

ONTARIO POWER GENERATION

LENNOX SOLAR PROJECT

ONTARIO **POWER**
GENERATION

Project Description Report

April 2015



DRAFT

PROJECT DESCRIPTION REPORT

ONTARIO POWER GENERATION

LENNOX SOLAR

Prepared for:

Ontario Power Generation Inc.
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Toronto, Ontario
M5G 1X6

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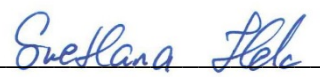
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ACRONYMS AND ABBREVIATIONS

AC	Alternating Current
ANSI	Area of Natural and Scientific Interest
CCRA	Connection Cost Recovery Agreement
CEAA	Canadian Environmental Assessment Act
CIA	Connection Impact Assessment
DC	Direct Current
ESA	Environmentally Significant Area
EIS	Environmental Impact Study
GS	Generating Station
ha	hectares
IESO	Independent Electricity System Operator
km	kilometres
kw	kilowatts
L	litres
LIDA	Lennox Industrial Development Area
LIO	Land Information Ontario
LRP	Large Renewable Procurement
m	metres
mm	millimetres
MNRF	Ontario Ministry of Natural Resources and Forestry
MTCS	Ministry of Tourism, Culture and Sport
MTO	Ontario Ministry of Transportation
MW	megawatts
MOECC	Ontario Ministry of the Environment and Climate Change
NHA	Natural Heritage Assessment
NHIC	Natural Heritage Information Centre
OPG	Ontario Power Generation Inc.
O.Reg.	Ontario Regulation
PDR	Project Description Report
PTTW	Permit To Take Water
PV	photovoltaic
REA	Renewable Energy Approval
RFP	Request for Proposal
SIA	System Impact Assessment

1.0 INTRODUCTION

Ontario Power Generation Inc. (“OPG”) or an associated Special Purpose Entity (referred to as OPG or the “Proponent”) is proposing to design, build and operate up to a 40 MW (megawatts) Solar Energy Project (the “Project”) at the existing OPG Lennox Generating Station (GS) site, and additional lands it owns in the Town of Greater Napanee, Ontario (see Figure 1 – Site Location Plan). This Project will be submitted into the Independent Electricity System Operator (IESO) Large Renewable Procurement (LRP) I Request for Proposal (RFP), with IESO awarding contracts to successful projects in the summer of 2015. The proposed OPG Project is classified under O.Reg. 359/09 Renewable Energy Approval (REA) process as a Class 3 Solar Facility and will generate up to 40 MW if successful in IESO LRP I program.

The Lennox GS is located on land located on Lake Ontario adjacent to the corner of Loyalist Parkway (Hwy 33) and Hwy 21. The Lennox GS land parcel represents the Project Site (the “Site”). Within the Project Site the “Project Location” represents the physical footprint of the Project, including the proposed facility components and temporary areas used during construction. The Project Location may be refined and narrowed down as the detailed design evolves, but will not be greater than the Project Location described and illustrated in this Project Description Report (PDR). Solar panels are proposed to be located within six areas (which are approximately 81 ha / 200 acres in total size) as outlined in Figure 1.

The Project Location will be used to install and accommodate all components of the proposed facility, including all temporary areas that will be used throughout the life of the Project (i.e. construction, operation and decommissioning), including construction laydown areas and access roads. All Project activities will be conducted on the land owned by OPG. The exact limits of the Project Location have yet to be determined, and will be refined and narrowed depending on the point of interconnection to the provincial grid, which will be established during on discussions with Hydro One and IESO.

This Project Description Report (PDR) provides an overview of the proposed Project including location, components, activities and potential negative environmental effects. This PDR is one component of the Ministry of Environment and Climate Change (MOECC) REA application requirement for the Project. As required under the O.Reg. 359/09 REA process, OPG has initiated preliminary environmental investigations within an area that extends 300 m from the expected extents of the Project Location.

The Project will consist of:

- Arrays of solar photovoltaic (PV) panels with the cumulative capacity to generate up to 40 MW power, mounted to racking and anchored to the ground or foundations;
- Electrical inverters to convert DC electricity generated by the solar panels to AC;

- Intermediate step-up transformers which will be connected to a main transformer prior to interconnection to the provincial grid;
- Electrical cables to connect all the panels and inverters and transformers;
- Site drainage and access roads;
- Weather stations;
- Enclosures for electrical (e-houses);
- Security fencing around the Project Site; and
- During construction, temporary construction laydown area and facilities (e.g., office trailers, portable toilets, etc.).

