Preliminary Project Description Report

Kinghaven Solar Facility

Kinghaven Farms Ltd.

22 June 2026

→ The Power of Commitment

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S4	02	Erika Eves	Shannon McNeill		Blair Shoniker		6/22/2026

GHD
Contact: Shannon McNeill, Senior Environmental Infrastructure Lead | GHD
455 Phillip Street, Unit 100A
Waterloo, Ontario N2L 3X2, Canada
T +1 519 884 0510 | **E** info-northamerica@ghd.com

Executive summary

Kinghaven Farms Limited (the "Proponent") owns and operates a farm and greenhouse in King Township, York Region, Ontario. The Proponent is proposing to develop a 1.99 MW solar energy facility on this farm to power an adjacent greenhouse. The site comprises 4.97 ha and is bounded to the north by King Road, to the south by a tributary of the East Humber River, to the east by 7th Concession Line, and to the west by agricultural lands. The site is immediately south-west of the Oak Ridges Moraine, within the greater Humber River's watershed and is under the jurisdiction of the Toronto and Regional Conservation Authority (TRCA). It is also located within the rural lands of the Greenbelt Protected Countryside.

The proposed solar energy facility development (the Project) is classified as a Class 3 project according to O. Reg. 359/09, Section 4 and will require a Renewable Energy Approval (REA). This Project Description Report (PDR) has been prepared in accordance with Item 10. of Table 1 in O. Reg. 359/09. The PDR is intended to be updated throughout Project development; subsequent versions will include a date to identify the publishing date. The requirements of the PDR are outlined in Table E-1 below:

Table E.1 Project Description Report Requirements (as per O. Reg. 359/09)

Content	Corresponding PDR Section
Any energy sources to be used to generate electricity at the renewable energy generation facility.	Section 2
The facilities, equipment or technology that would be used to convert the renewable energy source or any other energy source to electricity.	Section 4
The class of the renewable energy generation facility.	Section 2
The activities that will be engaged in as part of the renewable energy project.	Section 5
The name plate capacity of the renewable energy generation facility.	Section 2
The ownership of the land on which the Project Location is to be situated.	Section 2
Any negative environmental effects that may result from engaging in the project.	Section 6 Section 7.2
An unbound, well-marked, legible and reproducible map that is an appropriate size to fit on a 215 millimeter (mm) by 280 mm page, showing the Project Location and the land within 300 m of the Project Location.	Appendix A

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Acronyms

AA	Archaeological Assessment
ANSI	Areas of Natural and Scientific Interest
E.g.	Example
EAA	Environmental Assessment Act
EASR	Environmental Activity and Sector Registry
EPA	Environmental Protection Act
ESA	Endangered Species Act
Ha	Hectares
IESO	Independent Electricity System Operator
km	Kilometre
kV	Kilovolt
Ltd.	Limited
m	Metre
Mbgs	Metres below ground surface
MCM	Ministry of Citizenship and Multiculturism
MECP	Ministry of Environment, Conservation and Parks
Mm	Millimetre
MNR	Ontario Ministry of Natural Resources
MW	Megawatt
NHA	Natural Heritage Assessment
O. Reg.	Ontario Regulation
PDR	Project Description Report
PTTW	Permit to Take Water
REA	Renewable Energy Approval
S & G	Standards and Guidelines
SAR	Species at Risk
TRCA	Toronto and Regional Conservation Authority

1. Introduction

1.1 Project overview

Kinghaven Farms Limited (the Proponent) is proposing the development of a 1.99 megawatt (MW) solar energy generating facility (the Project) to power a greenhouse on the Proponent's farm in the Township of King, York Region, Ontario. The Project will require a Renewable Energy Approval (REA) as per Ontario Regulation (O. Reg.) 359/09 - *Renewable Energy Approvals* under Part V.0.1 of the Act, under the *Environmental Protection Act, R.S.O. 1990, c. E.19* (EPA).[1]

The Proponent is proposing to develop, construct and operate the Project on approximately 4.97 hectares (ha; 12.28 acres) of the 71.79 ha (177.4 acres) property of agricultural and treed land to power a greenhouse on the property. The Proponent has retained GHD Limited (GHD) to prepare a REA application, as required under O. Reg. 359/09. The proposed solar facility would be considered a Class 3 Solar Facility under O. Reg. 359/09, s. 4.

1.2 Report requirements

This Project Description Report (PDR) is one component of the REA application for the Project and has been prepared in accordance with O. Reg. 359/09, and the Ministry of the Environment, Conservation and Parks (MECP)'s Technical Guide to Renewable Energy Approvals (2023)[2]. Table 1 summarizes the requirements of this report as specified under O. Reg. 359/09.

Table 1 Project Description Report Requirements (as per O. Reg. 359/09 – Table 1)

Content	Corresponding PDR Section
Any energy sources to be used to generate electricity at the renewable energy generation facility.	Section 2
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An unbound, well-marked, legible and reproducible map that is an appropriate size to fit on a 215 millimeter (mm) by 280 mm page, showing the Project Location and the land within 300 m of the Project Location.	Appendix A

[1] Government of Ontario. O. Reg. 359/09: RENEWABLE ENERGY APPROVALS UNDER PART V.0.1 OF THE ACT. **https://www.ontario.ca/laws/regulation/090359#BK5**

[2] Government of Ontario. November 2023. Technical Guide to Renewable Energy Approvals. **https://www.ontario.ca/document/technical-guide-renewable-energy-approvals-0**

1.3 Contact information

Contact information for the Proponent is as follows:

Name	Greg Willmot
Title	Vice President
Company	Kinghaven Farms
Address	12945 Concession Road 7, King City, ON,
Phone #	416-475-4487
Email	greg@havengreens.ca
Project Website	https://kinghavenfarms.com/

The lead consultant for preparation of the REA Application is GHD. GHD provides professional consulting services in engineering, architecture, environmental sciences, digital transformation, and construction services. They specialize in water, energy, and urbanization, offering advisory services, project management, and sustainable waste management solutions to public and private clients. The consultant's office and Project contact is:

