbouring landowners • Other members of the community • Maintenance workers • Municipal firefighters	Fire (e.g., electrical or wildfires) at the Project Location during operation.	Low	Moderate	Minimize potential for fires at the Project Location	The Proponent will work with the local fire department to develop an emergency response plan for the Project Location, which will outline the ERCPs. (See the Design and Operations Report). This plan will include measures such as regular maintenance of vegetation and electrical equipment. The ERCPs will outline key contact information for emergency responders, landowners, contractors and stakeholders.	Project location	Ongoing (remotely)	Implementation of ERCPs.
Provincial Plans and Policies								
No potential negative effects are anticipated to the Greenbelt Protected Countryside, Greenbelt Natural Heritage System, Oak Ridges Moraine and/or Lake Simcoe Watershed.								
DECOMMISSIONING PHASE								
Cultural Heritage and Archaeological Resources								
There are no potential negative effects anticipated to cultural heritage and archaeological resources and local infrastructure during the decommissioning phase of the Project.								
Natural Heritage Features								
Decommissioning activities have the potential to cause negative environmental effects as described for the construction phase and the same mitigation and monitoring activities would apply with the exception that the final site restoration activities will be returned to a functional state. See Table 9 in the *Natural Heritage Assessment Environmental Impact Study* for a list of potential environmental effects that may occur during decommissioning and mitigation measures for significant/provincially significant natural features.								
Water Bodies								
Decommissioning activities have the potential to cause negative environmental effects as described for the construction phase and the same mitigation and monitoring activities would apply with the exception that the final site restoration activities will be returned to a functional state.								

Affected Feature(s) or Environmental Component	Potential Effect	Likelihood	Magnitude	Performance Objective	Summary of Mitigation Measures	Monitoring[1]		Contingency Measures
						Monitoring Location	Frequency & Duration	
Air, Odour and Dust								
Decommissioning activities have the potential to cause negative environmental effects similar to those described for the construction phase and the same mitigation and monitoring activities would apply.								
Noise								
Decommissioning activities have the potential to cause negative environmental effects similar to those described for the construction phase and the same mitigation and monitoring activities would apply.								
Land Use and Resources								
There are no anticipated negative environmental effects to land use and resources during the decommissioning phase of the Project. At the time of decommissioning, the land will be restored to its pre-construction condition or a similar state as determined through consultation with the landowners and in accordance with zoning requirements. All project components will be removed, and the Project Location lands will be restored through the spreading of topsoil, re-vegetation and seeding, or appropriate methods dependent on the anticipated land use. Materials will be reused and recycled where available. See Section 5 of the Decommissioning Plan Report.								
Public Health and Safety								
In addition to the effect listed below, decommissioning activities have the potential to cause negative environmental effects similar to those described for the construction phase and the same mitigation and monitoring activities would apply.								
• Project Location lands • Neighbouring lands • Persons encountering hazards	Hazards and health impacts from debris left on-site.	Low	Low	N/A	The site will be cleared of debris and hazards and will be returned to a functional state.	N/A	N/A	N/A
Provincial Plans and Policies								
No potential negative effects are anticipated to the Greenbelt Protected Countryside, Greenbelt Natural Heritage System, Oak Ridges Moraine and/or Lake Simcoe Watershed as the Project Location is not located in these planning policy areas.								