1.1 CONTACT INFORMATION

OPG is committed to public and Aboriginal consultation throughout the REA process and would be pleased to receive any comments, concerns or questions. OPG contact information is as follows:

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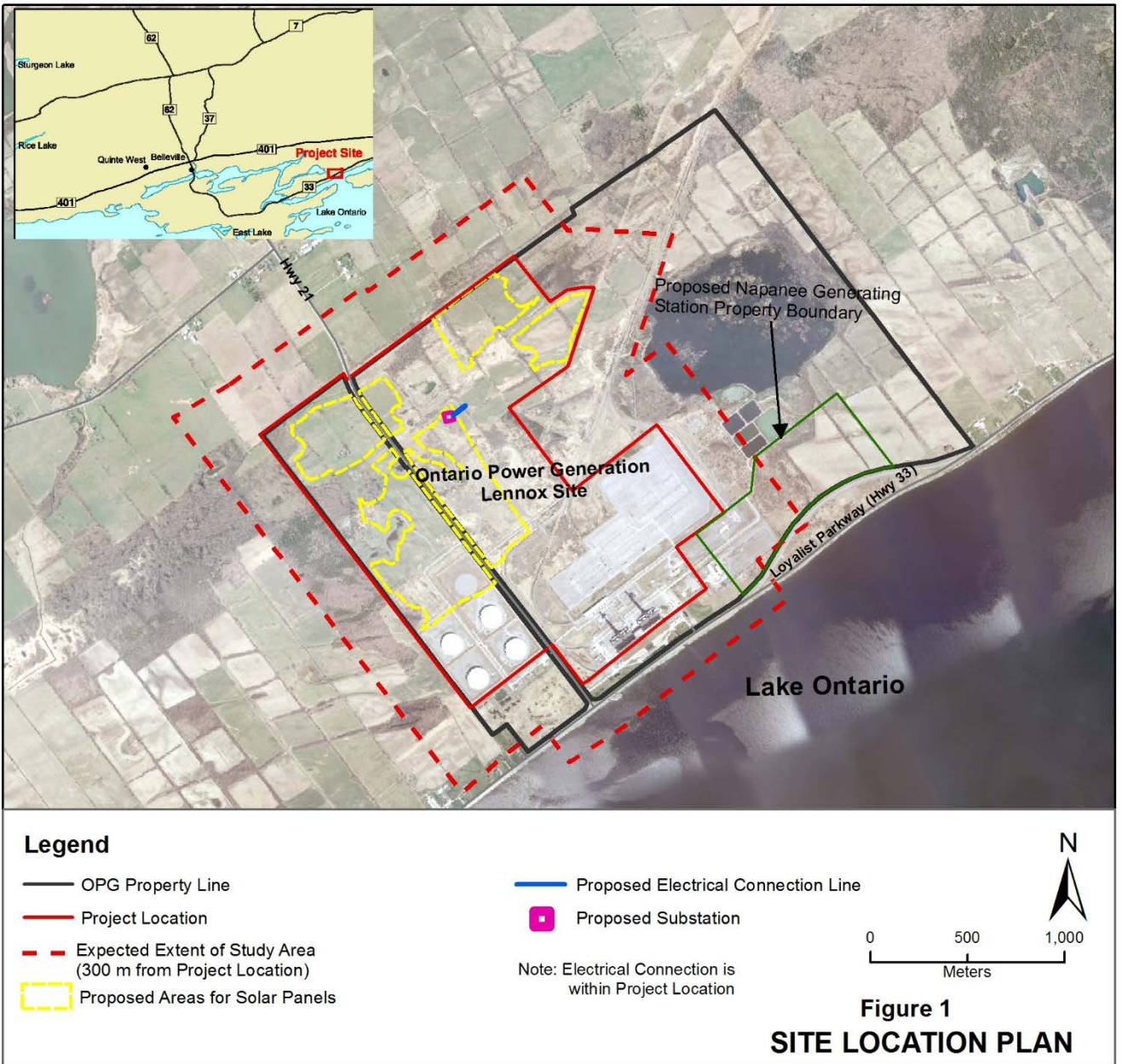
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SENES Consultants, now ARCADIS Canada Inc. (SENES), is the consultant responsible for the preparation of REA related reports for the Project. The SENES contact is:

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Figure 1 Site Location Plan



2.0 GENERAL INFORMATION

2.1 PROJECT DESCRIPTION REPORT REQUIREMENTS

This PDR has been prepared in accordance with Item 10, Table 1 of O.Reg. 359/09 and the MOECC draft guidance document, “Technical Guide to Renewable Energy Approvals” (MOECC 2013). The purpose of this PDR is to provide all stakeholders (including the public, Aboriginal Communities, municipalities, and regulatory agencies) with a preliminary description of the Project as well as the potential environmental effects that may result from the construction, operation and decommissioning of the Project.

