



Axio Power Canada Inc./
SunEdison Canada

Draft Natural Heritage Assessment
Records Review Report

For

Kingston Gardiner TS Unity Road
Solar Energy Project

H335467
Rev. F
July 15, 2011

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Project Report

July 15, 2011

**Axio Power Canada Inc./SunEdison Canada
Axio Gardiner TS Unity Road – Solar Energy Project**

Draft Natural Heritage Assessment Records Review Report

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1. Introduction

1.1 Project Description

Axio Power Canada Inc./SunEdison Canada (“Axio”) is proposing to develop and operate a 10 megawatt (MW) solar photovoltaic project titled Kingston Gardiner TS Unity Road Solar Energy Project (hereinafter referred to as the “Project”). The Project Location¹ is situated on an approximately 34 hectare (ha) parcel of land on Part of Lot 12, Concession 6, within the City of Kingston (single tier municipality), and within the Madoc Ecodistrict 6E-9 (Figure 1.1).

1.2 Renewable Energy Approval Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. As per Part II, Section 4 of the REA Regulation, ground mounted solar facilities with a name plate capacity greater than (>) 10 kilowatts (kW) are classified as Class 3 solar facilities and require an REA.

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to conduct a records review to identify whether the Project Location is:

- within 120 meters (m) of a provincial park or conservation reserve
- in a natural feature or within 120 m of a natural feature that is not an earth science Area of Natural and Scientific Interest (ANSI)
- within 50 m of earth science ANSI.

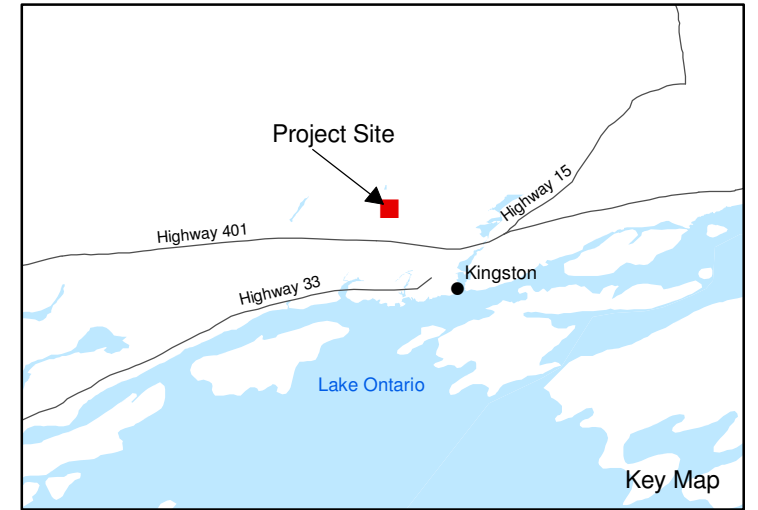
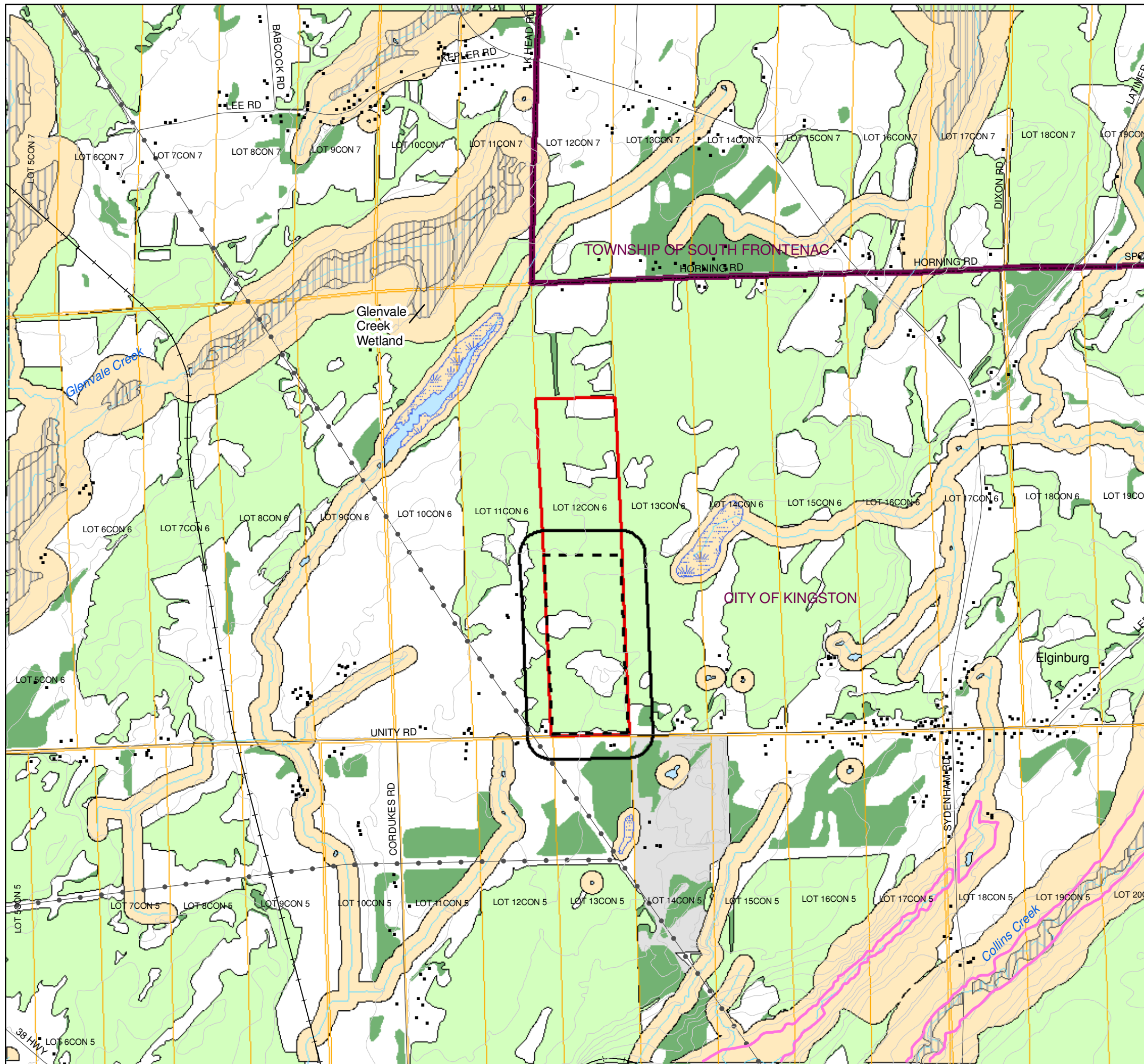
Natural features are defined in Part I, subsection 1 (1) of the REA Regulation to be all or part of the following:

- a) **ANSI (earth science)** – An area that has earth science values related to protection, scientific study or education.
- b) **ANSI (life science)** – An area that has life science values related to protection, scientific study or education.
- c) **Coastal wetland** – A wetland that is located on Lake Ontario, Lake Erie, Lake Huron, Lake Superior, Lake St. Clair, St. Mary’s River, St. Clair River, Detroit River, Niagara River or St. Lawrence River; or on a tributary to any of these waterbodies and, wither in whole or in part, downstream of a line located two km upstream of the 1:100 year floodline (includes wave run-up) of the waterbody.
- d) **Northern wetland** – A wetland located north of the northern limit of Ecoregions 5E, 6E and 7E as shown in Figure 1 in the Provincial Policy Statement issued under section 3 of the *Planning Act* and approved by the Lieutenant Governor in Council by Order in Council No. 140/2005.

¹ “Project Location means, when used in relation to a renewable energy project, 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 proposed to engage in the project” (O. Reg. 359/09, s. 1 (1)).

- e) **Southern wetland** – A wetland located south of the northern limit of Ecoregions 5E, 6E and 7E as shown in Figure 1 in the Provincial Policy Statement issued under section 3 of the *Planning Act* and approved by the Lieutenant Governor in Council by Order in Council No. 140/2005.
- f) **Valleyland** – A natural area that is south and east of the Canadian Shield as shown in Figure 1 in the Provincial Policy Statement issued under section 3 of the *Planning Act* and approved by the Lieutenant Governor in Council by Order in Council No. 140/2005; and that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.
- g) **Wildlife habitat** – An area where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species.
- h) **Woodland** – Land that is south and east of the Canadian Shield as shown in Figure 1 in the Provincial Policy Statement issued under section 3 of the *Planning Act* and approved by the Lieutenant Governor in Council by Order in Council No. 140/2005; and that has per hectare (ha) at least 1, 000 trees of any size or 750 trees that are > 5 centimetres (cm) in diameter, 500 trees that are > 12 cm in diameter, 250 trees that are > 20 cm in diameter that have been measured from 1.37 m from the ground.

Subsection 25 (3) of the REA Regulation requires the proponent to prepare a report “setting out a summary of the records searched and the results of the analysis” (O. Reg. 359/09). This *Natural Heritage Assessment Records Review Report* has been prepared to meet these requirements.



LEGEND

- Building
 - +— Railway
 - Road
 - Transmission Line
 - Watercourse
 - ▨ Authorized Aggregate Site
 - ▭ Municipality
 - ▭ Parcel
 - ▭ Project Location
 - ▭ 120 m from Project Location
 - ▭ Project Site
 - ▨ Provincially Significant Wetland
 - ▨ Unevaluated Wetland
 - ▨ Waterbody (OBM Mapping)
 - ▨ Woodland
- Cataraqui Region Conservation Authority Data**
- 100 Year Floodplain
 - ▨ CRCA Section 28 Regulations Screening Areas
 - ▨ Significant Woodland

Notes:
 1. OBM and NRVIS data downloaded from LIO, with permission.
 2. Spatial referencing UTM NAD 83, August 2010.
 3. Cataraqui Region Conservation Authority data provided by CRCA, Sept. 7, 2010

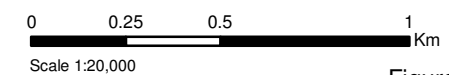


Figure 1.1
 Axiom Power Canada Inc.
 Kingston Gardiner TS Unity Road
 Natural Heritage Features



2. Methodology and Results

A search of published records from government and non-government information sources was completed to determine if the Project is located on or within 120 m of a natural feature (as defined in the REA Regulation), provincial park or conservation reserve, Niagara Escarpment Commission Plan Area or Oak Ridges Moraine Conservation Plan Area. Records related to these features that are maintained by the following information sources were reviewed in accordance with subsection 25 (1) of the REA Regulation and are discussed in the subsequent sections: Ontario Ministry of Natural Resources (MNR), Federal Government, Conservation Authority, Municipal Planning Authority or Local Planning Board, Local and Upper-tier Municipalities, Local Roads Board, Local Services Board, Niagara Escarpment Commission and Oak Ridges Moraine Conservation Plan.

