

Report

**CarbonFree Kynoch
Water Body Assessment Report**

H376108-0000-840-066-0003

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1. Introduction

CarbonFree Kynoch Solar Ltd. (CarbonFree) is proposing to develop an up to 154 megawatt (MW) Class 3 solar photovoltaic (PV) project adjacent to Highway 554 in the unincorporated District of Algoma, approximately 20 km north of Iron Bridge.

The proposed CarbonFree Kynoch Project (hereinafter referred to as the Project) is a renewable energy generation facility which will use solar PV technology to generate electricity. Electricity generated by solar PV panels will be converted from direct current (DC) to alternating current (AC) by inverters and then stepped up (via pad-mounted inverters, medium-voltage transformers and a main substation transformer) to 230 kilovolts (kV) prior to being connected to the existing Hydro One Networks Inc. (HONI) transmission line.

The Project aims to contribute to the government of Ontario's goal of accelerating new electricity generation from renewable sources to support the province's growing energy needs. Accordingly, CarbonFree intends to enter into an agreement for the sale or supply of electricity, the quantity of which will be commensurate with the nameplate capacity of the facility.

1.1 REA Regulation Requirements – Water Assessment

The Renewable Energy Approval (REA) Regulation prescribes the requirements for renewable energy projects based on the class of solar facility. The Water Assessment requirements, as outlined in Section 29 of the REA Regulation, consists of a *records review* (Section 30) and *site investigation* (Section 31).

According to the REA Regulation: a “water body” includes a lake (including kettle lakes), a permanent stream, an intermittent stream or a seepage area but does not include

- a) grassed waterways
- b) temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through
- c) rock chutes and spillways
- d) roadside ditches that do not contain a permanent or intermittent stream
- e) temporarily ponded areas that are normally farmed
- f) dugout ponds
- g) 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.”

A “Permanent Stream” is defined by the regulation as a stream that continually flows in an average year.

An “*Intermittent Stream*” is defined by the regulation as a natural or artificial channel, other than a dam, that carries water intermittently and does not have established vegetation within the bed of the channel, except vegetation dominated by plant communities that require or prefer the continuous presence of water or continuously saturated soil for their survival.

A “*Lake Trout Lake*” is defined by the regulation as a lake that has been designated by the Ontario Ministry of Natural Resources and Forestry (MNR) for lake trout management, as set out in records maintained by and available from that Ministry.

A “*Seepage Area*” is defined by the regulation as a site of emergence of ground water where the water table is present at the ground surface, including a spring.

Although the REA does not define a “*Lake*” for the purpose of this report, it is defined as a permanent natural accumulation of water with its open water (i.e., not vegetated) component >50% of the overall surface area. In instances where the surface is <50%, the feature will be considered a wetland.

For the purpose of this report, any wider areas or ponds (natural or artificial) hydraulically inline (inflow/outflow) of a permanent or intermittent stream will be considered part of the stream with the high-water marks adjusted accordingly. For offline dug ponds that are connect to a water body via channels that meet the definition of a water body, all channels natural or artificial will be considered waterbodies with the water body boundary ceasing at the onset of the dug pond.

1.2 Report Format

This report is comprised of three main sections, as outlined below, with each section complete with REA Regulation requirements, methodology and results:

- **Records Review** – Section 2
- **Site Investigation** – Section 3
- **Environmental Impact Study** – Section 4
- **References** – Section 5.

2. Records Review

A records review is required as part of the Water Assessment, as outlined in subsection 29(1) of the REA Regulation. The following sections outline the REA Regulation requirements, methodology and results of the Water Assessment Records Review.

2.1 REA Regulation Requirements – Water Assessment Records Review

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to conduct a Water Assessment Records Review and prepare a report summarizing the results and determinations made with respect to whether the Project Location is:

- in a water body
- within 120 metres (m) of the average annual high-water mark of a lake, other than a Lake Trout Lake that is at or above development capacity
- within 300 m of the average annual high-water mark of a Lake Trout Lake that is at or above development capacity
- within 120 m of the average annual high-water mark of a permanent or intermittent stream
- within 120 m of a seepage area.

2.2 Records Review Methodology

The following sections outline the background documents and information sources reviewed for records related to water body features in the vicinity of the Project.

Publicly available records maintained by government and non-government sources were reviewed. Key information sources included: MNR, Crown Land Use Policy Atlas (CLUPA), Algoma District and several sources of publicly available satellite imagery. No Conservation Authorities regulate the area.

2.2.1 *Ministry of Natural Resources and Forestry Records*

- **Land Information Ontario Mapping** – *Land Information Ontario* (LIO) data is maintained by the MNR and provides key provincial geospatial data about Ontario. Shapefiles obtained from the LIO open datasets were obtained and used to prepare a figure showing the presence/absence of water features in the vicinity of the Projects. Available satellite imagery was further used to verify natural features.
- **MNR Sault Ste. Marie – Blind River District** – Discussions regarding information on the provincial policy plan and natural features in the vicinity of the Project are currently in progress with MNR. Available information is published online for public use. If any information is received that includes additional waterbodies or requires a change to water body boundaries or classifications within 120 m of the Project, this report will be updated accordingly.

2.2.2 **Ontario Ministry of Agriculture, Food and Rural Affairs**

The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) online drainage mapping is an interactive web browser that provides information on water features, including agricultural drainage ways. This interactive map was used to determine the presence/absence of water features in the vicinity of the Projects.

2.2.3 **Lake Trout Lakes in Ontario (Land Information Ontario)**

The LIO data for Lake Trout Lakes in Ontario for the Northeast Region was investigated to inform the presence of Trout Lakes in the vicinity of the Project.

No Natural or Put-Grow-Take Lake Trout Lakes were identified within 120 m of the Project.

2.2.4 **Satellite Imagery**

Google Earth and Bing Imagery, as well Ontario aerial base maps accessible through the MNR Make a Map portal was reviewed to determine if any visible waterbodies were observed.

2.3 **Records Review Results**

A summary of water body records is presented in Table 2-1 and illustrated in Figure 2-1 within 120 and 300 m of the Project Location.