The following table outlines the specific PDR content requirements as described in O.Reg. 359/09 and where the relevant sections can be found within this document.

Table 2.1 Project Description Report Requirements per O.Reg. 359/09

Requirements	Location in the Report
Any energy sources to be used to generate electricity at the renewable energy generation facility.	Section 3.1
The facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.	Section 3.5
If applicable, the class of the renewable energy generation facility.	Section 3.3
The activities that will be engaged in as part of the renewable energy project.	Section 3.6
The name plate capacity of the renewable energy generation facility.	Section 3.2
The ownership of the land on which the project location is to be situated.	Section 3.4
If the person proposing to engage in the project does not own the land on which the project location is to be situated, a description of the permissions that are required to access the land and whether they have been obtained.	Section 3.4
Any negative environmental effects that may result from engaging in the project.	Section 4.0
An unbound, well-marked, legible and reproducible map that is an appropriate size to fit on a 215 mm by 280 mm page, showing the project location and the land within 300 m of the project location.	Located in pocket at end of report. Also included in Section 1.0 Figure 1.

The preliminary descriptions and potential effects of the Project provided in this PDR will be updated throughout the REA process to reflect additional Project details, such as the proposed layout of Project components and the results of site assessments and investigations.

2.2 REGULATORY FRAMEWORK

In addition to the IESO LRP I RFP and the REA processes, the Project may be subject to other permits, licenses and authorizations from federal, provincial and municipal agencies/authorities to ensure that the Project will be fully compliant with all applicable regulations and guidelines. The specific requirements for various permits, licenses and authorizations will be based on the Project's detailed design, and will be documented during the REA process.

2.2.1 Federal

The Project is not included in the federal regulation designating physical activities, and thus does not require assessment under the *Canadian Environmental Assessment Act (CEAA)*.

2.2.2 Provincial

Permits, licences and authorizations such as those listed in Table 2.2 below, in addition to the REA and LRP I RFP, may be required for the Project to proceed. This list will continue to be refined and updated in consultation with various provincial agencies and authorities during the REA process.

Table 2.2 Potential Provincial Permits and Authorizations

Key Permit /Authorization	Administering Agency	Rationale
System Impact Assessment (SIA)	Independent Electricity System Operator (IESO)	Required for all transmission connections to the electrical grid.
Connection Impact Assessment (CIA)	Hydro One Networks Inc.	Detailed assessment of a project's impact on the grid. The results include a technical report outlining project feasibility, technical specifications needed for the project and the impacts the project would have on the grid.
Connection Cost Recovery Agreement (CCRA)	Hydro One Networks Inc.	Recovery of costs to grid operator of changes to allow connection based on findings from the Connection Impact Assessment.
Generator's License	Ontario Energy Board	Authorization for the generation and sale of electrical power within the province.
Notice of Project	Ministry of Labour	Notify the Ministry of Labour before construction begins.
Transportation Plan	Ontario Ministry of Transportation (MTO)	Adherence to road safety, suitability and road rehabilitation.
Development, interference with Wetlands, and Alterations to Shorelines and Watercourses Permit	Cataraqui Region Conservation Authority	Work within floodplains, water crossings, river or stream valleys, hazardous lands and within or adjacent to wetlands.
<i>Endangered Species Act</i> permit	Ontario Ministry of Natural Resources and Forestry (MNRF)	If provincially listed species at risk are present on the site, a permit may be required from the MNRF.

2.2.3 Municipal

Table 2.3 contains a list of potential municipal permits and authorizations OPG expects may be required during the REA process. However, OPG will consult with the municipality to identify all municipal permits, licenses and authorizations that may be required for the Project.

Table 2.3 Potential Municipal Permits and Authorizations

Key Permit / Authorization	Rationale
Municipal Consent - work within the right-of-way	Required for works in municipal road allowances.
Road Cut Permit	May be required for access roads off of county roads or works to county roads.
Pre-Condition Survey	Assessment of pre-construction conditions by engineering staff.
Building Permit	Compliance with building codes.
Entrance Permit	Entrance from county roads.
Transportation Plan	Adherence to road safety, suitability and road rehabilitation.
Additional Plans related to general engineering (e.g. siltation control, lot grading, plan of services, etc.), water, wastewater, storm-water, transportation, and geotechnical.	Supporting information/plans may be required by the Town of Greater Napanee.