Name	Shannon McNeill
Title	Project Manager, Senior Environmental Infrastructure Lead
Company	GHD
Address	70 York Street, Toronto, ON, M5J1S9
Phone #	905-247-8736
Email	shannon.mcneill@ghd.com

2. Key project information

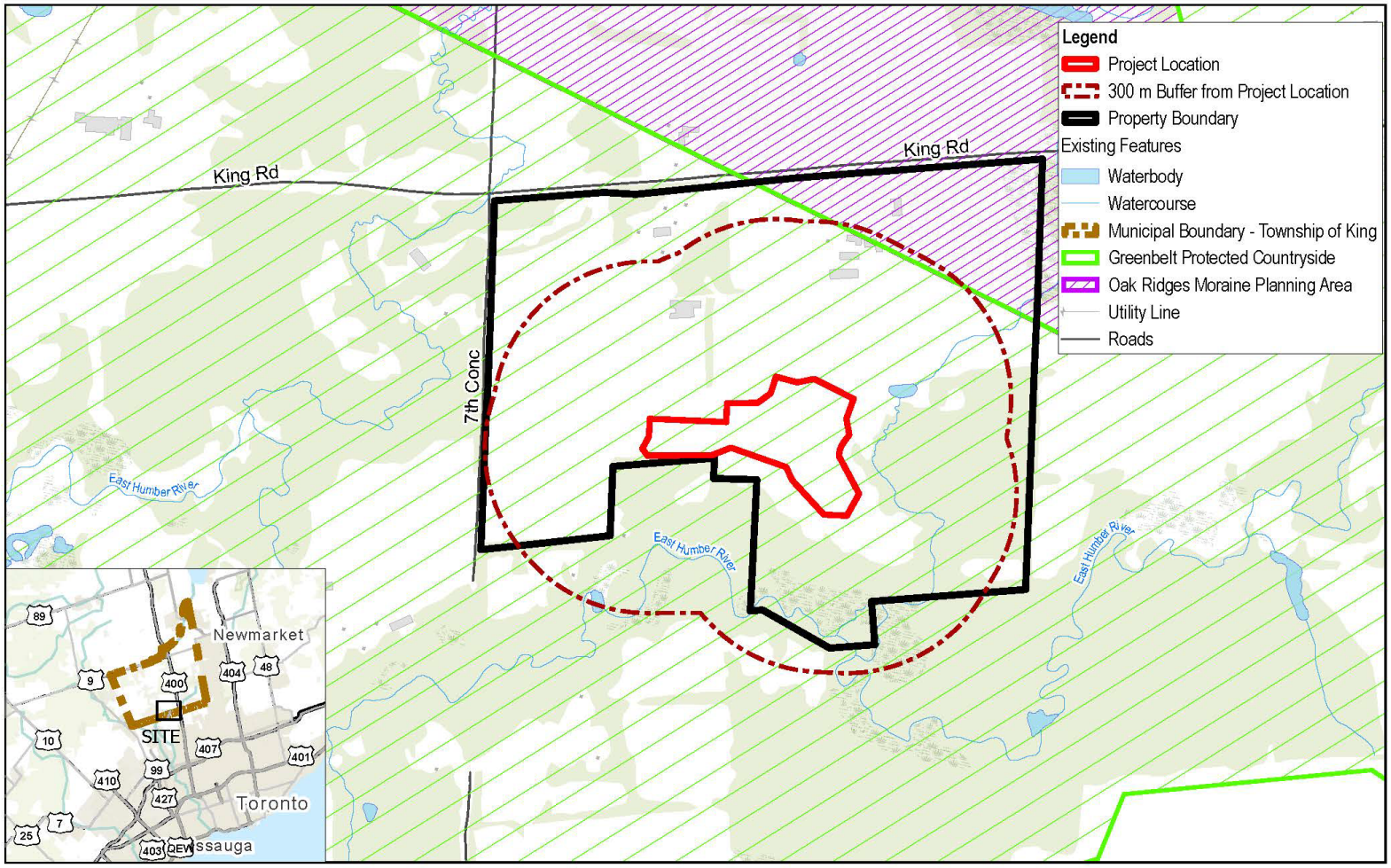
Table 2 Key Project Information

Proponent	Kinghaven Farms Limited (Ltd.)
Project Location	12945 Concession Road 7, King City, ON
Land Ownership	Privately owned farm and greenhouse
Legal Description of Land Parcel	Bounded to the north by King Road, to the south by a tributary of the East Humber River, to the east by 7th Concession Line, and to the west by agricultural lands.
Energy Source	Solar Energy
Nameplate Capacity	1.99 MW
Class of Facility	Class 3 Solar Energy Facility

Requirements set out in *O. Reg. 359/09, section 57.2*	The proposed project is a Class 3 solar energy facility under Ontario Regulation 359/09, consisting of a ground-mounted solar photovoltaic system with a nameplate capacity of 1.99 MW. The proposed facility is intended to supply electricity to an adjacent greenhouse owned and operated by the Client. The system will function as a parallel, grid-connected load displacement project, whereby all electricity generated will be used on-site to offset facility demand. While the system will remain connected to the grid to allow for supplemental power draw as needed, no electricity generated by the facility will be exported or supplied to the grid. Electricity generated by the facility is not anticipated to exceed the on-site electricity demand over the operating life of the project, and no participation in IESO-administered procurement programs or long-term electricity supply contracts is proposed.
Requirements set out in O. Reg. 359/09, section 57.4	The proposed facility has been developed in alignment with the requirements of Section 57.4 of Ontario Regulation 359/09, which requires proponents to demonstrate that the use of land for the renewable energy project is not prohibited by applicable municipal zoning by-laws or zoning orders under the Planning Act. The proponent has obtained written confirmation from the Township of King verifying that the proposed solar energy facility is a permitted use at the Project Location. The Project has been sited within existing agricultural lands associated with the Kinghaven Farms property and has been designed to support on-farm diversified uses, specifically the generation of renewable electricity to power the adjacent greenhouse operations. Through this approach, and by securing the required municipal confirmation, the Project demonstrates conformity with local land use planning controls and satisfies the intent and requirements of Section 57.4 of O. Reg. 359/09. The subject lands are subject to site-specific Zoning By-law Amendments approved by the Township of King (By-law Nos. 2023-071 and 2023-072), which establish tailored permissions and performance standards for the property. These amendments permit greenhouse uses, apiaries, and limited ground-mounted solar panels as on-farm diversified uses, while introducing site-specific provisions including a maximum lot coverage of 7.5%, a 185 m setback from King Road, and a reduced parking requirement of 30 spaces.
Proponent Contact Information	Greg Willmot Vice President Kinghaven Farms 12945 Concession Road 7, King City, ON, 416-475-4487 greg@havengreens.ca https://kinghavenfarms.com/
Consultant Contact Information	Shannon McNeill Senior Environmental Infrastructure Lead GHD 70 York Street, Toronto, ON M5J 1S9 Phone: 905-247-8736 Email: shannon.mcneill@ghd.com