Table 2-1: Summary of Records Review Results

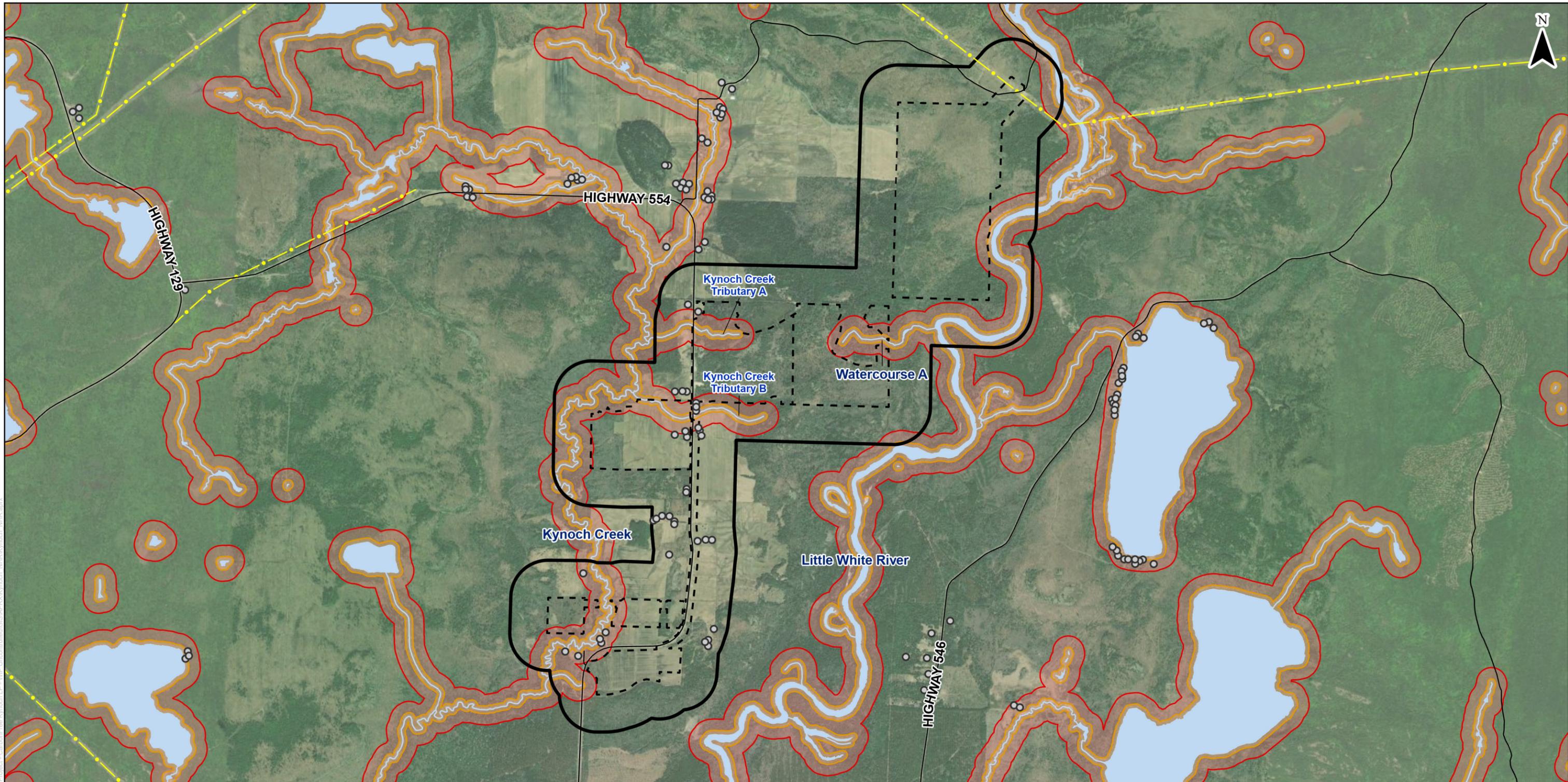
Project Name	Location	Records Review Determinations (Per REA Regulation)					
		In Water Body	Within 120 m of Lake	Within 120 m of Permanent Stream	Within 120 m of Intermittent Stream	Within 120 m of a Seepage Area	Within 300 m of Lake Trout Lake
CarbonFree Kynoch Solar Project	Algoma District	No	No	Yes	Yes	No	No

2.3.1 **Records Review Summary**

Three water features were identified within 120 m of the Study Area, and one within 300 m including:

- **Little White River:** Major sinuous river that flows south to Lake Huron. It is known to provide SAR habitat and is frequently used for recreational purposes by the local community.
- **Kynoch Creek:** Permanent sinuous watercourse converging with the Little White River approximately 10 km downstream of the Study Area.
- **Kynoch Creek Tributary A:** A tributary of Kynoch Creek extending into the northwest parcel of the Project Location.
- **Kynoch Creek Tributary B:** A tributary of Kynoch Creek extending into the northwest parcel of the Project Location south of Kynoch Creek Tributary A.

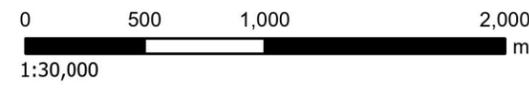
- **Watercourse A:** An unnamed watercourse including four inline beaver ponds appearing as a water body on aerial imagery. The watercourse is a slow flowing, ephemeral first order tributary originating from the westernmost beaver pond, which serves as the headwater. It flows into the Little White River approximately 1 km downstream of the Study Area when precipitation exceeds the capacity of the inline beaver ponds.



LEGEND

- Building
- Road
- Utility Line
- Watercourse
- - - Project Location
- ▭ Study Area (300m Buffer)
- ▭ Water (30m Buffer)
- ▭ Water (120m Buffer)
- ▭ Waterbody

NOTES:
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 2. Spatial referencing: NAD 1983 UTM Zone 17N



PROJECT: Water Body Assessment Report
Kynoch Solar Project

FIGURE TITLE: Records Review Results

CLIENT: CarbonFree Devco Ltd.

DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.: 2-1	REV NO.: 1	
DATE: 05/02/26	PAGE: 1			

3. Site Investigation

A site investigation is required as part of the Water Assessment to confirm the presence/absence of water body features, as outlined in subsection 31(1) of the REA Regulation. The following sections outline the REA Regulation requirements, methodology and results of the Water Assessment Site Investigation.

3.1 REA Regulation Requirements – Water Assessment Site Investigation

Per section 31(1) of the REA regulation, a Water Assessment Site Investigation is required for the proposed Project to determine:

- a) Whether the results of the analysis summarized in the report prepared under subsection 30(2) are correct or require correction, and identifying any required corrections.
- b) Whether any additional waterbodies exist, other than those identified in the records review.
- c) The boundaries, located within 120 m of the Project Location, of any water body that was identified in the records review or site investigation.
- d) The distance from the Project Location to the boundaries determined under clause c) above.

3.2 Site Investigation Methodology

3.2.1 Site Investigation Type

The REA Regulation distinguishes between two different Site Investigation types: a physical Site Investigation and Alternative Site Investigation. The details of the type of Site Investigation completed for the Project are outlined below.

3.2.1.1 Physical Site Investigation

A physical Site Investigation was completed for the Project Location. This included walking throughout the Project Location to investigate the air, land and water and verify the presence/absence of natural features. Dates and details of the Site Investigation are provided in Section 3.2.2.

3.2.2 Weather Conditions and Methodology

The details of the site investigation related to the dates, times and weather conditions are provided in Table 3-1. Weather conditions are based on the weather network results for Kynoch, Ontario.

Table 3-1: Site Investigation Details – Dates, Times and Weather Conditions

Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hrs)	Weather Conditions			
						Temp (°C)*	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
May 5, 2025	Physical Site Investigation Alternative Site Investigation (50 m of Project Location)	M. Babin, A. Hoffmann	10:00	18:00	8	14	1	0	0
May 19, 2025	Physical Site Investigation Alternative Site Investigation (50 m of Project Location)	M. Babin, A. Hoffmann	9:00	18:00	9	14	1	80	0
May 20, 2025	Physical Site Investigation	M. Babin, A. Hoffmann	8:00	16:00	8	14	2	0	0
May 21, 2025	Physical Site Investigation	M. Babin, A. Hoffmann	9:15	12:00	2.75	14	1	50	0
June 3, 2025	Physical Site Investigation	M. Babin, T. Simpanen	12:00	15:30	8	15	1	Local smoke	0
June 4, 2025	Physical Site Investigation	M. Babin, T. Simpanen	5:30	23:00	16	14	1	100	0.02
June 18, 2025	Physical Site Investigation	M. Babin, T. Simpanen	21:00	23:00	2	15	0	100	0
June 19, 2025	Physical Site Investigation	M. Babin, T. Simpanen	5:30	8:30	3	16	1	100	0
July 17, 2025	Physical Site Investigation Alternative Site Investigation (50 m of Project Location)	M. Babin, A. Hoffmann	13:00	17:30	4.5	25	1	0	0
July 18, 2025	Physical Site Investigation Alternative Site Investigation (50 m of Project Location)	M. Babin, A. Hoffmann	8:00	12:00	4	25	1	0	0

3.2.3 Name and Qualifications of the Site Investigators

The name and qualifications of the site investigators are provided in Table 3-2.

Table 3-2: Name and Qualifications of Site Investigators

Details and Qualifications		
Name	Michael Babin	Taylor Simpanen
Education and Professional Affiliations	<p>B.A.Sc. (Ecology and Geography University of Guelph (2019))</p> <ul style="list-style-type: none"> Dipl. Ecosystem Restoration, Niagara College (2020) 	<ul style="list-style-type: none"> Dipl. Fish and Wildlife Technician (2018) Dipl. Arboriculture and Urban Forestry (2019) Ontario Breeding Bird Atlas Bird Studies Canada
Years in Practice	~6 years	~5 years
Experience Summary	<p>Michael has worked on 10 REA Solar Projects and has extensive knowledge and experience completing terrestrial and aquatic field investigations, including Species At Risk (SAR) surveys, and monitoring and habitat assessments (including critical habitat). Surveys include but are not limited to breeding bird, herpetofauna, mammals, fisheries and benthic macroinvertebrate surveys and monitoring, botanical inventories, ecological land classification (ELC) and mapping, tree health assessments, aquatic and significant wildlife habitat assessments, various hydrological assessments, groundwater monitoring, and soil and sediment sampling.</p>	<p>Taylor has worked on numerous renewable power projects including hydropower, pumped storage, solar, and wind facilities during his career. He has extensive knowledge and experience completing terrestrial and aquatic field investigations, including Species at Risk (SAR) surveys and monitoring, habitat assessments (including critical habitat), breeding birds, amphibian and reptile, mammals, fisheries, benthics, botanical identification and inventories, Ecological Land Classification (ELC) surveys, wetland delineations, tree health assessments, aquatic and significant wildlife habitat assessments, water quality monitoring, hydrological assessments, and soil sampling.</p>
Certifications and Professional Development	<p><u>Certificates:</u></p> <ul style="list-style-type: none"> Society of Ecological Restoration (CERPIT) OBBN Certification <p><u>Professional Development:</u></p> <ul style="list-style-type: none"> 100+ hours of ELC training and 500+ hours of ELC in professional settings 	<p><u>Certificates:</u></p> <ul style="list-style-type: none"> Maritimes Wetland Evaluation System Training (2024) Ecological Land Classification (ELC) (2023) Butternut Health Assessor (2022) Class 2 Crew Lead Electrofisher (2017) OBBN (2018) <p><u>Professional Development:</u></p> <ul style="list-style-type: none"> NHIC Data Sensitivity Training Course (2025) Wood Turtle Habitat Assessment Training (2023) IBP Banding Certificate (2020) Bird Studies Canada Migration Monitoring Training (2018)

3.3 Site Investigation Results

The site investigations differed from the records review findings as outlined in the below sections and illustrated in Figure 3-1.