The following information sources will not be discussed in further detail as they are not found within the jurisdiction or within 120 m of the Project Location: Municipal Planning Authority, Local Planning Boards, Local Roads Boards, Local Services Boards, Niagara Escarpment Commission Plan Area and Oak Ridges Moraine Conservation Plan Area.

Information on species of conservation concern (i.e., global, national, provincial and regional) that have been recorded on or have the potential to occur within the vicinity of the Project was also reviewed. Species of conservation concern include:

- **Globally rare species** – These species are assessed by NatureServe and assigned a global conservation status rank (G-rank) of G1 to G3.
- **Nationally rare species** – These species are designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered or Threatened and not protected in regulation under the *Ontario Endangered Species at Risk Act* (ESA).
- **Provincially rare species** – These species are designated by the MNR and assessed under two categories: species listed as Special Concern on the Species at Risk in Ontario (SARO) list; and species that are assigned a provincial (i.e., sub-national) conservation status rank of S1 to S3 and are not on the SARO list. There are species that can be found in both categories.
- **Regionally rare species** – These species are not assigned a formal designation, however, have been recognized as declining within a planning jurisdiction by government and/or non-government authorities.
- **Conservation priority species** – These include priority species that are recognized in government and/or non-government conservation plans and assigned a conservation objective.

Species that require greater protection and that are designated by COSEWIC and/or the Committee on the Status of Species at Risk in Ontario (COSSARO) may become listed as species at risk under the Federal Species at Risk Act (SARA) and/or the Ontario Endangered Species Act (ESA). Species identified in this report that are designated as Endangered or Threatened under the ESA on the SARO list will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.

The reporting format follows the requirements outlined in subsection 25 (3) of the REA Regulation. The wildlife and plant species discussed in the following sections are identified by common name

only. The common names of species are written according to the standard rule of lower-case letters for all species excluding birds and proper nouns, in which case it is capitalized (e.g., woodland vole, Blanding's turtle, Black Tern and Red-headed Woodpecker). Scientific names follow the binomial nomenclature system which is a standard method used to formulate the scientific name of an organism (e.g., *genus* name + *species* name). Where discrepancies in nomenclature occur for the same species (e.g., common stinkpot vs. eastern musk turtle), the common and scientific names adopted by the MNR (particularly species on the SARO list) will be used.

2.1 Ministry of Natural Resources Records

The following information sources from the MNR were reviewed for records related to natural features within 1 km² of the Project Location:

- **Land Information Ontario Mapping** – *Land Information Ontario* (LIO) data is maintained by the MNR and provides key provincial geospatial data about Ontario to subscribers. The shapefiles obtained from the LIO datasets were used to prepare a map showing the natural features on and within 120 m of the Project Location (MNR, 2010a).
- **Natural Heritage Information Center Biodiversity Explorer** – The *Natural Heritage Information Center* (NHIC) collects and maintains data on known records of species, vegetation communities, and other natural features within the province. This information is available through the Element Occurrence and Natural Areas database which can be accessed using the web-based NHIC Biodiversity Explorer Tool (NHIC, 2010). The special boundary layer was used to search within the 1 km map squares (18UQ70-47, 48, 49, 57, 58, 59, 67, 68, 69; 18UQ71-40, 50, 60) that overlaps the Project Location.
- **Ontario Crown Land Use Policy Atlas** – The *Ontario Crown Land Use Policy Atlas* is an interactive web browser that shows the boundaries of crown land use areas and associated land use policies. This interactive map was used to determine the presence of crown land within 1 km² of the Project Location (MNR, 2010b).
- **Ontario Herpetofaunal Summary Atlas** – The *Ontario Herpetofaunal Summary Atlas* (Oldham and Weller, 2000) is a database that provides information on the distribution of amphibians and reptiles in Ontario. This database is maintained by the NHIC and includes a compilation of current and historic records gathered from museum and university collections in Ontario and published and non-published literature. The distribution maps of amphibians and reptiles found in Ontario were reviewed to determine those species with ranges that overlap with the Project Location.
- **Renewable Energy Atlas** – The *Renewable Energy Atlas* is an interactive web tool that provides information related to wind and water renewable energy resources in the province. This map was accessed for specific information on natural features that are provided in the land use, base data and wildlife layers (MNR, 2010c). These layers are based on LIO geospatial datasets. The land use layer provides the following information: provincial and national parks, conservation reserves, ANSI's, natural heritage values areas, enhancement management areas, wilderness areas and crown game reserves. The base data provides information on coastal wetlands and the wildlife layer provides information on known bat hibernacula within a 10 km grid.

2.1.1 *LIO Mapping*

The following information related to natural features was obtained from the MNR LIO data (MNR, 2010a). The MNR LIO data does not provide information on species of conservation concern. A map showing the natural features within a broad area surrounding the Project Location is provided (Figure 1.1).

ANSI – A review of the ANSI data layer did not identify any earth science or life science ANSI's on or within 120 m of the Project Location.

Wetlands – The MNR LIO mapping did not identify any wetlands on or within 120 m of the Project Location. The nearest wetland is located 400 m east of the Project Location and is unevaluated.

Valleylands – The MNR LIO mapping did not identify any valleylands on or within 120 m of the Project Location.

Wildlife Habitat – The MNR LIO mapping did not identify any wildlife habitat types on or within 120 m of the Project Location.

Woodlands – A review of the wooded area data layer identified woodlands on and within 120 m of the Project Location. This data layer does not provide information on the significance of these woodlands. The presence and characteristics of these woodlands will be confirmed during the site investigation.

Provincial Parks and Conservation Reserves – A review of the Provincial park regulated and conservation reserve regulated data layers did not identify any provincial parks or conservation reserves on or within 120 m of the Project Location.

Other Information – There is an authorized aggregate site within the 120 m southeastern setback of the Project Location.

The MNR LIO mapping shows four buildings within 120 m of the Project Location (Figure 1.1). The LIO building layer data set obtained for the Project Location does not provide a description or include information on the building type (e.g., residence, commercial building, shed, barn, highway weigh scale, electric power station). Therefore, not all buildings shown on the LIO mapping represent residential dwellings and may include other structures.

2.1.2 *NHIC Biodiversity Explorer*

The NHIC Biodiversity Explorer Tool was accessed on August 27, 2010 and a geographic search of the Element Occurrence and Natural Areas database was completed for a 1 km² radius surrounding the Project Location (NHIC, 2010). The map squares used for the search were 18UQ47, 48, 49, 57, 58, 59, 67, 68, 69; 18UQ71-40, 50 and 60. The Biodiversity Explorer Tool (Element Occurrence Database and Natural Area Database) provides information on the following natural features: ANSI, wetlands, wildlife habitat and species of conservation concern. The NHIC Biodiversity Explorer Tool provided the following information:

ANSI – The results of the query of the Natural Area Database did not identify any records of earth science or life science ANSI's within the 1 km map squares that overlaps the Project Location.

Wetlands – The results of the query of the Natural Area Database did not identify any records of wetlands within the 1 km map squares that overlaps the Project Location.

Valleylands – The NHIC Element Occurrence and Natural Areas database does not provide information on valleylands.

Wildlife Habitat – The *Significant Wildlife Technical Guide* (MNR, 2000) identifies four main types of significant wildlife habitat: habitats of seasonal concentrations of animals, rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors. The Element Occurrence Database provided the following information on wildlife habitat:

- **Wildlife Concentration Areas** – The wildlife concentration data layer provides information on the following information for habitat of seasonal concentration of animals:
 - ♦ **Colonial Waterbird Nesting Area** – The results of the query did not identify any records of colonial waterbird nesting areas within the 1 km map squares that overlaps the Project Location.
 - ♦ **Freshwater Mussel Concentration Area** – The results of the query did not identify any records of freshwater mussel concentration areas within the 1 km map squares that overlaps the Project Location.
 - ♦ **Mixed Wader Nesting Colony** – The results of the query did not identify any records of mixed wader nesting colonies within the 1 km map squares that overlaps the Project Location.
 - ♦ **Raptor Winter Concentration Area** – The results of the query did not identify any records of raptor winter concentration areas within the 1 km map squares that overlaps the Project Location.
 - ♦ **Shorebird Migratory Concentration Area** – The results of the query did not identify any records of shorebird migratory concentration areas within the 1 km map squares that overlaps the Project Location.
 - ♦ **Waterfowl Concentration Area** – The results of the query did not identify any records of waterfowl concentration areas within the 1 km map squares that overlaps the Project Location.
- **Rare Vegetation Communities** – The plant community data layer provides information on globally (G-rank: G1 to G3) and provincially (S-rank: S1 to S3) rare plant communities. The results of the query of the Element Occurrence Database did not identify any records of rare plant communities within the 1 km map squares that overlaps the Project Location.

Habitat of Species of Conservation Concern – The species data layer was used to identify species of conservation concern that have been recorded within the 1 km map squares that overlap with the Project Location. The following species of conservation concern were identified within the 1 km map squares that overlaps the Project Location. These species will be considered during the site investigation.

- **Endangered and Threatened Species on the SARO List** – Species that are designated as Endangered or Threatened on the SARO list are protected under the provisions of the ESA 2007

and will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.