2.1 Project location

The Project Location covers an area of approximately 4.97 ha (12.28 acres), and is located in the Township of King, York Region, Ontario. The Project site is comprised of agricultural and treed land, on the Proponent's farm, bounded to the north by King Road, to the south by a tributary of the East Humber River, to the east by 7th Concession Line, and to the west by agricultural lands. The site is located immediately south-west of the Oak Ridges Moraine, within the greater Humber River's watershed and is under the jurisdiction of the Toronto and Regional Conservation Authority
(TRCA); however, it is currently anticipated that the project will be located outside of TRCA Regulated Areas. It is also located within the rural lands of the Greenbelt Protected Countryside. A map showing the location of the Project is provided in Figure 1.



Paper Size ISO A4

0 100 200 300

Meters

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 1983 UTM Zone 17N

N

GHD

KINGHAVEN SOLAR FARM

PROJECT LOCATION

Project No. 12605588
Revision No. -
Date Jun 18, 2026

FIGURE 1

Q:\GIS\PROJECTS\12605000s\12605588\GIS\Maps\Deliverables\12605588_GIS001_SiteLocation\12605588_GIS001_SiteLocation.aprx - 12605588_001_Project Location
Print date: 18 Jun 2026 - 15:09

Data source: Ontario GeoHub, File Geodatabase Composite datasets; Open Data; Contains information licensed under the Open Government Licence – Ontario Created by: ytong2

Figure 1 *Proposed Solar Energy Facility Project Location*

The term “Project Location” is defined by O. Reg. 359/09 as:

> *“a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project” (O. Reg. 359/09, section (s.) 1).”*

A 300 m buffer surrounding the Project Location has been applied to Figure 1 as outlined in O. Reg. 359/09 and the MECP’s *Technical Guide to Renewable Energy Approvals* (2023). This buffer has been applied for visual purposes only and does not create any new obligations or change the land use for associated neighboring lands outside the Project Location. The current Project Location generally consists of the parcel boundary on which the solar facility will be located. The Project Location has been refined to optimize the Project and minimize environmental effects, as determined following field studies and Project layout design.

3. Authorizations potentially required

The potential provincial and municipal permits, approvals, and agreements (collectively referred to as the Authorizations) which may be required for this Project are discussed below. As the Project studies progress, this information will be updated as required.

3.1.1 Provincial authorizations

The Project must receive a REA from the MECP. The REA application includes confirmation from the Ministry of Natural Resources (MNR) and the Ministry of Citizenship and Multiculturism (MCM) that these ministries are satisfied with specific reports included in the application. In addition, at the provincial level there are multiple Authorizations that may be required to facilitate the development of the Project. Their ultimate applicability will be determined during the REA process and based upon the Project’s detailed design. Table 3 lists key permits and authorizations that may be required in addition to the REA.

Table 3 Key Provincial Permits and Authorizations

Administering Agency	Key Permit / Authorization	Rationale
MECP	An approval/authorization under the *Endangered Species Act* (ESA, 2007) or *Species Conservation Act* (not yet in force).	Species and their habitats listed as threatened or endangered under the ESA may be impacted by the project. Additional species surveys or permitting or registration requirements may be identified through continued consultation with MECP.
	Approval under the *Fish and Wildlife Conservation Act, 1997*	Not applicable. In-water work is not proposed; therefore, fish collections/relocations are not required.
MNR	*Natural Heritage Assessment Confirmation	Confirms natural heritage features have been addressed according to O Reg. 359/09 requirements.
MCM	*Archaeological Clearance	Archaeological and heritage resources.
Electrical Safety Authority	Electrical Safety Code Certification	Electrical systems and connections will require inspection/Authorization.
Ministry of Labour	Notice of Project	Notify the Ministry of Labour prior to construction.
Electrical Safety Authority	Certificate of Inspection	Ensure work complies with the Ontario Electrical Safety Code.

*Indicates the permit and/or approval is part of the Renewable Energy Approval Application.

3.1.2 Municipal

The Proponent has consulted with the Township of King and York Region and identified key permits and authorizations that may be required in order to proceed with the Project. These are listed in Table 4.

Table 4 Key Municipal Permits and Authorizations

Key Permit / Authorization	Rationale
Road Use Agreement	May be required for use of roads to construct/operate the facility and for works in municipal road allowances.
Building Permit	May be required for compliance with building codes.
Entrance Permit	Required if an entrance from a municipal road is to be constructed.

3.1.3 Federal involvement

A Federal Environmental Assessment report is not expected to be required for the Project, as the Project is not listed in the Regulations Designating Physical Activities under the *Canadian Environmental Assessment Act, 1999* (EAA, 1999).

4. Project components and ancillary facilities

A description of the Project components, both temporary during construction and permanent during operation, are outlined below in Table 5 and Table 6, respectively.

Table 5 Description of Temporary Project Components

Component	Description
Construction Access Road	There is currently one primary access point off 7th Concession Rd.
Staging Areas	Temporary staging areas will be established to support construction activities, including construction trailers, portable toilets, waste containers, parking areas, equipment storage and maintenance, truck loading and unloading, and material laydown areas. The staging area will be setup in the northwestern portion of the Project Location and will be fully removed following construction.
Construction Equipment and Materials	Temporary use of construction equipment, delivery vehicles, cranes (if required), and material stockpiles associated with installation of solar panels, electrical equipment, and civil works.