3.3.1 *Little White River*

Site investigations confirmed the presence of the Little White River near the northeastern edge of the Project Location. All Project components will be placed at least 120 m beyond the high-water mark.

3.3.2 *Kynoch Creek*

Site investigations confirmed the presence of Kynoch Creek west of the Project Location. Project components such as solar panels, inverters and transformers will be located more than 30 m away from the watercourse. An access road and transmission infrastructure will be required to pass overtop of Kynoch Creek to facilitate site access and electrical connectivity throughout the Project Location.

3.3.3 *Kynoch Creek Tributary A*

Kynoch Creek Tributary A was absent during the site investigation. No signs of permanent or intermittent watercourses were observed in the area by field staff.

3.3.4 *Kynoch Creek Tributary B*

Kynoch Creek Tributary B was absent during the site investigation. The area was largely a dry drainage feature associated with adjacent agricultural activities; however, it was not observed to be conveying flow throughout the site investigations.

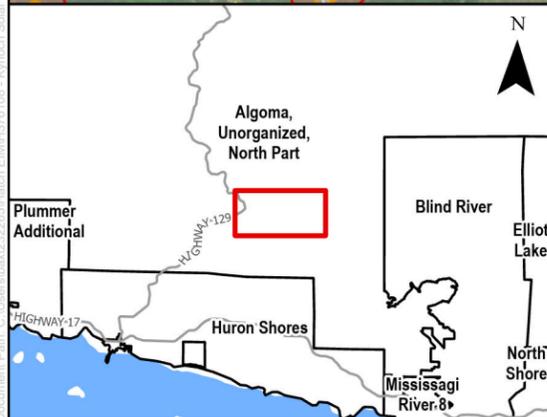
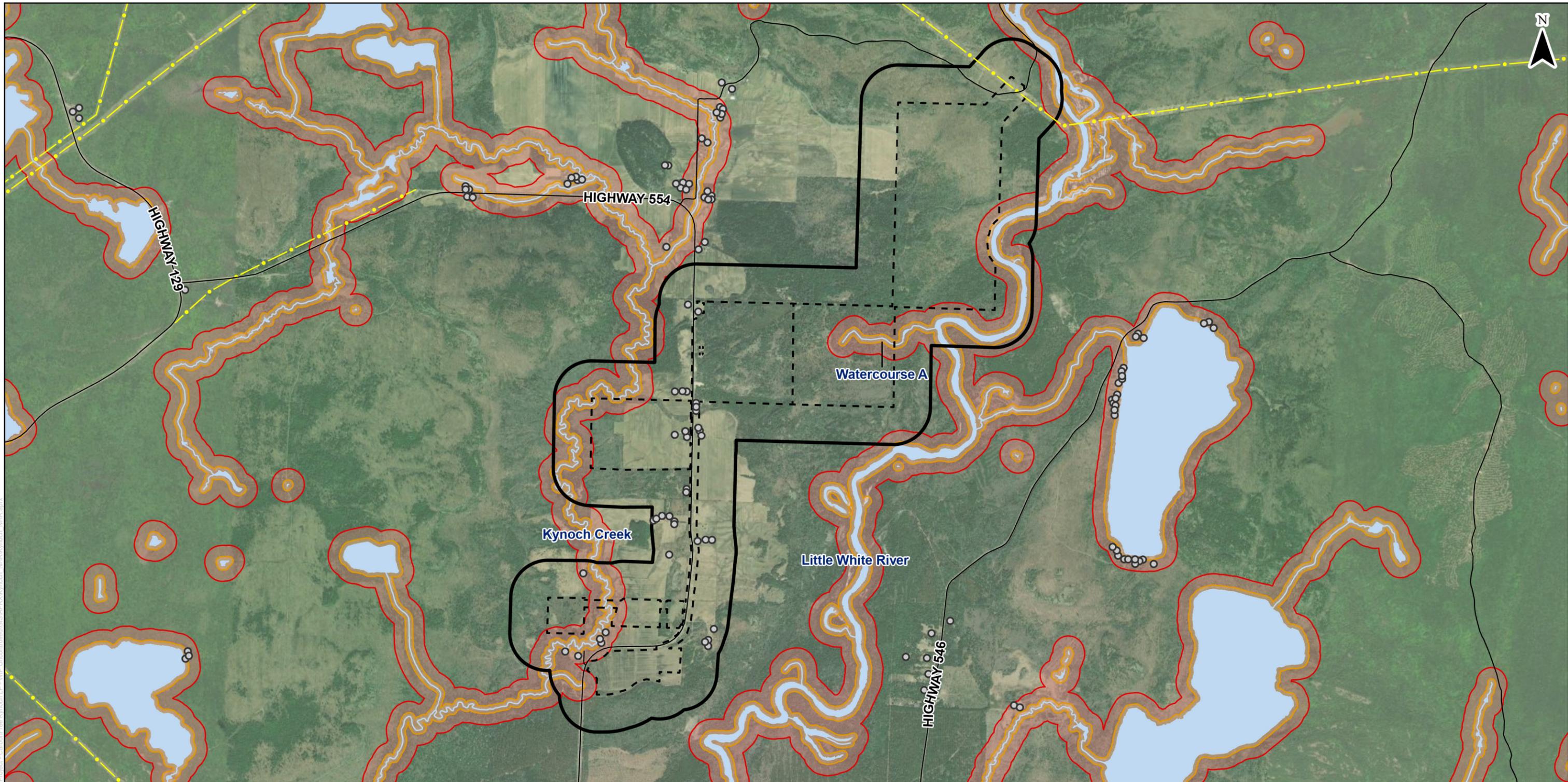
3.3.5 *Watercourse A*

The site investigations confirm the presence of several beaver ponds which are found along an ephemeral first order tributary that flows eastward into the Little White River. The water in this area is stagnant and may only convey flows during precipitation events during when the headwater beaver pond exceeds its capacity. The banks of the watercourse are at first well-defined, before draining into small wetlands and finally into a pond downstream.

All Project components will be placed at least 30 m beyond the headwater pond found upstream of this feature.