- **National and Provincial Rare Species** – The Element Occurrence database did not identify any species designated as Special Concern by COSEWIC and on the SARO list, within the 1 km map squares that overlaps the Project Location. However, the following species are provincially rare according to a provincial conservation status rank of S1 to S3:

Insects

- Juniper hairstreak – Butterfly (*Callophrys gryneus*) – G5, S2 – Seen in 1984

Mosses, Liverworts and Hornworts

- A Moss (*Grimmia olneyi*) – G3G5, S2 – Seen in 1868

Plants

- Brainerd's hawthorn (*Crataegus brainerdii*) – G5, S2 – Seen in 1982
 - Branching burreed (*Sparganium androcladum*) – G4G5, SH – Seen in 1897
 - Bowman's-root (*Porteranthus trifolius*) – G4G5, SX – Seen in 1886
 - Smith's bulrush (*Schoenoplectus smithii*) – G5?, S3 – Seen in 1932
 - Stiff gentian (*Gentianella quinquefolia*) – G5, S2 – Seen in 1883
- **Global and Regionally Rare Species** – The following species are assigned a global conservation rank (G-rank) of G1 to G3 or have been recognised as declining within the planning jurisdiction by government and/or non-government authorities:

Mosses, Liverworts and Hornworts

- A Moss (*Grimmia olneyi*) – G3G5, S2 – Seen in 1868

Woodlands – The NHIC databases do not provide a data layer specific to woodlands. However, the data layers provided in the Natural Areas Database (e.g., wetland, forest reserves, wilderness areas, national and provincial parks) may be useful in determining the presence of woodlands. The results of the query of the Natural Areas Database did not provide records of natural areas within the 1 km map squares that overlaps the Project Location.

Provincial Parks and Conservation Reserves – The Natural Areas database provides information on provincial parks and conservation reserves. A geographic query of the natural areas was completed and there were no provincial parks or conservation reserves identified within the 1 km map squares that overlaps the Project Location.

Other Natural Areas – The natural areas database also provides information on national parks, crown game preserves, first nation reserves, forest reserves, migratory bird sanctuaries, national wildlife areas, non-government conservation easements, natural heritage properties, nature reserves and trust lands, provincial wildlife areas, Ramsar sites², resource management areas, wilderness areas

² A Ramsar site is a wetland of international importance as defined by the Ramsar Convention for the conservation and sustainable utilization of wetlands, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value.

and important bird areas. The results of the query did not identify any records of these natural areas within the 1 km map squares that overlaps the Project Location.

2.1.3 **Ontario Crown Land Use Atlas Mapping**

The *Crown Land Use Policy Atlas* interactive map (MNR, 2010b) was accessed on August 27, 2010, and reviewed to determine if there is crown land on and within 120 m of the Project Location. This map did not identify any crown land within 1 km of the Project Location.

2.1.4 **Ontario Herpetofaunal Summary Atlas**

A review of the *Ontario Herpetofaunal Summary Atlas* (Oldham and Weller, 2000) was completed to determine if there are species of conservation concern that have the potential to occur on and within 120 m of the Project Location. The *Ontario Herpetofaunal Summary Atlas* (Oldham and Weller, 2000) identified several species of reptile and amphibian, including species of conservation concern whose ranges overlap with the Project Location. The conservation rank, status and any other designations for these species are provided in Table 2.1.

Species of Conservation Concern – The following species of conservation concern have ranges that overlap with the Project Location. These species will be considered during the site investigation.

- **Endangered and Threatened Species on the SARO list** – Species that are designated as Endangered or Threatened on the SARO list are protected under the provisions of the ESA 2007 and will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.
- **National and Provincial Rare Species** – The species listed below fall into one or two of the following categories: 1) designated as Endangered or Threatened by COSEWIC, but are not protected in regulation under the ESA, 2) designated as Special Concern by COSEWIC and on the SARO list, or 3) have a provincial conservation status rank of S1 to S3:

Frogs

- ♦ Western chorus frog (*Pseudacris triseriata*) G5TNR, S3 – Great Lakes / St. Lawrence Canadian Shield Population – Listed as Threatened by COSEWIC but not at risk on the SARO list

Salamanders

- ♦ Jefferson x blue-spotted salamander (*Ambystoma jeffersonianum x laterale* "complex") (Jefferson dominated genome) – Provincially rare based on a conservation rank of S2

Lizards

- ♦ Five-lined skink (*Plestiodon fasciatus*) G5T4, S3 – Southern Shield Population – Listed as Special Concern by COSEWIC and on the SARO list

Snakes

- ♦ Milksnake (*Lampropeltis triangulum*) G5, S3 – Listed as Special Concern by COSEWIC and on the SARO list
- ♦ Eastern ribbonsnake (*Thamnophis sauritus*) G5, S3 – Great Lakes Population – Listed as Special Concern by COSEWIC and on the SARO list

Turtles

- ◆ Northern map turtle (*Graptemys geographica*) G5, S3 – Listed as Special Concern by COSEWIC and on the SARO list
- ◆ Snapping turtle (*Chelydra serpentina*) G5, S3 – Listed as Special Concern by COSEWIC and on the SARO list

Global and Regionally Rare Species – The *Ontario Herpetofaunal Summary Atlas* (Oldham and Weller, 2000) does not identify any globally (G1 to G3) or regionally rare species whose ranges overlap with the Project Location.

Table 2.1 Amphibians and Reptiles Potentially Occurring Within the Kingston Gardiner TS Unity Road Solar Energy Project Location¹ and their Conservation Status

Species		Conservation Rank ²		At Risk Status		
Common Name	Scientific Name	Global GRANK	Ontario SRANK ³	COSEWIC	SARA	SARO/ESA
Frogs and Toads						
American bullfrog	<i>Rana castebiana</i>	G5	S4	-	-	-
American toad	<i>Bufo americanus</i>	G5	S5	-	-	-
Gray treefrog	<i>Hyla versicolor</i>	G5	S5	-	-	-
Green frog	<i>Rana clamitans</i>	G5	S5	-	-	-
Mink frog	<i>Rana septentrionalis</i>	G5	S5	-	-	-
Northern leopard frog	<i>Rana pipiens</i>	G5	S5	NAR	-	NAR
Pickereel frog	<i>Rana palustris</i>	G5	S4	NAR	-	NAR
Spring peeper	<i>Pseudacris crucifer</i>	G5	S5	-	-	-
Western chorus frog	<i>Pseudacris triseriata</i>	G5TNR	S3	THR	THR (Schedule 1, Great Lakes / St. Lawrence Canadian Shield Population)	NAR
Wood frog	<i>Rana sylvatica</i>	G5	S5	-	-	-
Lizards						
Five-lined skink (Southern Shield Population)	<i>Plestiodon fasciatus</i>	G5T4	S3	SC	SC (Schedule 3, Southern Shield Population)	SC
Salamanders						
Common mudpuppy	<i>Necturus maculosus</i>	G5	S4	NAR	NAR	NAR
Eastern red-backed salamander	<i>Plethodon cinereus</i>	G5	S5	-	-	-
Four-toed salamander	<i>Hemidactylium scutatum</i>	G5	S4	NAR	NAR	NAR
Jefferson x blue-spotted salamander (Jefferson dominated genome)	<i>Ambystoma jeffersonianum x laterale</i> "complex"	GNA	S2	-	-	-
Northern two-lined salamander	<i>Eurycea bislineata</i>	G5	S4	-	-	-
Red-spotted newt	<i>Notophthalmus viridescens viridescens</i>	G5	S5	-	-	-

Species		Conservation Rank ²		At Risk Status		
Common Name	Scientific Name	Global GRANK	Ontario SRANK ³	COSEWIC	SARA	SARO/ESA
Spotted salamander	<i>Ambystoma maculatum</i>	G5	S4	-	-	-
Snakes						
Dekay's brownsnake	<i>Storeria dekari</i>	G5	S5	NAR	-	NAR
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	G5T5	S5	-	-	-
Milksnake	<i>Lampropeltis triangulum</i>	G5	S3	SC	SC (Schedule 1)	SC
Eastern ribbonsnake	<i>Thamnophis sauritus</i>	G5	S3	SC	SC (Schedule 1, Great Lakes Population)	SC
Northern redbelly snake	<i>Storeria occipitomaculata occipitomaculata</i>	G5T5	S5	-	-	-
Northern ringneck snake	<i>Diadophis punctatus edwardsi</i>	G5	S4	-	-	-
Northern water snake	<i>Nerodia sipedon sipedon</i>	G5T5	S5	NAR	-	NAR
Smooth green snake	<i>Liochlorophis vernalis</i>	G5	S4	-	-	-
Turtles						
Midland painted turtle	<i>Chrysemys picta marginata</i>	G5T5	S5	-	-	-
Northern map turtle	<i>Graptemys geographica</i>	G5	S3	SC	SC (Schedule 1)	SC
Snapping turtle	<i>Chelydra serpentina</i>	G5	S3	SC	-	SC

¹ As determined from potential climatic domain maps in McKenney *et al.* (2007) and range maps provided in Oldham and Weller (2000).

² Accessed from NHIC, 2010.

³ Nature Conservancy Ranking (NHIC, 2010); 1 = Critically Imperiled, 2 = Imperiled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure, E = Exotic, G = Global Level, GNA = Species Not Applicable (A global conservation status rank is not applicable because the species is not a suitable target for conservation activities), H = Historical Occurrence, N = National Level, NAR = Not At Risk, S = Sub-national Rank (Ontario), SNA = Species Not Applicable (A sub-national conservation status rank is not applicable because the species is not a suitable target for conservation activities), R = Local Status not available, U = Unknown, X = Extinct, ? = Rank Uncertain.

2.1.5 **Renewable Energy Atlas**

The *Renewable Energy Atlas* (MNR, 2010c) was reviewed for information related to natural features, provincial parks, conservation reserves and other land use information within 120 m of the Project Location. The following information was provided:

ANSI – The land use layer provides information on ANSI's. This layer did not identify any earth science or life science ANSI's on or within 120 m of the Project Location.