Table 6 Description of Permanent Project Components

Component	Description
Solar Panels and Racking Systems	Solar photovoltaic panels will be installed and mounted on galvanized steel and/or aluminium racking systems. The system will be either fixed-tilt (20–40° tilt, south-facing) or single-axis tracking with a ±60° range of motion along a north–south axis.
Permanent Site Access and Internal Roads	An existing entrance from 7th Concession Rd will serve as the permanent site access.
Transformerless Inverters	Transformerless inverter stations will be distributed across the Project Location. Each station will include one or more inverters to convert DC electricity to AC electricity.
Collector System and Connection Line	Underground DC cables will collect electricity from the solar panels to the inverters via combiner boxes.

Component	Description
Operations and Maintenance Storage Area	A permanent operations and maintenance storage area will be established, consisting of compacted gravel and small permanent structures (e.g., storage containers on concrete pads) used to store maintenance equipment, spare parts, and spill response materials.
Perimeter Fencing	The facility will be enclosed by chain-link fencing to prevent unauthorized access.

5. Project activities

The following sections provide a summary of the Project activities for the pre-construction, construction, operating and decommissioning phases that will occur during the life cycle of the Project. Additional information regarding Project activities will be provided in separate reports that will form part of the REA Application. The timing of construction of the Project and succeeding activities is to be determined and will be based on the timing of the REA approval.

A general overview of the activities during construction, operation, and decommissioning phases of the Project are provided in Table 7.

Table 7 Key Project Activities

Project Phase	Activities
Construction	Site grading
	Access road preparation
	Installation of foundations and racking
	Panel installation
	Installation of inverters and equipment
	Installation of collector cables and connection line
	Reclamation of temporary work areas
	Site landscaping
Operation	Preventative maintenance
	Unplanned maintenance
	Meter calibrations
	Site/ground maintenance
Decommissioning	Disconnect the connection line from the distribution grid
	Removal of solar panel infrastructure
	Removal of inverters and equipment
	Removal of fencing, roads and site grading (dependent upon new proposed use)
	Excavation and removal of collector cables and foundations (up to 1 m depth below grade)
	Re-establishment of tile drainage system for agricultural purposes provided that land is intended to return to agricultural production.

5.1 Pre-construction

The primary activities associated with pre-construction include site surveys and investigations to verify existing conditions, utility locates, and environmentally sensitive features. This will involve development of environmental protection and mitigation measures such as erosion and sediment control, spill prevention, and waste management

plans, as well as the preparation of construction sequencing, access, traffic management, and staging logistics. Coordination with the local distribution utility will be undertaken to finalize interconnection requirements and scheduling, ensuring the site is fully prepared for construction to proceed in a controlled, compliant, and environmentally responsible manner.

Kinghaven will engage with Indigenous communities and consult with government agencies, as required, during the development of the site plans for the Project. For the permits and approvals listed in Section 3, GHD will work directly with the respective federal and provincial government authorities to ensure that all applicable requirements are met.

5.2 Project schedule

The schedule below in Table 8 provides an overview of the Project milestones:

Table 8 Estimated Project Milestones

Project Milestone	Estimated Date
Public Open House #1	Q3 2026
Natural Heritage & Water Site Investigations (multi-season)	Q2 – Q3 2026
Draft REA Package Review Period	Q3 2026
Final Open House (#2)	Q4 2026
Finalization of REA Reports	Q4 2026
Submission of REA Application	Q4 2026

6. Description of potential environmental effects

The following sections provide an overview of known existing environmental features and potential environmental effects that may result from the construction, operation and decommissioning of the Project. Preliminary assessment of potential environmental effects included the following activities:

– Collected information on the existing environment using available background information, consultation with stakeholders, and site investigations.
– Reviewed proposed Project activities to predict the potential interactions between the Project and environment.
– Identified potential interactions that could cause an adverse effect on the environment.
– Developed measures to avoid, mitigate, and monitor potential adverse effects.

The REA process focuses on project-specific issues and potential negative effects as per O. Reg. 359/09 and includes the following:

– Heritage and Archaeological Resources
– Natural Heritage
– Water Bodies
– Air, Odour, Dust
– Noise
– Land Use and Resources
– Provincial and Local Infrastructure

– Public Health and Safety
– Areas Protected under Provincial Plans and Policies

Preliminary descriptions of the potential negative effects and mitigation measures for the Project during the construction, operation, and decommissioning phases are identified below. More detailed information will be provided as studies are completed throughout the REA process in accordance with the requirements of O. Reg. 359/09.

6.1 Cultural Heritage (protected properties, archaeological and heritage resources)

6.1.1 Cultural Heritage

6.1.1.1 Construction, operation and decommissioning

A Cultural Heritage Report will be completed, focusing on conducting and analyzing background research and field survey results for the purposes of identifying impacts of the proposed undertaking on any cultural heritage resources. The assessment is guided by the province's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (Criteria, 2022), *Heritage Toolkit* (2025), *REA Checklist: Consideration of Potential for Heritage Resources*, as per clause 23 (2) (a) of O. Reg. 359/09, and the MCM's REA Information Bulletin (2018).

Based on preliminary results of completing the *REA Checklist: Consideration of Potential for Heritage Resources*, the project footprint is located on a property that contains multiple structures and landscape elements that are more than 40 years old and has potential to have cultural heritage value or interest. The Cultural Heritage Report will confirm the presence of a heritage resource by applying the province's criteria set out in O. Reg. 359/09, and where applicable, evaluate the impact of the project on the heritage attributes and heritage values identified. As design progresses, an analysis will be undertaken to determine if any Project impacts may occur to the cultural heritage resource, with mitigation and recommendations to be provided as appropriate.