Table 3-3: Project Location in Proximity to Waterbodies

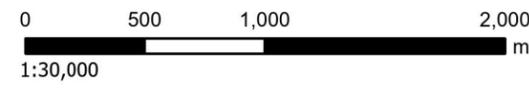
Water Body	Site Investigation Determinations (Per REA Regulation)		
	In Project Location	Within 30 m of Project Location	Within 120 m of Project Location
Little White River	No	Yes	Yes
Kynoch Creek	Yes	Yes	Yes
Kynoch Creek Tributary A	No	No	No
Kynoch Creek Tributary B	No	No	No
Watercourse A	Yes	Yes	Yes



LEGEND

- Building
- Road
- - - Utility Line
- Watercourse
- - - Project Location
- ▭ Study Area (300m Buffer)
- ▭ Water (30m Buffer)
- ▭ Water (120m Buffer)
- ▭ Waterbody

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PROJECT: Water Body Assessment Report
Kynoch Solar Project

FIGURE TITLE: Site Investigation Results

CLIENT: CarbonFree Devco Ltd.

DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.: 3-1	REV NO.: 1	HATCH
DATE: 05/02/26	PAGE: 1			

4. REA Regulation – Environmental Impact Study

Section 39(1) of the REA Regulation prohibits the construction, installation or expansion of any component of a solar project within the following locations:

- A lake or within 30 m of the average annual high-water mark of a lake.
- A permanent or intermittent stream or within 30 m of the average annual high-water mark of a permanent or intermittent stream.
- A seepage area or within 30 m of a seepage area.

However, Section 39(2) allows proponents to construct Project components other than solar panels or transformers (e.g., access roads or distribution lines) within the locations noted above, subject to the completion of an Environmental Impact Study (EIS) to assess negative effects and required mitigation and monitoring measures.

Section 40(1) of the REA Regulation prohibits construction, installation or expansion of any component of a solar project within the following locations:

- Within 120 m of the average annual high-water mark of a lake, other than a Lake Trout Lake that is at or above development capacity.
- Within 300 m of the average annual high-water mark of a Lake Trout Lake that is at or above development capacity.
- Within 120 m of the high-water mark of a permanent or intermittent stream.
- Within 120 m of a seepage area.

However, Section 40(2) allows proponents to construct Project components within the locations noted above, subject to the completion of an EIS. Sections 39 and 40 of the REA Regulation indicate that the EIS report must

- Identify and assess any negative environmental effects of the Project on a water body and on land within 30 m of the water body.
- Identify mitigation measures in respect of any negative environmental effects.
- Describe how an environmental effects monitoring plan will address any negative environmental effects.
- Describe how the construction plan report addresses any negative environmental effects.

4.1 EIS Methodology

The following steps outline the methodology that was used to prepare this EIS:

- Documentation of Project components and activities during all Project phases, including construction, operations and decommissioning, and identification of temporal and spatial boundaries.
- Identification of effects that are likely to occur on the environmental components as result of implementing the Project.
- Development of mitigation measures to eliminate, alleviate or avoid the identified negative effects.
- Design of an environmental effects monitoring program to confirm the predicted effects and the effectiveness of mitigation measures.

4.2 Project Components and Activities

The following sections briefly describe the construction, operation and decommissioning phases of the Project. The summary information is taken from the Project Description Report (H376108-0000-840-066-0001). More detailed information on the Project phases, components, design, and construction methodology can be found in the Construction Plan Report (H376108-0000-840-066-0008), Design and Operations Report (H376108-0000-840-066-0005) and Decommissioning Plan Report (H376108-0000-840-066-0007).

4.2.1 Project Components

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

- Approximately 298,000 solar PV modules, each 625 watts (W) and weighing about 33 kilograms (kg), with approximate dimensions of 2,382 millimetres (mm) long by 1,134 mm wide by 30 mm thick.
- Thirty-six 4.4 MW AC inverters that will convert the direct current supplied by the PV modules to alternating current. Similarly, 4.4 megavolt-ampere (MVA), 3-phase, liquid-filled transformers that will 'step up' the voltage to 34.5 kV. Each installation will consist of a single 4.4 MW inverter and a single 4.4 MVA pad-mounted transformer.
- A gravel substation yard that will house an approximately 80 MVA substation transformer that will 'step up' the voltage from 34.5 kV to 115 kV, switchgear, control and monitoring equipment, and a communication tower.
- There are approximately four entrance roads from Highway 554 and several gravel interior access roads.
- A chain-link fence measuring approximately 18,000 m around the perimeter of the Project Location and a gated entrance.

- A surface water drainage system comprised of grass swales, roadside ditches, and culverts.

4.3 Construction

It is anticipated that construction of the Project will take between 18 and 24 months, depending on time of year and various other factors. Prior to construction, the area will be surveyed, and any buried infrastructure will be located before commencing with site preparation. Construction is anticipated to start in early 2027, pending receipt of requisite permits and approvals.

4.3.1 Site Preparation

Prior to site preparation, a sediment and erosion control plan will be prepared and implemented. Trees and large standing vegetation will be cleared from areas where the PV arrays will be constructed. Meadow vegetation will be left in place to the extent possible. Locations of topsoil, timber and vegetation stockpiles will be pre-determined and not within 30 m of any identified waterbodies.

4.3.2 Access Road Construction

New primary access roads will be approximately 6 m wide and constructed of crushed gravel. Entrances to primary access roads will be located on Highway 554. In addition, several smaller gravel roads, approximately 3 to 5 m wide, will be constructed within the interior areas of the Project Location. Exact dimensions and locations of access roads will be finalized in consultation with the Northern Municipal Services Office. Road construction will involve vegetation clearing if necessary, and topsoil removal prior to the placement of a granular base. Ditches and culverts will be constructed, as necessary, to maintain drainage. Following construction, any access roads that are not required will be removed and restored by replacing the topsoil and seeding the area.

4.3.3 Laydown Area

A construction laydown area will occur on the Project Location, adjacent to where the solar PV arrays are installed.

4.3.4 Perimeter Fencing

A chain-link fence topped with barbed wire and access gates will be installed around the perimeter of the Project Location to prevent unauthorized access.