Wetlands – The base data layer provides information on coastal wetlands only. This layer did not identify this feature on or within 120 m of the Project Location.

Valleylands – Information on valleylands is not included in the layers provided in the *Renewable Energy Atlas*.

Wildlife Habitat – The wildlife layer provides information on known bat hibernacula within a 10 km² grid. This layer did not identify this feature within 10 km² of the Project Location.

Woodlands – Information on woodlands is not included in the layers provided in the *Renewable Energy Atlas* (MNR, 2010c).

Provincial Parks and Conservation Reserves – The land use layer provides information on provincial parks and conservation reserves. This layer did not identify these features on or within 120 m of the Project Location.

2.2 **Federal Government Records**

The following online information sources from the Federal government were reviewed for records related to natural features within 1 km of the Project Location:

- **Environment Canada** – The Environment Canada website was searched for information on natural features within a minimum distance of 1 km from the Project Location. The information sources reviewed were from the Canadian Wildlife Service, Environment Canada and are discussed further in Section 2.2.1.
- **Natural Resources Canada** – The Natural Resources Canada website was searched for information on natural features, including species of conservation concern, within a minimum distance of 1 km from the Project Location. The information sources reviewed from Natural Resources Canada included the *Amphibian and Reptile of Ontario Climate Domain Maps* (McKenney *et al.*, 2007). This online resource provides the spatial distribution and habitat requirements of amphibians and reptiles found within Ontario. The maps show the bioclimatic domain of each species at a 1 km resolution across the entire province. Those species with distribution ranges that overlap with the Project Location were reviewed and are discussed in Section 2.2.2.

2.2.1 **Canadian Wildlife Service and Environment Canada**

The Canadian Wildlife Service and Environment Canada websites were reviewed. No information relevant to the Project Location was available from these sources.

2.2.2 *Natural Resources Canada's Amphibians and Reptiles of Ontario Climate Domain Maps*

A review of the Natural Resources Canada *Amphibians and Reptiles of Ontario Climate Domain Maps* (McKenney *et al.*, 2007) was completed to determine if there are species of conservation concern that have the potential to occur on and within 120 m of the Project Location.

Species of Conservation Concern – The following species of conservation concern have ranges that overlap the Project Location according to the *Amphibians and Reptiles of Ontario Climate Domain Maps* (McKenney *et al.*, 2007). The conservation rank, status and any other designations for these species are provided in Table 2.1. These species of conservation concern will be considered during the site investigation.

- **Endangered and Threatened Species on the SARO list** – Species that are designated as Endangered or Threatened on the SARO list are protected under the provisions of the ESA 2007 and will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.
- **National and Provincial Rare Species** – The species listed below fall into one or two of the following categories: 1) designated as Endangered or Threatened by COSEWIC, but are not protected in regulation under the ESA, 2) designated as Special Concern by COSEWIC and on the SARO list, or 3) have a provincial conservation status rank of S1 to S3:

Frogs

- ♦ Western chorus frog (*Pseudacris triseriata*) G5TNR, S3 – Great Lakes / St. Lawrence Canadian Shield Population – Listed as Threatened by COSEWIC but not at risk on the SARO list

Lizards

- ♦ Five-lined skink (*Plestiodon fasciatus*) G5T4, S3 – Southern Shield Population – Listed as Special Concern by COSEWIC and on the SARO list

Snakes

- ♦ Milksnake (*Lampropeltis triangulum*) G5, S3 – Listed as Special Concern by COSEWIC and on the SARO list

Turtles

- ♦ Northern map turtle (*Graptemys geographica*) G5, S3 – Listed as Special Concern by COSEWIC and on the SARO list
- ♦ Snapping turtle (*Chelydra serpentina*) G5, S3 – Listed as Special Concern by COSEWIC and on the SARO list
- **Global and Regionally Rare Species** – The *Amphibians and Reptiles of Ontario Climate Domain Maps* (McKenney *et al.*, 2007) does not identify any globally (G1 to G3) or regionally rare species whose ranges overlap with the Project Location.

2.3 Conservation Authority Records

The Project Location is situated within the jurisdiction of the Cataraqui Region Conservation Authority (CRCA). Information related to natural feature within the vicinity of the Project Location was provided by the CRCA in a letter dated August 23, 2010 (Appendix B). The information and

comments provided by the CRCA are discussed below with respect to the natural features identified in subsection 1 (1) of the REA Regulation.

ANSI – The CRCA did not provide comments on the presence and/or absence of ANSI's on or within 120 m of the Project Location.

Wetlands – The CRCA did not provide comments on the presence and/or absence of wetlands on or within 120 m of the Project Location.

Valleylands – The CRCA did not provide comments on the presence and/or absence of valleylands on or within 120 m of the Project Location.

Wildlife Habitat – The CRCA did not provide comments on the presence and/or absence of wildlife habitat on or within 120 m of the Project Location. The CRCA suggested the MNR be contacted.

Woodlands – The CRCA identified the woodlands on and within 120 m of the Project Location as significant based on the Central Cataraqui Region Natural Heritage Study (CCRNHS). The wooded area was identified as significant based on its area and presence of interior habitat.

Provincial Parks and Conservation Reserves – The CRCA did not provide comments on the presence and/or absence of provincial parks or conservation reserves on or within 120 m of the Project Location.

2.4 Municipal Records

The City of Kingston (single-tier municipality) Official Plan (2010) was reviewed for information related to natural features within the vicinity of the Project Location. The following information was obtained:

ANSI – ANSI's are shown on Schedule 7-B (Natural Heritage Area "A") of the City of Kingston Official Plan (2010). There is no ANSI's on or within 120 m of the Project Location. The closest ANSI is located approximately 5 km south east of the Project Location.

Wetlands – Locally and provincially significant wetlands are shown on Schedule 7-B (Natural Heritage Area "A") while unevaluated wetlands are shown on Schedule 8-B (Natural Area "B") of the City of Kingston Official Plan (2010). Schedule 7-B and Schedule 8-B do not show any wetlands on or within 120 m of the Project Location.

Valleylands – Valleylands are shown on Schedule 8-B (Natural Area "B") of the City of Kingston Official Plan (2010). Schedule 8-B does not show any valleylands on or within 120 m of the Project Location.

Wildlife Habitat – Wildlife habitat is shown on Schedule 3-B (Land Use) under the Environmental Protection and is discussed in Section 3 of the City of Kingston Official Plan (2010).

The Environmental Protection Areas recognizes lands that have inherent environmental sensitivity. Such locations coincide with flood prone locations which are hazardous to *development*, based on the probability of a 100-year storm event and *wave uprush* conditions. The Environmental Protection Areas include:

- areas of natural and scientific interest (ANSIs)
- significant aquatic or wildlife habitat areas
- provincially significant wetlands, coastal wetlands and locally significant wetlands
- habitat of endangered and threatened species
- habitat of species tracked by the Ministry of Natural Resources' Natural Heritage Information Centre; and
- all land within the regulatory floodplain, which include areas subject to wave uprush and erosion.

There is no Environmental Protection Areas on and within 120 m of the Project Location.

According to Schedule 8-B (Natural Area "B"), there are no linkages and corridors or environmentally sensitive areas on or within 120 m of the Project Location. Also, according to Schedule 7-B (Natural Heritage Area "A"), there are no sensitive species areas found on or within 120 m of the Project Location.

Species of Conservation Concern – Section 6 of the City of Kingston Official Plan (2010) mentions that development and site alteration will not be permitted on significant habitat of Endangered and Threatened species. Land shown as Natural Heritage "A" (ANSI, locally and provincially significant wetland, sensitive species, riparian habitat) on Schedule 7-B of the City of Kingston Official Plan (2010), as well as significant habitat of Endangered or Threatened species shown only on Ministry of Natural Resources maps, but not on Official Plan Schedules, are generally required to be retained in a natural state. Schedule 7-B do not show any Natural Heritage Area "A" on or within 120 m of the Project Location.

Woodlands – Schedule 8-B (Natural Area "B") of the City of Kingston Official Plan (2010) identifies contributory and significant woodlands on and within 120 m of the Project Location. The presence and characteristics of these woodlands will be confirmed during the site investigation. Section 6 of the City of Kingston Official Plan (2010) mentions that development and site alteration will not be permitted in significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural heritage features or areas or ecological functions.

Provincial Parks and Conservation Reserves – The Schedules in the City of Kingston Official Plan (2010) do not identify provincial parks or conservation reserves.

Other Natural Areas – Schedule 3 (Land Use) shows a quarry within the southeast 120 m setback of the Project Location. Schedule 11 (Constraint Mapping) does not show any Natural Hazard Area on or within 120 m of the Project Location. Schedule 13 (Detailed Planning Areas) does not show any Conservation Area on or within 120 m of the Project Location.

2.5 Non-Government Records

In addition to the sources identified previously, the following records were also reviewed:

2.5.1 *Atlas of the Mammals of Ontario*

A review of the *Atlas of the Mammals of Ontario* (Dobbyn, 1994) was completed to determine those mammal species that have the potential to occur on and within 120 m of the Project Location and are considered species of conservation. Forty species with ranges that overlap with the Project Location were identified, including species of conservation concern. The conservation rank, status and any other designations for these species are provided in Table 2.2.

Species of Conservation Concern – The following species of conservation concern have ranges that overlap with the Project Location. These species will be considered during the site investigation.

- **Endangered and Threatened Species on the SARO list** – Species that are designated as Endangered or Threatened on the SARO list are protected under the provisions of the ESA 2007 and will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.
- **National and Provincial Rare Species** – The *Atlas of the Mammals of Ontario* (Dobbyn, 1994) did not identify any nationally rare species. However, the following species are provincially rare based on a conservation rank of S1 to S3.
 - ◆ Eastern pipistrelle (*Pipistrellus subflavus*) – Provincially rare based on a conservation rank of S3?
 - ◆ Northern long-eared bat (*Myotis septentrionalis*) – Provincially rare based on a conservation rank of S3?
- **Global and Regionally Rare Species** – The *Atlas of the Mammals of Ontario* (Dobbyn, 1994) does not identify any globally (G1 to G3) or regionally rare species whose ranges overlap with the Project Location.