6.1.2 Archaeology

6.1.2.1 Construction, operation and decommissioning

Under O. Reg 359/09, subsection 21 (3), the Project must determine if there will be an impact to archaeological resources and then carry out an Archaeological Assessment (AA) in accordance with Section 22. A Stage 1 AA will evaluate potential for archaeological resources within or adjacent to the Project Location, adhering to the *Standards and Guidelines for Consultant Archaeologists* (S & G, 2011) administered by the MCM. The Project Location is understood to have been previously disturbed and in active agricultural use for approximately 150 years, which will be considered as part of the background review and assessment of archaeological potential. The results of the Stage 1 AA will be used to determine if any of the setbacks from O. Reg 359/09 apply. As Project design progresses, further analysis will be undertaken to determine whether Stage 2 archaeological investigations are warranted.

6.2 Natural Heritage

Natural heritage features within the Project Location and within 50 m of the Project Location have been identified and evaluated in accordance with Ontario Regulation 359/09, the *Natural Heritage Assessment Guide for Renewable Energy Projects* ("NHA Guide"; MNR 2012), and the *Technical Guide to Renewable Energy Approvals* (Ontario 2023). The records review and field investigations, conducted on April 28, May 26, June 17, and September 4, 2025, identified woodlands and wildlife habitat within 50 m of the Project Location. One woodland feature located adjacent to the Project Location was evaluated and confirmed as significant based on criteria set out in the NHA Guide. In addition, habitat for species of conservation concern, including Eastern Wood-Pewee and Wood Thrush, was identified within woodland ecosites near the Project Location. No provincially significant wetlands, unevaluated

wetlands, Areas of Natural and Scientific Interest (ANSI), or provincial parks or conservation reserves were identified within 50 m of the Project Location.

The Project Location is situated within the Greenbelt Protected Countryside and partially within the Oak Ridges Moraine area. As such, additional consideration has been given to natural heritage features protected under applicable provincial plans. Site investigations confirmed that no additional natural features subject to development prohibitions under these plans occur within the Project Location or within the regulated setback distance.

A Natural Heritage Assessment has been completed, including a records review, site investigations, evaluation of significance, and identification of potential negative environmental effects associated with the Project. Where significant natural features occur within 50 m of the Project Location, these features are carried forward to an Environmental Impact Study to identify appropriate mitigation measures. Consultation with relevant agencies, including the MNR, will be undertaken as part of the REA process.

6.2.1 Construction and decommissioning

Construction and decommissioning activities may have the potential to temporarily affect nearby natural heritage features through vegetation removal, habitat disturbance, soil compaction, noise, and increased human presence.

Potential effects to woodlands and wildlife habitat adjacent to the Project Location may include temporary displacement of wildlife and minor habitat alteration at the edges of features. These effects will be avoided or minimized through adherence to required setbacks, implementation of standard construction mitigation measures, and timing constraints where appropriate. No permanent encroachment into significant natural features is proposed.

6.2.2 Operation

Operational effects on natural heritage features are anticipated to be limited, as the Project does not involve moving components, elevated structures, or emissions. Potential effects may include localized changes in land cover, periodic maintenance activities, and the presence of fencing or access routes, which could influence wildlife movement or habitat use near the Project Location.

The potential for negative environmental effects on significant woodlands and wildlife habitat will be confirmed through the REA process and addressed through the Environmental Impact Study. Mitigation measures will be implemented as required to ensure that the Project does not result in unacceptable effects on natural heritage features or their ecological functions.

6.3 Impacts on surface water and ground water

6.3.1 Water takings

6.3.1.1 Construction and decommissioning

At this time, no routine water-taking activities are anticipated during construction or decommissioning of the Project. Hydrogeological investigations completed for the site (Hydrogeological and Geotechnical Investigation, 2023) indicate that groundwater is generally encountered at depths greater than typical excavation requirements for solar panel foundations and associated infrastructure. Monitoring wells installed across the site were predominantly dry, with localized groundwater seepage encountered only in isolated boreholes at depths of approximately 6 metres below ground surface (mbgs). Since groundwater seepage volumes are expected to be minor and that construction dewatering exceeding regulatory thresholds is not anticipated, no planned or recurring groundwater abstraction is required for construction, and no Permit to Take Water (PTTW) was identified as necessary at the time of reporting.

The REA Water Assessment prepared for the Project does not identify any proposed surface water or groundwater abstraction associated with construction, operation, or decommissioning of the Project. The Water Assessment further confirms that no water bodies occur within the Project Location and that the Project does not involve in-water works or

water-dependent activities that would necessitate water-taking under O. Reg. 359/09. In addition, the Project is a ground-mounted solar energy facility with no process water, cooling water, or operational water requirements. Electrical generation and associated infrastructure do not rely on water inputs during normal operation, and no ongoing or routine water use is proposed.

Should temporary groundwater seepage or perched water be encountered during construction (e.g., following storm events), any dewatering would be short-term and limited in volume. The need for dewatering, and any associated regulatory requirements under the EPA, including the Environmental Activity and Sector Registry (EASR) or PTTW, will be confirmed during detailed design and, if required, addressed prior to construction.

6.3.1.2 Operation

No groundwater abstraction is required during operation of the Project. Post-development infiltration will be maintained through site grading and stormwater management measures designed to support groundwater recharge and avoid adverse effects on the local groundwater regime.

6.3.2 Spills

6.3.2.1 Construction, operation and decommissioning

Some materials, such as fuel, lubricating oils and other fluids associated with equipment and machinery used during construction, maintenance and decommissioning activities have the potential for discharge to the environment through accidental spills. Accidental spills are expected to be spatially limited and short in duration. In the event of an accidental spill, work will be halted on site until it has been remedied. Best management practices to reduce spill likelihood and impact will be outlined in a Spills Response Plan as part of the Emergency Response Plan, in the Design and Operations Report for the Project.

Operating equipment containing hazardous material, and/or residual hazardous material will require secondary containment structures to protect the environment in case of an accidental release. Secondary containment requirements will be specified in the REA.

6.3.3 Surface water runoff

6.3.3.1 Construction and decommissioning

As previously mentioned, the Project is located within the Humber River watershed, under the jurisdiction of the TRCA, and outside of TRCA Regulated Areas. A tributary of the East Humber River is located south of the site; however, based on the Water Assessment conducted in accordance with O. Reg. 359/09, no water bodies are located within the Project Location or within the setback distances prescribed under sections 39, 40, 44, and 45 of the regulation. As such, no direct impacts to a water body or to land within 30 metres of a water body are anticipated as a result of surface water runoff.