3.0 TECHNICAL PROJECT INFORMATION

3.1 ENERGY SOURCE

The proposed Project is a solar power generation facility, which will use photovoltaic (PV) panels to absorb sunlight as a source of energy and convert it into electricity.

3.2 NAMEPLATE CAPACITY

The total nameplate capacity of the proposed Project will be up to 40 MW. The final Project design will determine the actual nameplate capacity.

3.3 RENEWABLE ENERGY GENERATION FACILITY CLASS

The proposed Project is a Class 3 Solar Facility under Ontario Reg. 359/09, which includes solar facilities with nameplate capacities exceeding 12 kW that are installed at a location other than on the roof or wall of a building.

3.4 LAND OWNERSHIP

OPG is the owner of the Lennox GS lands. The legal description of the Lennox GS lands are as follows:

- Part of Lots 17-22, Concession 1, geographic Township of Fredericksburgh, now in the Town of Greater Napanee, County of Lennox and Addington, Ontario.
- Part of Lots 15 and 16, Concession 1, geographic Township of Fredericksburgh, now in the Town of Greater Napanee, County of Lennox and Addington, Ontario.

3.5 PROJECT COMPONENTS

Major equipment and infrastructure associated with the Project are described below. However, it should be noted that the preliminary description provided in this report will be further refined before being finalized as the Project progresses through the REA process. All electrical equipment will meet Electrical Safety Authority, Ontario Electrical Safety Code, and equivalent standards and code requirements.

3.5.1 Solar Panels

Solar photovoltaic (PV) technology will be used by the proposed Project to generate up to 40 MW AC. Rows of solar panels, mounted on metal racks anchored to the ground, will

comprise the power generating facility. The make, model, size and dimensions for the solar panels are still to be determined.

3.5.2 Electrical Collection System and Interconnection

Solar panels will be connected in series, with the collected DC power input into an inverter for conversion to AC power. The power output from the inverter will go to intermediate step-up transformers, where the voltage will be increased. The electrical cables from the intermediate step-up transformers will feed power to the main facility substation, where the main step-up transformer will match the voltage required for interconnection to the provincial power grid.

Interconnection with the provincial power grid will take place within the Project Site; however, the exact point of interconnection is dependent on discussions with Hydro One and the IESO.

OPG is currently developing specifications for potential design build contractors to determine and finalize the number, make, model, size and dimensions for the solar panels, inverters and transformers that will be used by the Project.

3.5.3 Access Roads

Access roads will be constructed as required to permit access by construction vehicles, and will be maintained throughout the life of the Project for maintenance and operation related activities.

3.5.4 Temporary Work and Laydown Areas

Temporary work and storage areas will be built during the construction and decommissioning phases for delivered materials and equipment, stockpiled material, and general construction staging. The quantities of various materials delivered to and stored at the Project Location at any one time depend primarily on delivery schedules for solar panels and racking structures. By scheduling to ensure efficiency, OPG will arrange to minimize the quantities of various materials requiring temporary storage at the site.

Temporary office trailers and washroom facilities may also be established within the temporary work and laydown areas to support construction activities.

3.5.5 Perimeter Fencing

Lennox GS lands are currently surrounded by fencing, which will ensure security and safety to solar panels and associated ancillary equipment, as well as the public.

The existing Lennox GS site has gated entrances from Hwy 21, which will provide access to the Lennox GS lands by maintenance personnel and emergency vehicles.

3.6 PROJECT ACTIVITIES

The key activities related to the Project are carried out during construction, operation and decommissioning phases. General information about these activities is presented in the following paragraphs; however, OPG will be providing detailed Construction Plan, Design and Operations and Decommissioning Plan Reports at a later date within the REA process.

3.6.1 Construction

The construction phase of the Project is currently planned to commence in 2016 and last approximately two years, depending on the time of year and various other factors. Construction is expected to be ongoing (weather dependent), typically during regular construction hours throughout this period, or extended hours as required to meet construction schedules.

General construction activities include:

Site Preparation: Site preparation includes activities such as site surveying and staking the Project Location, setup of temporary offices and other facilities, setup security fencing, installation of sediment and erosion control measures, clearing and fencing for temporary construction staging areas, clearing vegetation from the Project Location, grading for storm water management and construction of access roads.