Table 2.2 Mammal Species Potentially Occurring at the Kingston Gardiner TS Unity Road Solar Energy Project Location¹

Species ¹		Conservation Rank ²		At Risk Status		
Common Name	Scientific Name	Global GRANK	Ontario SRANK ³	COSEWIC	SARA	SARO/ESA
Bats						
Big brown bat	<i>Eptesicus fuscus</i>	G5	S5	-	-	-
Eastern pipistrelle	<i>Pipistrellus subflavus</i>	G5	S3?	-	-	-
Hoary bat	<i>Lasiurus cinereus</i>	G5	S4	-	-	-
Little brown bat	<i>Myotis lucifuga</i>	G5	S5	-	-	-
Silver-haired bat	<i>Lasionycteris noctivagans</i>	G5	S4	-	-	-
Northern long-eared bat	<i>Myotis septentrionalis</i>	G4	S3?	-	-	-
Carnivores						
Black bear	<i>Ursus americanus</i>	G5	S5	-	-	-
Coyote	<i>Canis latrans</i>	G5	S5	-	-	-
Ermine	<i>Mustela erminea</i>	G5	S5	-	-	-
Gray wolf	<i>Canis lupus</i>	G4	S4	-	-	-
Mink	<i>Mustela vison</i>	G5	S4	-	-	-
Raccoon	<i>Procyon lotor</i>	G5	S5	-	-	-
Red fox	<i>Canis latrans</i>	G5	S5	-	-	-
River otter	<i>Lontra canadensis</i>	G5	S5	-	-	-
Striped skunk	<i>Mephitis mephitis</i>	G5	S5	-	-	-
Opossums						
Virginia opossum	<i>Didelphis virginiana</i>	G5	S4	-	-	-
Rabbits and Hares						
Eastern cottontail	<i>Sylvilagus floridanus</i>	G5	S5	-	-	-
European hare	<i>Lepus europaeus</i>	G5	SNA	-	-	-
Snowshoe hare	<i>Lepus americanus</i>	G5	S5	-	-	-
Rodents						
Beaver	<i>Castor canadensis</i>	G5	S5	-	-	-
Deer mouse	<i>Peromyscus maniculatus</i>	G5	S5	-	-	-
Eastern chipmunk	<i>Tamias striatus</i>	G5	S5	-	-	-
Eastern gray squirrel	<i>Sciurus carolinensis</i>	G5	S5	-	-	-
House mouse	<i>Mus musculus</i>	G5	SNA	-	-	-
Meadow jumping mouse	<i>Zapus hudsonius</i>	G5	S5	-	-	-
Meadow vole	<i>Microtus pennsylvanicus</i>	G5	S5	-	-	-
Muskrat	<i>Ondatra zibethicus</i>	G5	S5	-	-	-
Norway rat	<i>Rattus norvegicus</i>	G5	SNA	-	-	-
Porcupine	<i>Erethizon dorsatum</i>	G5	S5	-	-	-
Red squirrel	<i>Tamiasciurus hudsonicus</i>	G5	S5	-	-	-
Southern flying squirrel	<i>Glaucomys volans</i>	G5	S4	-	-	-

Species ¹		Conservation Rank ²		At Risk Status		
Common Name	Scientific Name	Global GRANK	Ontario SRANK ³	COSEWIC	SARA	SARO/ESA
White-footed mouse	<i>Peromyscus leucopus</i>	G5	S5	-	-	-
Woodchuck	<i>Marmota monax</i>	G5	S5	-	-	-
Woodland jumping mouse	<i>Napaeozapus insignis</i>	G5	S5	-	-	-
Shrews and Moles						
Common shrew	<i>Sorex cinereus</i>	G5	S5	-	-	-
Hairy-tailed mole	<i>Parascalops breweri</i>	G5	S4	-	-	-
Northern short-tailed shrew	<i>Blarina brevicauda</i>	G5	S5	-	-	-
Pygmy shrew	<i>Sorex hoyi</i>	G5	S4	-	-	-
Star-nosed mole	<i>Condylura cristata</i>	G5	S5	-	-	-
Ungulates						
White-tailed deer	<i>Odocoileus virginianus</i>	G5	S5	-	-	-

¹ Based on Range Maps provided in Dobbyn, 1994.

² Accessed from NHIC, 2010

³ Nature Conservancy Ranking (NHIC, 2010); 1 = Critically Imperiled, 2 = Imperilled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure, E = Exotic, G = Global Level, H = Historical Occurrence, N = National Level, NAR = Not At Risk, S = Sub-national Rank (Ontario), SNA = Species Not Applicable (A conservation status rank is not applicable because the species is not a suitable target for conservation activities), R = Local Status not available, U = Unknown, X = Extinct, ? = Rank Uncertain.

2.5.2 Great Lakes Conservation Blueprint for Terrestrial Biodiversity

The *Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2: Ecodistrict Summaries* (Henson and Brodribb, 2005), identifies several species of conservation concern and vegetation communities that are rare or considered important to conservation within the Madoc Ecodistrict 6E-9.

Wildlife Habitat – The following rare vegetation communities and species of conservation concern have been recorded within the Madoc Ecodistrict 6E-9.

- **Rare Vegetation Communities** – The vegetation community types that are identified as globally or provincially rare or rare within the planning area for the Project (i.e., Madoc Ecodistrict 6E-9) will be considered during the site investigation.
 - ♦ **Global, Provincial and Regionally Rare Vegetation Communities**
 - Common Juniper – Fragrant Sumac – Hairy Beardtongue Alvar Shrubland – Globally and provincially rare based on conservation ranks of G2?, S2
 - Dry – fresh White Pine Coniferous Forest Type – Globally rare based on a conservation rank of G3G4
 - Dry Bur Oak – Shagbark Hickory Tallgrass Woodland Type – Globally and provincially rare based on conservation ranks of G?, S1
 - Moist – Fresh Sugar Maple – Black Maple Deciduous Forest Type – Globally and provincially rare based on conservation ranks of G?, S3?

- Philadelphia Panic Grass – False Pennyroyal Alvar Pavement Type – Globally and provincially rare based on conservation ranks of G1Q, S1
- Red Cedar – Early Buttercup Treed Alvar Grassland Type – Globally and provincially rare based on conservation ranks of G2?, S2
- Tufted Hairgrass – Canada Bluegrass – Philadelphia Panic Grass Alvar Grassland Type – Globally and provincially rare based on conservation ranks of G2G3, S2S3
- White Cedar – Jack Pine – Shrubby Cinquefoil Treed Alvar Pavement – Globally and provincially rare based on conservation ranks of G1G2, S1
- White Cedar – White Spruce – Philadelphia Panic Grass Treed Alvar Grassland Type – Globally and provincially rare based on conservation ranks of G3?, S3
- Winterberry Organic Thicket Swamp Type – Globally and provincially rare based on conservation ranks of G3G4Q, S3S4
- ♦ **Other Designations** – There are eight vegetation communities within Madoc Ecodistrict 6E-9 that are not rare but considered high-quality and important to conservation (Henson and Brodribb, 2005). These include:
 - Dry – Fresh Sugar Maple – Ironwood deciduous Forest Type (G?, S5)
 - Dry – Fresh Sugar Maple – Oak Deciduous Forest Type (G?, S5)
 - Dry – Fresh White Pine – Sugar Maple Mixed Forest Type (G?, S5)
 - Fresh-Sugar Maple – Beech Deciduous Forest Type (G5?, S5)
 - Moist – Fresh White Cedar – Birch – Aspen Mixed Forest Type (G5Q, S5)
 - Narrow-leaved Sedge Organic Shallow Marsh Type (G4?, S5)
 - Slender Sedge Graminoid Fen Type(G4G5, S5)
 - Tamarack Treed Fen Type (G4?, S5).

Species of Conservation Concern – Species of conservation concern have been identified in the *Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2: Ecodistrict Summaries* (Henson and Brodribb, 2005). The following species of conservation concern will be considered during the site investigation:

- **Endangered and Threatened Species on the SARO list** – Species that are designated as Endangered or Threatened on the SARO list are protected under the provisions of the ESA 2007 and will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.
- **National and Provincial Rare Species** – The species listed below fall into one or two of the following categories: 1) designated as Endangered or Threatened by COSEWIC, but are not protected in regulation under the ESA, 2) designated as Special Concern by COSEWIC and on the SARO list, or 3) have a provincial conservation status rank of S1 to S3:

Moss

- ◆ A moss (*Bryum gemmiparum*) G3G5, S1 – Provincially rare based on a conservation rank of S1

Plants

- ◆ Drooping bluegrass (*Poa languida*) G3G4Q, S3 – Provincially rare based on a conservation rank of S3
- ◆ Smooth woodsia (*Woodsia glabella*) G5, S3 – Provincially rare based on a conservation rank of S3

Birds

- ◆ Black Tern (*Chlidonias niger*) G4, S3B – Listed as Special Concern on the SARO list
- ◆ Louisiana Waterthrush (*Seiurus motacilla*) G5, S3B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
- ◆ Red-headed Woodpecker (*Melanerpes erythrocephalus*) G5, S4B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
- ◆ Yellow Rail (*Coturnicops noveboracensis*) G4, S4B – Listed as Special Concern by COSEWIC and on the SARO list

Lizards

- ◆ Five-lined skink (*Plestiodon fasciatus*) G5T4, S3 – Southern Shield Population – Listed as Special Concern by COSEWIC and on the SARO list
- **Global and Regionally Rare Species** – The moss (*Bryum gemmiparum*) (G3G5) and drooping bluegrass (*Poa languida*) (G3G4Q) are also consider globally rare based on a global rank of G1 to G3.