4.3.5 Installation of Support Structures

Foundations and/or support structures will be required beneath transformers, inverters, and PV panels. Detailed engineering for the design of the foundations and support structures is yet to be completed. However, it is expected that the pads for the transformers and inverters will be concrete slab-on-grade. The PV panels will be installed on racks mounted on tracking structures. The tracking structures are expected to be supported by steel piles, driven or screwed into the ground. Concrete may be used to support or ballast the steel piles when necessary. It is estimated that up to 132,000 piles will be installed within the Project Location

to support the tracking structures and the PV panels. Foundation construction and the installation of support structures will be subject to inspection prior to the installation of PV panels, and wiring.

4.3.6 *Installation of PV Modules, Trackers and Mounting Racks*

The solar PV modules will be mounted on racks mounted on tracking structures. Each tracker is comprised of a long steel torque tube (approximately 50 m to 100 m long) mounted on steel piles driven or screwed into the ground. A simple racking system will be assembled onto each torque tube, and the PV modules will be attached to the racking system.

There will be approximately 6,600 trackers, each holding up to 50 PV modules. The modules will be mounted on the racking system by installers with the help of a small mobile crane if needed.

4.3.7 *Electrical Cable Installation*

A network of underground DC cabling will be required from the termination point of the PV array to the inverters and medium-voltage transformers, which will then convert the DC electricity to AC and step up the voltage to 34.5 kV. A network of overhead and underground AC cables may be required from the inverters, to connect the PV array to the proposed substation and HONI transmission system. A simple trenching device will be used to install the underground cables, whereby a slot is opened, the cable laid, and the soil replaced. An additional 2.5 km of overhead medium-voltage transmission lines are expected to run adjacent to Highway 554 with approximately two overhead crossings of Highway 554.

4.3.8 *Substation Construction*

The substation yard will be located in the northeast end of the Project Location. Construction will include excavation of topsoil, installation of ground grid, foundation construction, construction of secondary containment, covering the area with crushed stone, installation of the substation transformer and other electrical equipment. Switchgear, protection and control equipment will be housed in a prefabricated, weatherproof building enclosure. The substation transformer will step-up the voltage from 34.5 kV to 115 kV prior to connecting to the existing HONI 115 kV transmission line.

4.3.9 *Electrical Distribution Line and Interconnection Point*

Connecting to the existing HONI 115 kV transmission line northeast of Highway 554 will require a less than 500 m overhead transmission line to be constructed between the Project substation yard and the point of interconnection (POI) with the existing HONI transmission line (presented in Figure 2-1 and Figure 3-1).

4.3.10 *Testing and Commissioning*

Following the installation of all electrical components, testing and commissioning will be performed prior to start-up and connection to the power grid. The solar modules, inverters, transformers and electrical cables will be checked for system continuity, reliability and

performance. If problems or issues are identified, remedial corrections will be made prior to start-up.

4.4 Operation and Maintenance

The Project will operate year-round and generate electricity during daylight hours. The amount of power generated will depend on daily weather conditions and sufficient solar irradiation. To ensure the safety and integrity of the Project, access will be limited to Project personnel and unauthorized public access will be prevented by fences, gates and security procedures.

Operationally, there are no significant hazards involved in the operation of the Project, nor are hazardous materials stored on-site or created by the Project during its operation. The Project will not generate significant quantities of waste from its operation.

4.4.1 Maintenance and Inspection

The Project solar PV modules, inverters and transformers and other electrical equipment, wiring and electrical connections will be routinely inspected, typically on a monthly basis. Any broken or malfunctioning PV modules, electrical cabling or components will be repaired or replaced by facility staff. Trash, debris and equipment parts replaced during maintenance and repair activities will be collected and properly stored in waste disposal bins. All waste collected during operation of the Project will be removed in accordance with provincial and municipal requirements.

Vegetation coverage, drainage systems and trees will be monitored and maintained regularly, typically on a monthly basis. Since suitable ground cover will be established under the PV modules, some form of vegetation abatement such as grass cutting may be required several times throughout the summer months and may extend outside of the fenced project area to maintain the existing conditions and fenceline. No hazardous chemicals would be used for typical vegetation control and will only be considered for management of invasive species, where present. If required, water trucks will bring water to supply the water to support vegetative cover.

The Project Location, including any drainage features (e.g., grassed swales, culverts) and any sediment and erosion control measures (e.g., riprap protection, rock flow checks) will be visually inspected for any signs of erosion or sedimentation and recorded. Regular maintenance such as the cleanout of accumulated sediment and/or the removal of any debris blockage would be conducted at that time. If required, remedial works (e.g., stabilizing and/or reseeding of identified erosion areas) and repairs to any drainage features or sediment and erosion control measures will be implemented to minimize environmental impacts.

The need to clean the solar PV modules will be determined according to local weather conditions, such as the quantity and frequency of rain and snow at the Project Location. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible

that cleaning the modules will not be necessary at all. If required, water trucks will bring water to supply the water required. No chemicals will be used for the cleaning of the modules.

The transformers will be visually inspected on a regular basis and their status recorded. Any faulty equipment that could result in an oil leak will be repaired and any observed leaks will be cleaned up immediately by maintenance personnel. Secondary containment will be integrated into the design of the substation and will have the capacity to hold 110% of the mineral oil utilized in the transformer system. Transformer stations will be connected to a supervisory control and data acquisition (SCADA) system that logs and communicates alarms in real time.

Transformers will be monitored for oil levels, oil pressure, oil temperature, and gas accumulations to alert operators to faults so as to identify potential issues or leaks. Spill response equipment will be left on-site or in the maintenance trucks should leaks be observed.

During winter, primary access roads will be ploughed to clear snow to maintain access of personnel to Project facilities. Under most winter conditions, snow is expected to melt due to the module heating and the tilt of the modules. Under some conditions, manual snow removal may be performed by maintenance personnel who will clear the snow using a brush attached to a long pole.