During construction and decommissioning, temporary ground disturbance and localized soil exposure have the potential to alter surface water runoff patterns and increase the risk of sediment-laden runoff. These effects are expected to be short-term and reversible. Hydrogeological and geotechnical investigations completed for the site included an assessment of site drainage conditions and a water balance analysis comparing pre-development and post-development scenarios. The assessment identified that changes in surface conditions could increase runoff if unmanaged; however, the implementation of infiltration-based measures and erosion and sediment controls is expected to mitigate these effects and maintain runoff conditions consistent with pre-development drainage patterns. Further mitigation strategies are described in the Construction Plan Report and Design and Operations Report, which will address construction-phase stormwater management through standard erosion and sediment control measures, including minimizing disturbed areas, stabilizing exposed soils, and directing runoff away from sensitive features. Stormwater will be managed on-site, and no discharge of stormwater or sewage to surface water bodies is proposed.

Decommissioning activities are anticipated to be similar in nature to construction, involving temporary disturbance associated with removal of infrastructure. Surface water runoff during decommissioning would likewise be managed through erosion and sediment control measures consistent with those applied during construction, and no long-term changes to runoff quantity or quality are anticipated following site restoration.

6.3.3.2 Operation

During operation, the Project consists of a ground-mounted solar energy facility with limited impervious surfaces. Any surface water runoff during operation will be managed through passive drainage and infiltration consistent with existing site conditions. The Hydrogeological and Geotechnical Investigation (2023) demonstrates that post-development runoff can be managed to maintain pre-development water balance conditions through infiltration-based measures, thereby minimizing changes to runoff quantity and reducing the potential for downstream effects on surface water features.

Given the absence of water bodies within regulated setback distances and the lack of direct discharge points, no significant negative environmental effects related to surface water runoff are anticipated during the operational phase of the Project.

6.3.4 Water bodies

6.3.4.1 Construction, operation and decommissioning

The Water Assessment identified the presence of water bodies within and adjacent to the Project Location and to assess the potential for interaction with surface water features. The Assessment confirmed that no water bodies are located within the Project Location, and that the nearest water feature, a tributary of the East Humber River, is located outside the setback distances prescribed under sections 39, 40, 44, and 45 of O. Reg. 359/09.

As no water bodies occur within regulated setback distances and no in-water works or discharges are proposed, no direct interaction with aquatic habitat is anticipated during construction, operation, or decommissioning of the Project. Accordingly, aquatic habitat surveys beyond those completed as part of the Water Assessment were not required, and no Water Body Report was triggered under O. Reg. 359/09.

6.3.5 Groundwater

6.3.5.1 Construction and decommissioning

Hydrogeological and geotechnical investigations completed for the site characterized subsurface conditions and assessed groundwater levels, which determined that groundwater was generally encountered at depths greater than those associated with typical solar facility construction activities, with localized seepage observed only in isolated boreholes at depths of approximately 6 mbgs. Based on these findings, no routine groundwater-taking activities are anticipated during construction or decommissioning. While minor, short-term dewatering may be required as a contingency should localized seepage be encountered, groundwater abstraction volumes are not expected to exceed regulatory thresholds, and no planned or recurring water-taking is proposed. This conclusion will be confirmed during the REA process and refined, if necessary, during detailed design.

6.3.5.2 Operation

No groundwater-taking activities are planned as part of the operation of the Project. The Design and Operations Report confirms that the Project does not require process water, cooling water, or other operational water inputs. Electrical generation and associated infrastructure do not rely on groundwater resources, and no ongoing groundwater abstraction is proposed during normal facility operation.

6.4 Emissions to air including odour and dust

6.4.1.1 Construction and decommissioning

During construction, specific maintenance activities, and decommissioning of the Project, potential effects from odour and dust will be intermittent. Air emissions from construction vehicles and equipment (e.g., vehicle exhaust and road dust) will be localized, short-term and intermittent and are expected to have negligible adverse residual effects on ambient air quality. Typical mitigation measures will be employed such as maintaining vehicles in good working order and, where possible construction equipment would be equipped with emission control devices. Dust emissions would be reduced through standard construction mitigation techniques (e.g., watering for dust).

6.4.1.2 Operation

During operations minor localized air emissions would occur from the periodic use of personnel vehicles and maintenance equipment over the life of the Project; however, effects are anticipated to be intermittent, of short duration, and highly localized.

6.5 Noise

6.5.1.1 Construction and decommissioning

During construction of the Project, noise would be generated by the operation of heavy equipment and associated vehicular traffic at the Project Location and on haul routes. Noise impacts will be localized, temporary, and will be focused during daylight hours. Application of the recommended mitigation measures, outlined in the Construction Plan Report, during construction should limit noise emissions to the general vicinity of the work areas.

6.5.1.2 Operation

Operation of the Project will result in some noise emitted from inverters, though these impacts are expected to be negligible. A Noise Study Report will be prepared for the Project in accordance with O. Reg. 359/09 and NPC-300 and submitted as part of the REA application.

6.6 Local interests, land use and infrastructure

6.6.1 Land use and resources

6.6.1.1 Construction, operation and decommissioning

The Project is located on privately owned agricultural land associated with an existing farm and greenhouse operation in King Township. The Project Location comprises agricultural and treed lands, with surrounding land uses including agricultural lands, rural residential properties, and existing transportation corridors. The Project is compatible with existing land uses and does not require permanent changes to surrounding land use patterns. Construction and decommissioning activities will be temporary in nature and confined to the Project Location. During operation, the solar facility will occupy a limited footprint and will not preclude the continued use of adjacent lands for agricultural purposes.

No significant negative environmental effects related to land use or land-based resources are anticipated during construction, operation, or decommissioning. The Proponent will comply with applicable municipal planning requirements and coordinate with the Township of King, as required, to ensure consistency with local land use policies and approvals.