2.5.3 Important Bird Areas of Canada

Important Bird Areas are discrete sites that support specific groups of birds: threatened birds, large groups of birds, and birds restricted by range or by habitat. According to the website review, the Project Location is approximately 1.5 km north east of the Nappanee Limestone Plain (ON 152) Important Bird Areas (Bird Studies Canada, 2010).

2.5.4 Ontario Breeding Bird Atlas

Map square 18UQ70 of the *Ontario Breeding Bird Atlas* (OBBA) overlaps the Project Location, though as the site is not centrally located on that map square, the adjacent map square 18UQ71 was also reviewed (Bird Studies Canada *et al.*, 2006). The OBBA provides a list of bird species that have been observed within the 10 x 10 km² area during the 1981 to 1985 and 2001 to 2005 surveys (Appendix A). Several species, including species of conservation concern, were identified within the 10 x 10 km² map squares as having the potential to occur on or within 120 m of the Project Location.

Species of Conservation Concern – The following species of conservation concern were recorded within 10 km² of the Project Location. These species will be considered during the site investigation.

- **Endangered and Threatened Species on the SARO list** – Species that are designated as Endangered or Threatened on the SARO list are protected under the provisions of the ESA 2007 and will be discussed in further detail in the *Approval and Permitting Requirements Document for Renewable Energy Projects*.
- **National and Provincial Rare Species** – There are three possibilities: 1) The following species are designated as Endangered or Threatened by COSEWIC, but are not protected in regulation under the ESA or 2) these species are designated as Special Concern by COSEWIC and on the SARO list or 3) these species have a provincial conservation status rank of S1 to S3:
 - ◆ Bald Eagle (*Haliaeetus leucocephalus*) G5, S2B – Listed as Special Concern on the SARO list
 - ◆ Black-crowned Night-heron (*Nycticorax nycticorax*) – Provincially rare based on a conservation rank of S3B, S3N
 - ◆ Black Tern (*Chlidonias niger*) G4, S3B – Listed as Special Concern on the SARO list
 - ◆ Canada Warbler (*Wilsonia canadensis*) G5, S4B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
 - ◆ Caspian Tern (*Hydroprogne caspia*) – Provincially rare based on a conservation rank of S3B
 - ◆ Common Nighthawk (*Chordeiles minor*) G5, S4B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
 - ◆ Forster's Tern (*Sterna forsteri*) G5, S3B – Provincially rare based on a conservation rank of S3B
 - ◆ Golden-winged Warbler (*Vermivora chrysoptera*) G4, S4B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
 - ◆ Great Black-backed Gull (*Larus marinus*) G5, S2B – Provincially rare based on a conservation rank of S2B
 - ◆ Louisiana Waterthrush (*Seiurus motacilla*) G5, S3B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
 - ◆ Olive-sided Flycatcher (*Contopus cooperi*) G4, S4B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
 - ◆ Redhead (*Aythya americana*) – Provincially rare based on a conservation rank of S2B, S4N
 - ◆ Red-headed Woodpecker (*Melanerpes erythrocephalus*) G5, S4B – Listed as Threatened by COSEWIC and Special Concern on the SARO list
 - ◆ Short-eared Owl (*Asio flammeus*) G5, S2N, S4B – Listed as Special Concern by COSEWIC and on the SARO list
 - ◆ Yellow-breasted Chat (*Icteria virens*) G5, S2B – Listed as Special by COSEWIC and on the SARO list
 - ◆ Wilson's Phalarope (*Phalaropus tricolor*) – Provincially rare based on a conservation rank of S3B
 - ◆ Global and Regionally Rare Species – The OBBA (Bird Studies Canada et al., 2006) does not identify any globally (G1 to G3) or regionally rare species whose ranges overlap with the Project Location.

3. Summary of Records Review

The results and determinations made during this records review are summarized in the following sections (Section 3.1 and 3.2). The natural features identified on and within 120 m of the Project Location are shown on Figure 1.1 and will be confirmed during the site investigation.

3.1 Natural Features

The presence and/or absence of natural features on and within 120 m of the Project Location are summarized below and have been determined based on records obtained from the information sources identified in this report.

- **ANSI** – There are no earth science or life science ANSI's on or within 120 m of the Project Location.
- **Wetlands** – There are no wetlands on or within 120 m of the Project Location. The nearest wetland is located 400 m east of the Project Location and is unevaluated.
- **Valleylands** – There are no valleylands identified on or within 120 m of the Project Location.
- **Wildlife Habitat** – The *Significant Wildlife Technical Guide* (MNR, 2000) identifies four main types of significant wildlife habitat: habitats of seasonal concentrations of animals, rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors.
 - ♦ **Habitats of Seasonal Concentrations of Animals** – There are no confirmed habitats of seasonal concentrations of animals on and within 120 m of the Project Location. However, this does not preclude them from occurring on and within 120 m of the Project Location and they will be considered during the site investigation.
 - ♦ **Rare Vegetation Communities or Specialized Habitats for Wildlife** – The following rare vegetation communities have been recorded within the Madoc Ecodistrict 6E-9 and could potentially occur on or within 120 m of the Project Location:
 - Common Juniper – Fragrant Sumac – Hairy Beardtongue Alvar Shrubland – Globally and provincially rare based on conservation ranks of G2?, S2
 - Dry – fresh White Pine Coniferous Forest Type – Globally rare based on a conservation rank of G3G4
 - Dry Bur Oak – Shagbark Hickory Tallgrass Woodland Type – Globally and provincially rare based on conservation ranks of G?, S1
 - Moist – Fresh Sugar Maple – Black Maple Deciduous Forest Type – Globally and provincially rare based on conservation ranks of G?, S3?
 - Philadelphia Panic Grass – False Pennyroyal Alvar Pavement Type – Globally and provincially rare based on conservation ranks of G1Q, S1
 - Red Cedar – Early Buttercup Treed Alvar Grassland Type – Globally and provincially rare based on conservation ranks of G2?, S2

- Tufted Hairgrass – Canada Bluegrass – Philadelphia Panic Grass Alvar Grassland Type – Globally and provincially rare based on conservation ranks of G2G3, S2S3
- White Cedar – Jack Pine – Shrubby Cinquefoil Treed Alvar Pavement – Globally and provincially rare based on conservation ranks of G1G2, S1
- White Cedar – White Spruce – Philadelphia Panic Grass Treed Alvar Grassland Type – Globally and provincially rare based on conservation ranks of G3?, S3
- Winterberry Organic Thicket Swamp Type – Globally and provincially rare based on conservation ranks of G3G4Q, S3S4

There are no confirmed specialized habitats for wildlife on and within 120 m of the Project Location. However, this does not preclude them from occurring on and within 120 m of the Project Location and they will be considered during the site investigation.

- ◆ **Habitat of Species of Conservation Concern** – The information sources reviewed in this report identified several species of conservation concern (excluding species that are designated as Endangered or Threatened on the SARO list) whose distribution ranges overlap with the Project Location. A list of these species including habitat preferences is provided in the following table (Table 3.1) and will be considered during the site investigation.
- ◆ **Animal Movement Corridors** – There are no confirmed animal movement corridor on and within 120 m of the Project Location. However, this does not preclude them from occurring on and within 120 m of the Project Location and they will be considered during the site investigation.
- **Woodlands** – There are significant woodlands according to the CRCA located on and within 120 m of the Project Location. The presence, characteristics and functions of these woodlands will be assessed during the site investigation.

Table 3.1 Summary of Species of Conservation Concern with Ranges that Overlap the Kingston Gardiner TS Unity Road Solar Energy Project Location

Species of Conservation Concern	Habitat Guild				
	Woodland	Grassland	Shrub / Successional	Wetland	Other
Plants					
A Moss (<i>Bryum gemmiparum</i>)					✓
A Moss (<i>Grimmia olneyi</i>)					✓
Brainerd's Hawthorn (<i>Crataegus brainerdii</i>)			✓		
Branching Burreed (<i>Sparganium androcladum</i>)				✓	
Bowman's Root (<i>Porteranthus trifolius</i>)	✓				
Drooping Bluegrass (<i>Poa languida</i>)		✓			
Smith's Bulrush (<i>Schoenoplectus smithii</i>)				✓	
Stiff Gentian (<i>Gentianella quinquefolia</i>)		✓			
Smooth Woodsia (<i>Woodsia glabella</i>)					✓
Amphibians					
Jefferson x Blue-spotted Salamander (<i>Ambystoma jeffersonianum</i> x <i>laterale</i> "complex") (Jefferson dominated genome polyploid)	✓			✓	
Western Chorus Frog (<i>Pseudacris triseriata</i>) Great Lakes / St. Lawrence Canadian Shield Population				✓	
Reptiles					
Eastern Ribbonsnake (<i>Thamnophis sauritus</i>)		✓		✓	
Five-lined Skink (<i>Plestiodon fasciatus</i>) Southern Shield Population	✓				
Milksnake (<i>Lampropeltis triangulum</i>)					✓
Northern Map Turtle (<i>Graptemys geographica</i>)				✓	
Snapping Turtle (<i>Chelydra serpentina</i>)				✓	

Species of Conservation Concern	Habitat Guild				
	Woodland	Grassland	Shrub / Successional	Wetland	Other
Insects					
Juniper Hairstreak (<i>Callophrys gryneus</i>)			✓		
Birds					
Bald Eagle § (<i>Haliaeetus leucocephalus</i>)				✓	
Black Tern § (<i>Chlidonias niger</i>)				✓	
Canada Warbler § (<i>Wilsonia canadensis</i>)	✓				
Common Nighthawk (<i>Chordeiles minor</i>)	✓				
Golden-winged Warbler (<i>Vermivora chrysoptera</i>)			✓		
Louisiana Waterthrush § (<i>Seiurus motacilla</i>)	✓				
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	✓				
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	✓				
Short-eared Owl § (<i>Asio flammeus</i>)		✓			
Yellow-breasted Chat (<i>Icteria virens</i>)			✓		
Yellow Rail (<i>Coturnicops noveboracensis</i>)				✓	
Mammals					
Eastern Pipistrelle (<i>Pipistrellus subflavus</i>)	✓				
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	✓				
NOTE: § Area-sensitive species for Ecoregion 6E-9 (MNR, 2000) and/or within BCR-13 (Ontario Partners in Flight, 2008).					