Solar Panel Installation: Solar panels will be mounted on metal racks, which will be anchored to a foundation or to the ground to a depth below the frost line. Drilling may be required in areas where the soil is shallow or bedrock is exposed.

Electrical Collection System and Interconnection: DC and AC cables connecting solar panels, inverters and step-up transformers will be placed underground or potentially via overhead wires. Connection of the main transformer to the electrical grid may be underground or via overhead wires, which will be determined during the Project design.

Inverters, intermediate step-up transformers and the main transformer (including electrical controls, switchgear, and protection/monitoring systems) will be mounted on concrete slabs and may be housed in enclosures.

3.6.2 Operation

Upon award of a LRP I contract and of an REA, and following completion of construction, it is expected that the Project would commence operation in 2018-2019 (based on current schedule) and operate for a 20 year period. However, with proper maintenance, the Project could continue to operate for an additional 10 or more years. During the Project operational period, equipment will be monitored remotely and employees or contractors will be available to complete regular preventative maintenance work. This work typically includes inspecting equipment, testing and calibrating equipment, maintaining site vegetation and if required pressure-washing solar panels.

3.6.3 Decommissioning

Decommissioning will occur after operation of the facility is complete and involves the removal of all Project components and restoring of the land to an acceptable condition for its intended future use. Prior to decommissioning OPG will prepare a comprehensive decommissioning plan and submit it to the MOECC for review and approval.

Decommissioning activities will include the removal of scrap metal and cabling for recycling, removal and disposal of non-recyclable material to approved disposal sites, removal of industrial waste to be categorized and disposed of in compliance with regulatory requirements and then restoring the Project Location for future land uses to be determined in consultation with OPG management, municipal authorities and others at the appropriate time.

4.0 POTENTIAL ENVIRONMENTAL EFFECTS

The potential environmental effects of constructing, operating and decommissioning a solar facility are well understood and can be typically mitigated through well-known and accepted techniques and practices. The following subsections provide a summary of cultural and natural features within the study area and a description of the potential environmental effects that may result from engaging in the Project.

4.1 CULTURAL HERITAGE AND ARCHAEOLOGICAL ASSESSMENTS

4.1.1 Cultural Heritage Assessment

As required by the REA process, a Cultural Heritage Assessment will be carried out in accordance with the provisions of the *Ontario Heritage Act* and comply with “Cultural Heritage Resources – An Information Bulletin for Projects Subject to Ontario Regulation 359/09 – Renewable Energy Approvals” (MTC 2011 updated August 2013) formulated by the Ontario Ministry of Tourism and Culture. Currently, there are no known cultural heritage resources within the Project Location. Any required reports will be submitted to the Ministry of Tourism and Culture for review for completeness.

4.1.2 Archaeological Assessment

As required by the REA process, an archaeological assessment will be carried out in accordance with the provisions of the *Ontario Heritage Act* and comply with the “Standards and Guidelines for Consultant Archaeologists” (MTC 2011). The archaeological assessment will identify the presence and nature of any past archaeological investigations or known archaeological resources within or proximate to the Project Location. It will also evaluate existing conditions within the Project Location to identify any parts of the Project Location that have a potential for archaeological remains and warrant more detailed field-based assessment.

Based on a preliminary records review, undisturbed zones within the Project Location are considered to be of high archaeological potential due to their proximity to known archaeological sites, areas of historic development, existing water sources, and historic transportation corridors. Aboriginal communities will be consulted to determine if they are interested in participating in and monitoring archaeological assessment work. Reports documenting the results of the assessment are submitted to the Ministry of Tourism, Culture and Sport (MTCS) for review against the Standards and Guidelines for completeness.

4.2 NATURAL HERITAGE ASSESSMENT

A Natural Heritage Assessment (NHA) is required for proposed renewable energy projects. The NHA requires a records review to identify any of the following natural heritage features present at or within 120 m of the proposed Project Location:

- Significant Woodlands;
- Significant Wetlands;
- Significant Wildlife Habitat;
- Provincial Parks;
- Conservation Reserves; or
- Areas of Natural and Scientific Interest (Earth or Life Science).

Further, the NHA requires a site assessment and evaluation of significance to determine whether features present at or within 50 m of the proposed Project Location are significant or provincially significant.

4.2.1 Natural Features Records Review

4.2.1.1 Methods

The REA Regulation requires that an area extending 120 m beyond the proposed Project Location is examined during the records review. The following table identifies the data sources reviewed, to date, to determine potential natural heritage features within 120 m of the Project Location (Table 4.1). As noted above, the exact limits of the Project Location have yet to be determined; therefore, the Project Location is currently assumed to be the Project Site. The inventory of natural heritage features will be updated throughout the REA process as results become available from site investigations, baseline data collection, and consultation with relevant provincial agencies, municipalities, Aboriginal communities, and the public.