6.6.2 Provincial and local infrastructure

6.6.2.1 Construction and decommissioning

Infrastructure use during construction and decommissioning is expected to be limited primarily to existing municipal roadways providing access to the site. No new or expanded municipal services are anticipated as part of the Project.

Potential negative effects on provincial and local infrastructure are expected to be limited to short-term, localized increases in traffic volumes and the use of roads by construction vehicles and equipment. These effects may include temporary traffic congestion, minor disruptions to traffic flow, and localized wear on road surfaces. Construction-related traffic will be associated with a limited and defined workforce and will occur over a finite period.

Standard traffic management practices will be implemented, as required, to maintain road safety and minimize disruption during construction and decommissioning activities.

6.6.2.2 Operation

During operation, activities at the Project Location will be limited to routine inspection, maintenance, and occasional repair of solar facility components. These activities will require infrequent access by maintenance vehicles using existing local road infrastructure.

Operations-related traffic volumes are expected to be minimal and will generally occur during regular business hours. As a result, operational traffic is unlikely to disturb traffic patterns, increase traffic volumes in a measurable way, or result in negative effects on provincial or local infrastructure. With the exception of infrequent major maintenance activities, any effects on infrastructure during operation are anticipated to be intermittent, short-term in duration, and highly localized.

6.7 Public health and safety

6.7.1.1 Construction and decommissioning

The Project is anticipated to pose minimal risk to public health and safety during construction and decommissioning, as there is potential for short-term, localized public safety risks related to traffic interactions and on-site construction activities. To mitigate these risks, access to the Project Location will be controlled, and appropriate perimeter fencing and site security measures will be implemented to prevent unauthorized access to areas where hazards may be present. The activities will be conducted in accordance with applicable health and safety requirements and standard industry practices.

The Proponent will coordinate with the Township of King, as required, to address any public safety considerations related to construction traffic, road use, or site access, and to ensure that potential risks to the public are appropriately managed.

6.7.1.2 Operation

The passive electricity-generation facility does not produce emissions to land or water that could pose a risk to human health. The Project also does not involve the use of hazardous substances during normal operation, and no process water or wastewater is generated. Any noise emissions associated with routine operation are expected to remain within applicable regulatory limits, and operational activities will be limited to periodic inspection, maintenance, and repair.

An Emergency Response and Communications Plan will be prepared as part of the Design and Operations Report and communicated to Project staff and relevant local emergency services, as applicable. The Plan will outline procedures for responding to incidents such as fire, personal injury, or accidental spills, and will include protocols for communication with emergency responders and the public, if required.

6.8 Areas protected under provincial plans and policies

6.8.1.1 Construction, operation and decommissioning

The Project Location is situated within lands regulated under the Greenbelt Act, 2005, and is located within the Protected Countryside designation of the Greenbelt Plan. Portions of the Project Location are also situated within the Oak Ridges Moraine Conservation Plan Area, including lands designated as Natural Linkage Area.

The NHA confirmed that no development-prohibited features (including provincially significant wetlands, Areas of Natural and Scientific Interest, or other protected natural features identified under the Greenbelt Plan or Oak Ridges Moraine Conservation Plan) occur within or adjacent to the Project Location that would preclude development.

Construction, operation, and decommissioning of the Project will be undertaken in accordance with the policies of the Greenbelt Plan and Oak Ridges Moraine Conservation Plan, and with the implementation of appropriate mitigation measures, no significant negative environmental effects on lands protected under provincial plans and policies are anticipated.

6.8.1.2 Summary of environmental effects

A summary of the potential environmental effects, mitigation measures and residual impacts is provided in Table 9 below. The expected environmental effects in result of Project activities will be provided at a later date in the Construction Plan Report and Design and Operations Report, following the completion of all field work activities. Potential environmental effects at the Project Location and within 300 m of the Project Location will be discussed.

Table 9 Potential Environmental Effects, Mitigation Measures and Residual Impacts

Environmental Feature	Potential Effect as a Result of Construction, Operation and Decommissioning	Mitigation Measures	Residual Impacts
Cultural Heritage (Protected Properties, Archaeological and Heritage Resources)	– Potential impacts to cultural heritage resources may occur as design progresses, where the Project footprint contains structures and landscape elements more than 40 years old with potential cultural heritage value or interest – Potential impacts to archaeological resources may occur, subject to the results of Archaeological Assessment	– Completion of a Cultural Heritage Report guided by provincial criteria and REA requirements – Application of O. Reg. 359/09 criteria to confirm presence of heritage resources – Evaluation of impacts on heritage attributes and values – Mitigation and recommendations to be provided as appropriate – Completion of Stage 1 Archaeological Assessment and determination of need for Stage 2 investigations	– Not yet determined – To be confirmed through Cultural Heritage Report and Archaeological Assessment
Natural Heritage	– Temporary effects during construction and decommissioning may include vegetation removal, habitat disturbance, soil compaction, noise, increased human presence, temporary displacement of wildlife, and minor habitat alteration at feature edges – During operation, potential localized changes in land cover, periodic maintenance activities, and presence of fencing or access routes may influence wildlife movement or habitat use	– Adherence to required setbacks – Implementation of standard construction mitigation measures – Timing constraints where appropriate – No permanent encroachment into significant natural features – Preparation of an Environmental Impact Study where significant features occur within 50 m – Consultation with relevant agencies	– With mitigation, the Project is not expected to result in unacceptable effects on natural heritage features or their ecological functions
Impacts on Surface Water and Ground Water	– Temporary disturbance during construction and decommissioning may alter runoff patterns and increase risk of sediment-laden runoff; accidental spills of fuels or lubricants could occur – No routine surface water or groundwater abstraction is anticipated during any phase – No in-water works or direct interaction with water bodies	– Infiltration-based stormwater management measures – Erosion and sediment control measures – Spill prevention best management practices and Spills Response Plan – Secondary containment for equipment containing hazardous materials – Confirmation of regulatory requirements during detailed design	– No significant negative environmental effects related to surface water runoff or groundwater are anticipated during construction, operation, or decommissioning