3.2 Other Features

- **Provincial Parks and Conservation Reserves** – There are no provincial parks or conservation reserves on or within 120 m of the Project Location.
- **Other Information** – There is an authorized aggregate site within the southeastern 120 m setback from the Project Location.

3.3 Records Review Determinations

In accordance with subsection 25 (3) of the REA Regulation, the following table (Table 3.2) provides a summary of the determinations made with respect to the presence/absence of a provincial park, conservation reserve and/or natural feature on and within 120 m of the Project Location. The natural features identified within 120 m of the Project Location are shown on Figure 1.1 and will be verified during the site investigation.

Table 3.2 Summary of Records Review Determinations for Kingston Gardiner TS Unity Road Solar Energy Project

Determination to be Made	Yes/No	Description
Is the Project Location in or within 120 m of a provincial park or conservation reserve?	No	There are no provincial parks or conservation reserves within 120 m of the Project Location.
Is the Project Location in a natural feature?	Yes	There are significant woodlands according to the CRCA located on and within 120 m of the Project Location. There are potential candidate significant wildlife habitats on the Project Location.
Is the Project Location within 50 m of an ANSI (earth science)?	No	The nearest earth science ANSI is located more than 10 km northwest of the Project Location.
Is the Project Location within 120 m of a natural feature that is not an ANSI (earth science)?	Yes	There are significant woodlands according to the CRCA located on and within 120 m of the Project Location. There are potential candidate significant wildlife habitats on the Project Location.

4. Next Steps

A site investigation, as required in Section 26 of the REA Regulation will be completed to:

- i. confirm the features identified during this records review
- ii. identify if any corrections to the information presented herein are required
- iii. determine whether any additional natural features exist on or adjacent to the Project Location
- iv. confirm the boundaries of the natural features within 120 m of the Project Location, and
- v. determine the distance from the Project to the natural feature boundary.

5. References

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Appendix A

Ontario Breeding Bird Atlas Data



Square Summary (18UQ70)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
6	26	86	118	20	19	71	110	62	85	20	5

Region summary (#21: Kingston)

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
75	75	75	194	193	2753	1875

Target number of point counts in this square: 19 road side, 6 off road (2 in deciduous forest, 1 in coniferous forest, 1 in mixed forest, 1 in pasture/grassland, 1 in alvar). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
Canada Goose	P	FY	52	97	Pied-billed Grebe	DD	S	61	78	Rock Dove	FY	AE	96	93
Mute Swan ‡		H	0	8	Double-crest Cormorant §			14	21	Spotted Sandpiper	FY	AE	90	78
Trumpeter Swan †		P	0	9	American Bittern	FY	T	92	88	Upland Sandpiper	FY		73	58
Tundra Swan †			0	0	Least Bittern †	P	S	46	37	Common Snipe	DD	T	98	98
Wood Duck	NE	FY	92	94	Great Blue Heron §	NE	H	97	89	American Woodcock	DD	T	97	81
Gadwall	DD	H	24	21	Green Heron §	CF	AE	97	86	Wilson's Phalarope †			6	4
American Wigeon	P		16	14	Black-crown N.-Heron † §		X	13	4	Ring-billed Gull §			17	18
American Black Duck	FY	FY	81	29	Turkey Vulture	H	H	84	94	Herring Gull §			26	32
Mallard	FY	FY	100	98	Osprey		NY	52	77	Great Black-backed Gull †			2	5
Blue-winged Teal	FY	FY	98	66	Bald Eagle †			5	12	Caspian Tern †		X	10	5
Northern Shoveler	DD		18	16	Northern Harrier	CF		89	76	Black Tern † §			54	45
Northern Pintail	FY	P	24	17	Sharp-shinned Hawk	H	NY	52	58	Common Tern §			18	17
Green-winged Teal			0	37	Cooper's Hawk			29	49	Forster's Tern † §			0	2
Canvasback †			0	0	Northern Goshawk			18	18	Mourning Dove	FY	NU	100	98
Redhead †			8	1	Red-should Hawk †		S	42	54	Budgerigar ‡			0	0
Ring-necked Duck	P	H	22	30	Broad-winged Hawk	H		50	49	Yellow-billed Cuckoo	P		62	49
Lesser Scaup ‡			2	1	Red-tailed Hawk	NE	H	100	93	Black/Yell-billed Cuckoo			0	41
Common Goldeneye ‡			0	1	Golden Eagle †		X	0	1	Black-billed Cuckoo	P	AE	98	89
Hooded Merganser	AE		40	62	American Kestrel	FY	H	98	84	Barn Owl †	H		1	0
Common Merganser			18	33	Merlin			2	34	Eastern Screech-Owl	T	S	74	76
Red-breast Merganser			12	8	Peregrine Falcon †			1	0	Great Horned Owl	AE	H	96	76
Ruddy Duck †			1	5	King Rail †			1	2	Barred Owl			40	65
Gray Partridge			20	1	Virginia Rail	FY	FY	86	89	Long-eared Owl			41	16
Ring-necked Pheasant	H		34	28	Sora	FY	S	81	76	Short-eared Owl †			22	8
Ruffed Grouse	FY	T	92	88	Common Moorhen	FY	AE	80	56	North Saw-whet Owl	T		61	10
Sharp-tailed Grouse †			0	1	American Coot			26	12	Common Nighthawk	FY	T	86	54
Wild Turkey			4	80	Coot/Moorhen			0	8	Chuck-will's-widow †			1	0
Northern Bobwhite †			1	0	Sandhill Crane ‡			0	4	Whip-poor-will	T	T	89	69
Common Loon		P	84	85	Killdeer	FY	DD	98	97	Chimney Swift	AE	T	76	50

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Ontario Breeding Bird Atlas - Summary Sheet for Square 18UQ70 (page 2 of 3)

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
Ruby-thr Hummingbird	NE		92	96	Horned Lark	FY	FY	85	65	European Starling	FY	NY	100	98
Belted Kingfisher	FY	CF	97	97	Purple Martin	NY	S	84	73	Cedar Waxwing	NE	AE	98	98
Red-headed Woodpecker †	FY		54	8	Tree Swallow	NY	AE	100	98	Blue-winged Warbler			9	18
Red-bell Woodpecker ‡			0	20	North Rgh-wing Swallow	AE	NB	92	78	Golden-winged Warbler			46	60
Yellow-bellied Sapsucker			68	72	Bank Swallow §	NE	AE	88	68	Blue/Gold-wing Warbler			0	29
Downy Woodpecker	NE	NY	96	98	Cliff Swallow §	NE	AE	62	60	Lawrence's Warbler †			1	1
Hairy Woodpecker	FY	CF	97	98	Barn Swallow	NY	NU	100	98	Brewster's Warbler †			1	9
Three-toed Woodpecker ‡			1	0	Black-capped Chickadee	AE	FY	98	98	Tennessee Warbler			4	2
Black-backed Woodpecker ‡			1	0	Tufted Titmouse †			0	2	Nashville Warbler		T	77	82
Northern Flicker	AE	CF	100	98	Red-breast Nuthatch	H	S	58	74	Northern Parula ‡			1	8
Pileated Woodpecker	AE		86	93	White-breast Nuthatch	AE	AE	97	97	Yellow Warbler	NE	CF	100	98
Olive-sided Flycatcher ‡			2	4	Brown Creeper	T		61	58	Chestn-sided Warbler	CF	CF	80	96
Eastern Wood-Pewee	CF	P	98	98	Carolina Wren ‡			2	10	Magnolia Warbler			24	60
Yellow-bellied Flycatcher			8	4	House Wren	NE	CF	98	97	Black-thr Blue Warbler			20	44
Alder Flycatcher	P	T	74	88	Winter Wren			42	57	Yellow-rumped Warbler			53	85
Willow Flycatcher	P	T	73	80	Sedge Wren	P	S	34	24	Black-thr Green Warbler		CF	48	76
Least Flycatcher	T	CF	97	97	Marsh Wren	NE	NU	74	81	Blackburnian Warbler			46	54
Eastern Phoebe	NE	T	98	98	Golden-crown Kinglet			5	14	Pine Warbler	P	S	58	80
Gr Crested Flycatcher	NE	AE	98	98	Ruby-crown Kinglet ‡			1	0	Prairie Warbler †			12	10
Eastern Kingbird	NY	CF	100	98	Blue-gr Gnatcatcher			22	21	Cerulean Warbler †			25	26
Loggerhead Shrike †	NY	NB	34	18	Eastern Bluebird	NE	AE	62	85	Black-white Warbler	FY	CF	86	89
Yellow-throated Vireo		H	64	61	Veery	DD	FY	93	94	American Redstart	P	CF	96	98
Blue-headed Vireo			5	28	Swainson's Thrush			5	4	Ovenbird	T	FY	90	94
Warbling Vireo	CF	CF	98	98	Hermit Thrush		T	36	53	North Waterthrush	P	CF	82	88
Philadelphia Vireo			9	9	Wood Thrush	FY	FY	97	98	Louis Waterthrush †			6	6
Red-eyed Vireo	CF	CF	98	98	American Robin	NY	NY	100	98	Mourning Warbler			25	25
Blue Jay	NE	CF	97	98	Gray Catbird	NE	S	98	98	Common Yellowthroat	FY	CF	98	98
American Crow	FY	CF	98	98	Northern Mockingbird	P		22	29	Hooded Warbler †			0	0
Common Raven			22	77	Brown Thrasher	NE	CF	100	94	Wilson's Warbler ‡			1	0

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Ontario Breeding Bird Atlas - Summary Sheet for Square 18UQ70 (page 3 of 3)