Table 4.1 Natural Heritage Information Sources

Source	Information Available from Source
Ontario Ministry of Natural Resources and Forestry (MNR) Land Information Ontario (LIO)	Wetlands, woodlands, wildlife habitat, ANSI, Savannahs, Sand Barrens and Tall Grass Prairies, Provincial Parks and Conservation Reserves.
Ontario Ministry of Natural Resources and Forestry (MNR) Natural Heritage Information Centre (NHIC)	Wetlands, woodlands, ANSI's, provincial parks, conservation Reserves, species at risk.
Aquatic Species at Risk Distribution Maps	Aquatic species at risk habitat.
Ontario Ministry of Natural Resources and Forestry (MNR) Area of Natural and Scientific Interest Data Layer	ANSI.
Ontario Ministry of Natural Resources and Forestry (MNR) Significant Ecological Area Data Layer	Woodland, Wildlife Habitat.
Ontario Ministry of Natural Resources and Forestry (MNR) Wetland Data Layer	Evaluated and unevaluated wetlands.
Cataraqui Region Conservation Authority Regulated Areas Mapping	Watercourses and Wetlands regulated under the <i>Conservation Authorities Act</i> .

The Conservation Authority with jurisdiction over the Project Location is the Cataraqui Region Conservation Authority. The Project Location is within the boundary of the MNR Peterborough District Office.

During the REA process the Cataraqui Region Conservation Authority and MNR will be consulted, at which time, the records review will be updated. Other sources to be reviewed include Ontario Breeding Bird Atlas, Ontario Herpetofauna Atlas, Cataraqui Region Conservation Authority Natural Heritage Reports, and the Upper and Lower Tier Official Plans.

4.2.1.2 Results

A number of natural features within 120 m of the Project Location have been identified through the records review process and are summarized in Table 4.2.

Table 4.2 Identified Natural Heritage Features within 120 m of the Project Location

Natural Heritage Features Identified During the Records Review	Distance From Project
Wetlands	< 50 m
Woodlands	< 50 m
Habitat for Threatened and Endangered Species	< 50 m

Several wetlands, woodlands, and habitat for threatened and endangered species were identified at or within 120 m from the Project Location. There are no areas of natural and scientific interest (ANSIs), provincial parks or conservation areas located within 120 m the Project Location.

In addition to the records review, a site investigation is required to confirm the presence of the features identified during the records review. The site investigation area for solar projects includes an area within 50 m of the Project Location. Several woodlands and wetlands were identified within 50 m of the Project Location including the Lennox Hydro Provincially Significant Wetland (Table 4.2). Therefore, these features will be subject to a site investigation.

A set-back of 30 m has been identified from all potentially significant natural heritage features within and adjacent to the Project Location, including woodlands and wetlands. To date, none of the woodland features have been assessed for significance. Where the Project Location is less than 50 m from a wetland or woodland an evaluation of significance will be completed to determine whether development prohibitions apply. An evaluation of significance is required for identified woodland and wetland features within 50 m of the Project Location.

A NHA Report will be prepared and submitted to the MNRF for review and comment to allow MNRF to raise any additional considerations in the interest of preserving natural heritage.

An Environmental Impact Study (EIS) may be required if the evaluation of significance indicates that identified woodland and wetlands are significant. The purpose of the EIS will be to identify and assess any negative environmental effects of the proposed Project on the natural heritage feature and will also identify mitigation measures in respect of those effects. The EIS will be submitted to MNRF along with the NHA.

The Project could impact potential habitat for threatened and endangered species and will be a key topic of discussion during the MNRF consultation process. A Species at Risk addendum will be prepared and submitted to MNRF to address any issues related to species listed under the *Endangered Species Act, 2007*. Species specific fieldwork will be undertaken in 2015.

4.3 WATER BODY ASSESSMENT

A full Water Body Assessment Report that assesses negative environmental effects, mitigation measures and how an environmental management plan addresses the impacts, is required if the Project is within 120 m of the average annual high water mark of a permanent or intermittent stream, a lake (other than a Lake Trout lake) or a seepage area. The following surface water features are not considered water bodies under O. Reg. 359/09:

- grassed waterways;
- temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through;
- rock chutes and spillways;
- roadside ditches that do not contain a permanent or intermittent stream;
- temporarily ponded areas that are normally farmed;
- dugout ponds; or
- artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas.