4.4.2 Stormwater Management

A stormwater management design will be prepared to minimize any potential negative environmental effects to the existing drainage conditions (e.g. increased runoff, erosion and sedimentation) will not occur as a result of the Project. The following mitigation measures are expected to form part of the Project's stormwater management design:

- Existing drainage patterns within the Project Location will be maintained to the extent possible and/or as required to maintain the common law drainage rights of upstream or downstream riparian landowners.
- Following construction, the entire Project Location, with the exception of the access roads, will be re-vegetated with native grass or other suitable ground cover to promote surface water infiltration, filter stormwater runoff and to prevent erosion.
- New drainage swales and channels will be constructed as enhanced (flat bottom) grassed swales to provide extended flow times, filtering of runoff and reduce the potential for erosion.
- Rainfall runoff from solar modules, inverter building rooftops, transformer concrete pads (if not enclosed in an inverter building), interior roads and parking area will be directed to grassed or vegetated areas to promote infiltration and filtering of runoff by vegetation prior to its conveyance to on-site grassed swales.

- All transformers will use mineral oils or FR3 oils, which are non-toxic, non-bioaccumulating and readily biodegradable in the environment. All transformers will be routinely inspected and any faulty equipment that could result in an oil leak will be repaired.
- Spill response equipment will be left on-site, and any observed leaks will be cleaned up immediately by maintenance personnel.

4.4.3 Water Supply Facilities

The Project does not require any on-site facilities to supply groundwater (wells) or surface water (ponds, watercourses) for operation of the Project. It is anticipated that water from rain and snow will be sufficient for cleaning the solar PV modules and maintaining vegetative cover on-site; if not, the Proponent will contact local suppliers to provide water in tankers from off-site sources for this purpose. No chemicals will be used in the cleaning of the PV modules.

4.4.4 Wastewater (Sewage) Facilities

The Project will not generate any wastewater (sewage) or discharge any liquid effluent from its operation, nor does the Project require any on-site facilities for the collection, transmission, treatment or disposal of wastewater for operation of the Project; however, secondary containment for the transformer substation will be incorporated into the substation design.

During operation, sanitary facilities (e.g. permanent washrooms with a septic disposal system) are not required. If sanitary facilities are determined to be required, portable toilets, provided and serviced by a local sanitation company, will be used.

4.4.5 Waste Disposal Facilities

The Project will not generate significant quantities of waste from its operation. A small waste disposal bin(s) will be provided on-site to collect any trash, debris or equipment parts replaced during routine maintenance of the Project during its operation. Periodically, when required, the Proponent will arrange for a licensed waste disposal company to empty the bins and haul the waste to an appropriate waste disposal facility off-site.

4.4.6 Exhaust Equipment

The Project has no facilities or equipment that will discharge contaminants or pollutants to the air (e.g., exhaust gases from emergency backup diesel generators) during operation of the Project.

4.4.7 Noise Generating Equipment

Noise generating equipment during the operation of the Project is expected to be limited to inverters and transformers adjacent to the solar PV arrays and within the substation. Minor noise may be generated by tracker motors at intervals throughout the day. A noise study will be completed to review proposed locations of noise emitting equipment to confirm the applicable MECP and NPC-300 noise levels will not be exceeded during operation.

4.5 Decommissioning

The anticipated lifespan of the Project is approximately 25 years. At that time, the Project will be decommissioned or refurbished depending on market conditions and/or technological changes. If the decision is to discontinue renewable energy generation, the decommissioning process would involve the following:

- Removal of the scrap metal and cabling. Where possible, these materials will be recycled, with non-recyclables taken to an approved disposal site.
- Removal of support structures and foundations; these materials will be recycled where possible.
- Cleanup and any necessary re-grading.
- A Decommissioning Plan Report will be generated and published as part of the REA application process.

4.6 Potential Negative Environmental Effects and Proposed Mitigation Measures

The potential negative environmental effects on waterbodies and watercourses that may occur during construction, operation and decommissioning phases of the Project are described in Table 4-1.

Mitigation measures have been proposed with the intent to minimize or prevent these negative effects and monitoring activities have been proposed to confirm the effectiveness of these mitigation measures.

4.6.1 *Little White River*

The Little White River is a permanent sinuous watercourse flowing parallel to and within the east portion of the Study Area from north to south. It is within 120 and 30 m of the Project Location where it overlaps with the Study Area in the northeast portion. The Project Location will be set back a minimum of 30 m from the Little White River. The majority of the Little White River is enveloped by Little White River Provincial Park. A setback of 50 m from the park boundary is respected throughout the Project Location. In addition, there are several locations that given the existing terrain, and erosion associated with the Little White River, a larger than 30 m setback has been accommodated.

The changes to adjacent land coverage may influence the water levels and flows associated with the watercourse. The Project has been designed to minimize these changes in surface water flow patterns. Increases in sedimentation or spill occurrences associated with the Project could impact the watercourse; however, standard mitigation measures such as sediment and erosion controls and spill prevention procedures are expected to sufficiently reduce the risk of impacting this feature. Where the Project footprint extends between 120 m and 30 m in areas adjacent to the Little White River, sediment and erosion controls will be installed between the Project Location and river or valley features. The intent will be to

minimize or eliminate sedimentation and further erosion from occurring in this area. Water flow will be directed to lower points within the Project Location to reduce the likelihood of further erosion in areas adjacent to the Little White River.

4.6.2 Kynoch Creek

Kynoch Creek is a permanent watercourse flowing parallel to and within the west portion of the Study Area from north to south. It is present within 120 and 30 m of the Project Location at a number of locations, including where it flows directly through the Project Location in the southwest portion. In all cases, Project components such as solar panels, inverters and transformers will be located more than 30 m away from the watercourse. An access road and transmission infrastructure will be required to pass overtop of Kynoch Creek to facilitate site access and electrical connectivity throughout the Project Location. The access will be designed to minimize impacts to Kynoch Creek and will meet flow requirements associated with MNR work permits for water crossing installations, completed outside of the REA process. Potential negative effects are likely limited to those associated with access road and culvert features, this can include increases in sedimentation, changes to riverbank and substrate structure and impacts to the hydraulic flows of the river. It is expected that design of the access road and bridge/culvert will minimize these impacts to the extent possible per MNR guidance and permitting requirements.