Environmental Feature	Potential Effect as a Result of Construction, Operation and Decommissioning	Mitigation Measures	Residual Impacts
Air, Odour and Dust	– During construction, maintenance, and decommissioning, intermittent, localized, short-term air emissions, dust, and odour from vehicles and equipment – During operation, minor localized emissions from periodic use of vehicles and maintenance equipment	– Maintaining vehicles in good working order – Use of emission control devices where possible – Standard dust control measures such as watering	– Negligible adverse residual effects on ambient air quality
Noise	– During construction and decommissioning, localized and temporary noise from heavy equipment and traffic – During operation, some noise from inverters	– Implementation of mitigation measures outlined in the Construction Plan Report; preparation of a Noise Study Report in accordance with O. Reg. 359/09 and NPC-300	– Construction noise limited to general vicinity of work areas – Operational noise impacts expected to be negligible
Local Interests, Land Use and Infrastructure	– Temporary construction and decommissioning activities confined to the Project Location – Short-term localized traffic increases and minor road wear during construction – Minimal traffic during operation; no permanent changes to surrounding land use patterns	– Compliance with municipal planning requirements – Coordination with the Township of King; use of existing municipal roadways – Implementation of standard traffic management practices	– No significant negative environmental effects related to land use, land-based resources, or infrastructure are anticipated
Public Health and Safety	– Short-term, localized public safety risks during construction and decommissioning related to traffic and on-site activities – During operation, no emissions to land or water, no hazardous substances used during normal operation	– Controlled site access – Perimeter fencing and site security – Compliance with health and safety requirements – Coordination with Township of King – Preparation and implementation of an Emergency Response and Communications Plan	– Minimal risk to public health and safety is anticipated during all Project phases
Areas Protected under Provincial Plans and Policies	– Project located within the Greenbelt Protected Countryside and partially within the Oak Ridges Moraine Conservation Plan Area – No development-prohibited features identified that would preclude development	– Compliance with the Greenbelt Plan and Oak Ridges Moraine Conservation Plan – Implementation of appropriate mitigation measures	– No significant negative environmental effects on lands protected under provincial plans and policies are anticipated

7. Summary and conclusions

7.1 General design and siting considerations

The primary mitigation approach for the Kinghaven Solar Facility is the avoidance and minimization of potential environmental effects through careful site selection, Project layout refinement, and adherence to regulatory setback requirements. The Project Location has been refined during early design to optimize solar development while reducing interactions with natural heritage features, water resources, and surrounding land uses.

Records review and multi-season field investigations identified woodlands and wildlife habitat within 50 m of the Project Location, including one woodland confirmed as significant. No provincially significant wetlands, unevaluated wetlands, Areas of Natural and Scientific Interest, provincial parks, or conservation reserves were identified within or adjacent to the Project Location. The Project layout avoids encroachment into significant natural features and maintains required setbacks in accordance with O. Reg. 359/09 and applicable provincial plans.

Hydrogeological and water assessments confirmed that no water bodies are located within the Project Location or within the regulatory setback distances prescribed under O. Reg. 359/09. A tributary of the East Humber River is located south of the site but outside regulated setbacks. The Project does not involve in-water works, water-dependent activities, or routine water-taking during construction, operation, or decommissioning. Surface water runoff will be managed on-site through infiltration-based measures and standard erosion and sediment controls to maintain pre-development drainage conditions.

7.2 Key net environmental effects of the project

7.2.1 Construction and decommissioning

- Preliminary cultural heritage and archaeological assessments suggest possible cultural heritage resources, but none are confirmed yet. Potential effects on cultural heritage are mainly limited to chance finds of undocumented archaeological materials; wherein standard stop-work procedures will apply if discoveries occur.
- Potential effects on natural heritage are expected to be temporary and localized, mainly involving vegetation removal, soil disturbance, noise, and increased activity near the site boundary. No permanent encroachment into significant woodlands or wildlife habitat is planned, and where required, setbacks, timing constraints, and mitigation will prevent significant adverse residual effects.
- Groundwater is generally deeper than needed for construction, with only minor, isolated seepage observed; routine groundwater abstraction or dewatering above regulatory thresholds is not expected.
- Any contingency dewatering would be short-term, limited, and managed per regulations. No significant effects on surface water, groundwater, fish, or aquatic habitat are anticipated.
- Construction air emissions, dust, and odour will be intermittent, short-term, and localized, and will be managed with best practices, resulting in negligible effects on air quality.
- Construction noise will be temporary and confined to active work areas and haul routes, with mitigation measures applied to minimize disturbance.
- Temporary visual disturbance and soil exposure may occur during construction. When applicable, erosion and sediment controls will be in place, with emergency plans for accidental spills.
- Construction traffic will use existing roads, leading to short-term, local increases in traffic, which will be addressed accordingly to minimize disruption.
- No significant adverse residual effects on public health and safety, socio-economic conditions, or infrastructure are anticipated during construction with mitigation measures in place.

7.2.2 Operation

- The Project operates as a passive, ground-mounted solar energy facility with only periodic inspection and maintenance.
- No built heritage resources, protected properties, or confirmed archaeological resources are present within the Project Location, and no significant adverse effects on cultural heritage are expected during operation.
- Operational activities and maintenance occur outside significant natural heritage features and setback areas. Maintenance is infrequent, short-term, and spatially limited, with no significant residual effects on woodlands or wildlife habitat expected due to mitigation measures.
- No routine water-taking is required. The facility operates without process water, cooling water, or panel washing under normal conditions, and surface water runoff is managed to maintain pre-development water balance.
- Potential accidental spills during maintenance are expected to be rare and minor, with secondary containment and spill response measures in place to prevent effects on soil or groundwater.
- Operational air emissions are minor and localized, arising from occasional maintenance vehicles and equipment. Noise from electrical equipment is expected to comply with regulatory criteria.
- Temporary visual changes to the landscape may occur due to the presence of solar infrastructure, but these effects are reversible as project components are removable.
- With mitigation measures and safety protocols, no significant risks to public health and safety or adverse effects on environmental or socio-economic features are anticipated during operation.

References

GHD. (February 2023). *Hydrogeological and Geotechnical Investigation Proposed Greenhouse Development – 4305 King Road, King City, Ontario .*

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