4.3.1 Water Body Records Review

Table 4.3 identifies the data sources reviewed to date, to determine potential water bodies and surface water features within 120 m of the Project Location.

Table 4.3 Water Body Information Sources

Source	Information Available From Source
Ontario Ministry of Natural Resources and Forestry (MNR) Land Information Ontario (LIO)	Watercourses, water bodies, drainage features.
Ontario Ministry of Natural Resources and Forestry (MNR) Natural Heritage Information Centre (NHIC)	Watercourses, water bodies, drainage features.
Ontario Ministry of Natural Resources and Forestry (MNR) Watercourse and Water body Layer	Watercourses, water bodies.
Cataraqui Region Conservation Authority Regulated Areas Mapping	Watercourses and Wetlands regulated under the <i>Conservation Authorities Act</i> .
Aquatic Species at Risk Distribution Maps	Aquatic Species at Risk Habitat.

During the REA process the Cataraqui Region Conservation Authority and MNR will be consulted, at which time the records review will be updated.

4.3.2 Identified Water Bodies

A number of water bodies and surface water features within 120 m of the Project Location have been identified through the records review process and are summarized in Table 4.4.

Table 4.4 Identified Water Bodies and Surface Water Features within 120 m of the Project Location

Water Bodies and Surface Water Features Identified During the Records Review
Drainage ditches (sedimentation pond inflow and outflow)
Grassed Waterways
Sedimentation ponds
Natural Ponds
Streams (unnamed)

At least 17 drainage features including drainage ditches, grassed waterways, and streams are located within 120 m of the Project Location; an onsite assessment will be completed to determine whether these features meet the definition of water body as defined under O.Reg. 359/09. Many of these features are regulated by the Cataraqui Region Conservation Authority.

Five sedimentation ponds are situated within the Project Location; however, these features do not meet the definition of water body as defined under O.Reg. 359/09.

A Water Body Assessment Report would be required if the project is to be located within 120 m of a feature determined to be a water body. The report would identify and assess any negative environmental effects of the project on the water body and will identify mitigation measures in respect of those effects.

In general, the parts of the Project related to transmission lines and associated structures and to the roads, docks, water crossings, culverts, etc. associated with the Proposed Project facility may be allowed within 30 m of a water body or within the water body itself. However, parts of the proposed Project related to the generation equipment, storage facilities and transformer stations are not permitted within 30 m of a water body.

4.4 PRELIMINARY SCREENING OF POTENTIAL ENVIRONMENTAL EFFECTS

The following subsections outline an initial screening of potential environmental effects to natural features. During the REA process, avoidance and mitigation measures will be further developed and outlined in technical reports required within the REA process.

4.4.1 Air, Odour and Dust Emissions

Air, odour and fugitive dust will be emitted from construction vehicle exhaust and soil handling during construction and decommissioning activities. These emissions will be of relatively short duration and are unlikely to have any long-lasting effects on the surrounding area. Emissions will be reduced by the use of newer excavation and grading equipment with more efficient engine technologies, and by the use of controls, such as:

- periodic watering of unpaved (non-vegetated) areas;
- seed/re-vegetate exposed soil as soon as possible;
- limiting the speed of construction vehicular travel; and
- cover all trucks hauling excess material.

4.4.2 Noise Emissions

The operation of heavy equipment and other vehicle traffic will generate some noise during construction and decommissioning activities. However, all construction and decommissioning activities will be carried out in compliance with Town of Greater Napanee Noise Control Bylaws, including the potential restriction of working hours for noise generating activities unless a variance from noise by-law restrictions is obtained.

Solar panels will not generate noise; however, inverters and transformers will generate noise during Project operation. As part of the REA process an Acoustic Assessment Report will be prepared to ensure the Project will operate in compliance within Provincial Regulations.

4.4.3 Sewage and Stormwater Management

During construction and decommissioning activities portable toilets and wash stations will be provided by construction contractor(s) to collect sanitary waste generated by workers.

Existing drainage patterns within the Project Location will be maintained through the use of ditches and culverts, as required, and the requirement for additional stormwater management measures will also be assessed during detailed project design within the REA process.

4.4.4 Water-Taking Activities

Project activities are not expected to require significant quantities of water during the Project lifetime. It is expected that as required, water from the Lennox GS will be used; however, during the REA process the requirement for a permit to take water (PTTW) will be considered. In addition, buried cable trench excavation activities during construction are not expected to be below the water table.