4.6.3 Watercourse A

Watercourse A is a tributary to the Little White River, associated with an area of wetland and several ponds. It flows within both 120 and 30 m of and directly through the Project Location in the northeast portion. The watercourse is heavily influenced by beaver activity. The Project Location will be set back a minimum of 30 m from the feature. The changes to adjacent land coverage may influence the water levels and flows associated with the watercourse. The Project has been designed to minimize these changes in surface water flow patterns. Increases in sedimentation or spill occurrences associated with the Project could impact the watercourse; however, standard mitigation measures such as sediment and erosion controls and spill prevention procedures are expected to sufficiently reduce the risk of impacting this feature.

4.6.4 Mitigation Measures

Industry best management practices (BMPs) related to sediment, erosion, groundwater and stormwater management have been included within the Construction Plan (H376108-0000-840-066-0008), Design and Operations (H376108-0000-840-066-0005) and Decommissioning Plan (H376108-0000-840-066-0007) Reports. The Design and Operations Report will include a Stormwater Management Plan which will generally maintain drainage patterns throughout the Project Location. Sediment and erosion control measures will be implemented in any locations where watercourses are within 120 m of the Project Location. BMPs may include but are not limited to silt fencing, straw wattles, vegetated drainage swales, sedimentation ponds and site grading to direct surface runoff to areas where sufficient vegetated buffers exist (e.g., away from areas within 30 m of the Connection Line).

Existing infrastructure (e.g., roadways) will be used to separate surface runoff away from existing waterbodies, all existing water crossings (i.e., culverts) will be used to span identified watercourses. In all cases, the Project Location will be set back a minimum of 30 m from all waterbodies.

4.6.5 ***Monitoring Plans***

Ongoing, regular monitoring will occur during construction and decommissioning to ensure mitigation measures are installed and functioning as intended with no measurable effects to identified waterbodies. Upon completion of construction and decommissioning, regular (e.g., monthly) monitoring will continue until pre-construction conditions are restored. Stormwater management features are expected to be inspected on monthly basis with deficiencies noted for correction internally. In the event that ongoing monitoring enters the winter months, monitoring may be suspended until spring.

Table 4-1 identifies potential environmental effects and proposed mitigation measures with respect to Watercourse A and Kynoch Creek (identified to be within 120 m of the proposed Connection Line) as shown in Figure 3-1.

Table 4-1: Summary of Environmental Effects, Monitoring Requirements with Respect to Water Body Features

Negative Effect	Project Phase	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
				Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Increase in surface water runoff from Project Location.	Construction, Operations and Decommissioning	Maintain existing drainage patterns as much as possible. Retain and/or plant dense vegetation as soon as possible following construction. Stormwater management measures should be installed to control increases in runoff peak flows from the Project Location to pre-construction condition levels.	No impacts on water quantity/drainage patterns.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies).	Within 120 m of waterbodies.	During regular site inspections.	Visual monitoring of erosion would identify potential areas of concern.	Maintenance and improvement requirements actioned as needed and reported internally throughout monthly construction monitoring reports.	Erosion remediated as necessary to ensure no long-term erosion issues. Adjust stormwater management as needed.
Erosion of soils resulting in sedimentation of receiving waterbodies/ watercourses.	Construction, Operations and Decommissioning	Sediment and erosion controls will be installed and maintained between the Project Location and wetlands or watercourses where work is required within 50 m of wetlands or 120 m of water features.	No erosion from site over and above existing conditions.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies). Visual monitoring of erosion and sediment control measures to ensure they remain effective throughout construction.	Within 120 m of waterbodies.	During regular site inspections.	Visual monitoring of erosion would identify potential areas of concern.	Documented internally in monthly construction monitoring reports.	Erosion remediated as necessary to ensure no long-term erosion issues. Repair/restore erosion and sediment controls as needed.
Impacts to surface water quality due to accidental spills.	Construction, Operations and Decommissioning	Standard mitigation to prevent spills and minimize magnitude of spills if they occur.	No impacts to water quality due to spills.	Visual monitoring at transformer locations and monitoring of spill prevention measures.	Within 120 m of waterbodies.	During regular site inspections.	Visual monitoring would identify potential areas of concern and ensure that spill prevention and control measures are functioning as designed and protocols are being implemented as specified in plans to meet performance objectives.	All spills and remediation efforts to be reported to the Contractor's environmental site inspector and reported throughout monthly construction monitoring reports. Reportable spills in water or spills on land >100 L must be documented and reported immediately to the Ontario Spills Action Centre.	Spill contingency measures implemented as necessary in the event of a spill. Following spill event, response will be reviewed to determine if additional or altered response protocols are necessary to meet performance objectives.

5. References

Hatch Ltd. 2026. Project Description Report. H376108-0000-840-066-0001. Prepared for CarbonFree Kynoch Ltd.

Hatch Ltd. 2026. Construction Plan Report. H376108-0000-840-066-0008. Prepared for CarbonFree Kynoch Ltd.

Hatch Ltd. 2026. Design and Operations Plan Report. H376108-0000-840-066-0005. Prepared for CarbonFree Kynoch Ltd.

Hatch Ltd. 2026. Decommissioning Plan Report. H376108-0000-840-066-0007. Prepared for CarbonFree Kynoch Ltd.

Ontario Ministry of Natural Resource and Forestry (MNR). 2015. Inland Ontario Lakes Designated for Lake Trout Management.

Ontario Ministry of Natural Resources and Forestry (MNR). Make a Map: Natural Heritage Areas web application. Available at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US. Accessed May 10, 2025.

Ontario Ministry of Natural Resources and Forestry (MNR). Ontario's Crown Land Use Policy Atlas. Ontario Ministry of Natural Resources, Queen's Printer for Ontario. Available on-line at <http://www.gisapplication.lrc.gov.on.ca/CLUPA/Index.html?site=CLUPA&viewer=CLUPA&locale=en-US>. Accessed May 10, 2025.

Ontario Ministry of Natural Resources and Forestry (MNR). 2012. Land Information Ontario Data Description: Watercourses, Water Bodies. Queen's Printer for Ontario.