4.4.5 Local Interests, Land Use, Resources and Infrastructure

The Project will be constructed on lands currently designated industrial in the Town of Greater Napanee Official Plan within the Lennox Industrial Development Area (LIDA). Lands within the LIDA are to be used for electrical power generation amongst other uses.

Potential environmental effects to land use, resources and provincial and local infrastructure (e.g., local traffic, local roads, utility infrastructure and recreation areas) are not currently anticipated; however, further assessments will be completed within the REA process, including consultation with the local municipality.

4.4.6 Public Health and Safety

Potential impacts to public health and safety are anticipated to be minimal, but do include air, dust and noise emissions as outlined in Sections 4.4.1 and 4.4.2.

Potential safety issues could arise from increased traffic during construction and decommissioning activities. The local municipality will be consulted within the REA process to determine appropriate mitigation measures to minimize potential effects; however, traffic increases will be of short duration and localized to the Project Location.

The Project will be constructed, operated and decommissioned within fenced areas with gated access roads; therefore, potential impacts to public safety within the Project Location are not anticipated.

4.4.7 Area Protected Under the Provincial Plan and Policies

The Project Location does not fall within any parts of land protected under the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan, the Niagara Escarpment Plan or the Lake Simcoe Watershed Plan, therefore no impacts are expected to occur to areas protected under provincial plans and policies.

4.4.8 Construction

Wetlands and Woodlands: There are wetlands and woodlands within the Project study area and some disturbances may occur from increases to local traffic, human activity and dust. However, disturbances will be of relatively short duration and are unlikely to have any long-lasting effects on wetlands and woodlands and the mammals, birds, reptiles and amphibians that inhabit them.

There is no anticipated direct loss of woodland or wetland habitat as construction is proposed in an agricultural field and a cultural meadow. During construction of the access roads, laydown areas and transmission lines there may be some limited disturbance to wildlife that inhabit ditches or hedgerows. However, low volumes of traffic and post-construction activity will allow for the reestablishment of these habitats in the vicinity of any disturbed areas.

During construction activities, vehicles and construction equipment requiring fuel, lubricating oils, or other industrial fluids will be present on the Project Location. Accidental fluid spills have the potential to impact wetlands and woodlands; however, with the implementation of a site specific environmental management plan and best management practices, any potential effects from an accidental spill would be short term in nature and have negligible negative environmental effects.

Water Bodies: Construction activities could affect surface water quality through the erosion of soil from construction equipment and soil excavation activities. Mitigation measures will be identified within the Construction Plan Report to prevent adverse effects to surface water from erosion and run-off. Erosion control measures will be maintained for the duration of construction activities and into the operations period until vegetation has established on the site.

4.4.9 Operation

Wetlands and Woodlands: Disturbance to woodland and wetland features and the wildlife that inhabit them resulting from Project operation is expected to be minimal.

The potential for accidental fluid spills is minimal during Project operation as major equipment is not required during routine maintenance activities. Through the implementation of best management practices, any potential effects from an accidental spill would be short term in nature and have negligible negative environmental effects.

Water Bodies: During routine maintenance activities the Project Location will be visually inspected for signs of erosion and if required actions will be taken to repair drainage patterns. In addition, within the REA process the requirement for a stormwater management plan will be assessed. Accidental fluid spills are unlikely, and through the implementation of best management practices, any potential effects from an accidental spill would be minimal.

4.4.10 Decommissioning

Wetlands and Woodlands: There are wetlands and woodlands within the Project study area and some disturbances may occur from increases to local traffic, human activity and dust. However, disturbances will be of relatively short duration and are unlikely to have any long-lasting effects on wetlands and woodlands and the mammals, birds, reptiles and amphibians that inhabit them.

During decommissioning activities, there may be some limited disturbance to wildlife that inhabit ditches or hedgerows. However, low volumes of traffic and post-decommissioning activity will allow for the reestablishment of these habitats in the vicinity of any disturbed areas.

During decommissioning activities, vehicles and equipment requiring fuel, lubricating oils, or other industrial fluids will be present on the Project Location. Accidental fluid spills have the potential to impact wetland and woodlands; however, with the implementation of best management practices, any potential effects from an accidental spill would be short term in nature and have negligible negative environmental effects.

Water Bodies: Decommissioning activities could affect surface water quality through the erosion of soil from construction equipment and soil excavation activities. Mitigation measures will be identified within Decommissioning Plan Report to prevent adverse effects to surface water from erosion and run-off. Erosion control measures will be maintained for the duration of decommissioning activities.

5.0 REFERENCES

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