SPECIES	Code		%	
	1st	2nd	1st	2nd
Canada Warbler			36	21
Yellow-breast Chat †			4	0
Eastern Towhee	P	CF	97	90
Chipping Sparrow	NY	CF	100	98
Clay-colored Sparrow			9	33
Field Sparrow	P	CF	96	94
<u>Vesper Sparrow</u>	T		93	74
Savannah Sparrow	CF	CF	98	97
Grasshopper Sparrow	T	S	50	58
Henslow's Sparrow †			17	1
Song Sparrow	FY	NY	100	98
Lincoln's Sparrow		V	5	4
Swamp Sparrow	CF	NY	97	97
White-throat Sparrow	P	CF	92	85
Dark-eyed Junco			12	16
Scarlet Tanager		AE	90	92
Northern Cardinal	FY	T	61	88
Rose-breast Grosbeak	FY	CF	98	98
Indigo Bunting	DD	FY	97	94
Bobolink	FY	CF	98	96
Red-wing Blackbird	FY	NY	100	98
Eastern Meadowlark	FY	CF	97	94
Common Grackle	NU	CF	100	98
Brown-head Cowbird	NE	P	100	97
Orchard Oriole ‡			1	12
Baltimore Oriole	NU	AE	100	98
Pine Grosbeak ‡			0	0
Purple Finch	P		68	84
House Finch	FY	FY	22	72

SPECIES	Code		%	
	1st	2nd	1st	2nd
Red Crossbill			18	4
White-winged Crossbill			5	2
Pine Siskin	NE		54	14
American Goldfinch	FY	FY	100	98
Evening Grosbeak			17	10
House Sparrow	FY	AE	98	92

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #21 (Kingston). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 18UQ70 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #21). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 31/08/2010. An up-to-date version of this sheet is available from <http://www.birdsontario.org/atlas/summaryform.jsp?squareID=18UQ70>

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Square Summary (18UQ71)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
4	25	79	108	13	30	82	125	52	233	22	5

Region summary (#21: Kingston)

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
75	75	75	194	193	2753	1875

Target number of point counts in this square: 22 road side, 3 off road (2 in deciduous forest, 1 in mixed forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Code		%	
	1st	2nd	1st	2nd
Canada Goose		FY	52	97
Mute Swan ‡			0	8
Trumpeter Swan †			0	9
Tundra Swan †			0	0
Wood Duck	FY	FY	92	94
Gadwall			24	21
American Wigeon			16	14
American Black Duck	P	P	81	29
Mallard	FY	FY	100	98
Blue-winged Teal	FY	P	98	66
Northern Shoveler			18	16
Northern Pintail			24	17
Green-winged Teal			0	37
Canvasback †			0	0
Redhead †			8	1
Ring-necked Duck			22	30
Lesser Scaup ‡			2	1
Common Goldeneye ‡			0	1
Hooded Merganser		FY	40	62
Common Merganser		P	18	33
Red-breast Merganser			12	8
Ruddy Duck †			1	5
Gray Partridge			20	1
Ring-necked Pheasant	T	T	34	28
Ruffed Grouse	FY	FY	92	88
Sharp-tailed Grouse †			0	1
Wild Turkey		FY	4	80
Northern Bobwhite †			1	0
Common Loon	FY	FY	84	85

SPECIES	Code		%	
	1st	2nd	1st	2nd
Pied-billed Grebe	H	FY	61	78
Double-crest Cormorant §		H	14	21
American Bittern	AE	T	92	88
Least Bittern †		S	46	37
Great Blue Heron §	H	H	97	89
Green Heron §	NE	FY	97	86
Black-crown N.-Heron † §			13	4
Turkey Vulture	P	FY	84	94
Osprey	CF	NY	52	77
Bald Eagle †			5	12
Northern Harrier	T	H	89	76
Sharp-shinned Hawk	H	T	52	58
Cooper's Hawk		FY	29	49
Northern Goshawk		T	18	18
Red-should Hawk †		FY	42	54
Broad-winged Hawk			50	49
Red-tailed Hawk	DD	FY	100	93
American Kestrel	FY	FY	98	84
Merlin			2	34
Peregrine Falcon †			1	0
King Rail †			1	2
Virginia Rail	FY	FY	86	89
Sora	P	FY	81	76
Common Moorhen	FY	FY	80	56
American Coot			26	12
Coot/Moorhen			0	8
Sandhill Crane ‡			0	4
Killdeer	FY	NE	98	97
Rock Dove	NE	AE	96	93

SPECIES	Code		%	
	1st	2nd	1st	2nd
Spotted Sandpiper	FY	FY	90	78
Upland Sandpiper	FY	AE	73	58
Common Snipe	FY	T	98	98
American Woodcock	FY	FY	97	81
Wilson's Phalarope †			6	4
Ring-billed Gull §			17	18
Herring Gull §		P	26	32
Great Black-backed Gull †			2	5
Caspian Tern †		X	10	5
Black Tern † §	P	AE	54	45
Common Tern §			18	17
Forster's Tern † §			0	2
Mourning Dove	NE	NE	100	98
Budgerigar ‡			0	0
Yellow-billed Cuckoo	CF	P	62	49
Black/Yell-billed Cuckoo			0	41
Black-billed Cuckoo	FY	T	98	89
Barn Owl †			1	0
Eastern Screech-Owl	T	FY	74	76
Great Horned Owl	FY	NY	96	76
Barred Owl		T	40	65
Long-eared Owl	T	S	41	16
Short-eared Owl †			22	8
North Saw-whet Owl	T		61	10
Common Nighthawk	FY	T	86	54
Chuck-will's-widow †			1	0
Whip-poor-will	T	T	89	69
Chimney Swift	AE	FY	76	50
Ruby-thr Hummingbird	FY	FY	92	96

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Ontario Breeding Bird Atlas - Summary Sheet for Square 18UQ71 (page 2 of 3)

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
Belted Kingfisher	FY	CF	97	97	Purple Martin	NE	AE	84	73	Cedar Waxwing	NE	FY	98	98
Red-headed Woodpecker †	T		54	8	Tree Swallow	NE	NY	100	98	Blue-winged Warbler			9	18
Red-bell Woodpecker ‡			0	20	North Rgh-wing Swallow	P	CF	92	78	Golden-winged Warbler			46	60
Yellow-bellied Sapsucker		S	68	72	Bank Swallow §	NE		88	68	Blue/Gold-wing Warbler			0	29
Downy Woodpecker	NE	AE	96	98	Cliff Swallow §	P	NY	62	60	Lawrence's Warbler †			1	1
Hairy Woodpecker	FY	CF	97	98	Barn Swallow	NE	AE	100	98	Brewster's Warbler †			1	9
Three-toed Woodpecker ‡			1	0	Black-capped Chickadee	FY	CF	98	98	Tennessee Warbler			4	2
Black-backed Woodpecker ‡			1	0	Tufted Titmouse †			0	2	Nashville Warbler		S	77	82
Northern Flicker	FY	AE	100	98	Red-breast Nuthatch	T	H	58	74	Northern Parula ‡			1	8
Pileated Woodpecker	P	CF	86	93	White-breast Nuthatch	FY	CF	97	97	Yellow Warbler	NE	NY	100	98
Olive-sided Flycatcher ‡			2	4	Brown Creeper		H	61	58	Chestn-sided Warbler	P	T	80	96
Eastern Wood-Pewee	CF	T	98	98	Carolina Wren ‡			2	10	Magnolia Warbler			24	60
Yellow-bellied Flycatcher			8	4	House Wren	NE	AE	98	97	Black-thr Blue Warbler			20	44
Alder Flycatcher	T	S	74	88	Winter Wren		S	42	57	Yellow-rumped Warbler		T	53	85
Willow Flycatcher	T	T	73	80	Sedge Wren			34	24	Black-thr Green Warbler		T	48	76
Least Flycatcher	FY	FY	97	97	Marsh Wren	NE	AE	74	81	Blackburnian Warbler		P	46	54
Eastern Phoebe	NE	AE	98	98	Golden-crown Kinglet			5	14	Pine Warbler		S	58	80
Gr Crested Flycatcher	NE	AE	98	98	Ruby-crown Kinglet ‡			1	0	Prairie Warbler †			12	10
Eastern Kingbird	NE	CF	100	98	Blue-gr Gnatcatcher			22	21	Cerulean Warbler †			25	26
Loggerhead Shrike †	P		34	18	Eastern Bluebird	FY	NY	62	85	Black-white Warbler	DD	T	86	89
Yellow-throated Vireo	P	T	64	61	Veery	FY	T	93	94	American Redstart	FY	T	96	98
Blue-headed Vireo			5	28	Swainson's Thrush			5	4	Ovenbird	NE	T	90	94
Warbling Vireo	FY	CF	98	98	Hermit Thrush		T	36	53	North Waterthrush	DD	T	82	88
Philadelphia Vireo			9	9	Wood Thrush	CF	NE	97	98	Louis Waterthrush †			6	6
Red-eyed Vireo	NE	CF	98	98	American Robin	NE	NY	100	98	Mourning Warbler			25	25
Blue Jay	FY	FY	97	98	Gray Catbird	FY	FY	98	98	Common Yellowthroat	FY	FY	98	98
American Crow	FY	FS	98	98	Northern Mockingbird	P		22	29	Hooded Warbler †			0	0
Common Raven		FY	22	77	Brown Thrasher	CF	FY	100	94	Wilson's Warbler ‡			1	0
Horned Lark	P	T	85	65	European Starling	NE	NY	100	98	Canada Warbler			36	21

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Ontario Breeding Bird Atlas - Summary Sheet for Square 18UQ71 (page 3 of 3)

SPECIES	Code		%	
	1st	2nd	1st	2nd
Yellow-breast Chat †			4	0
Eastern Towhee	P	P	97	90
Chipping Sparrow	FY	NY	100	98
Clay-colored Sparrow			9	33
Field Sparrow	FY	CF	96	94
Vesper Sparrow	FY	CF	93	74
Savannah Sparrow	CF	CF	98	97
Grasshopper Sparrow	T	H	50	58
Henslow's Sparrow †			17	1
Song Sparrow	NE	CF	100	98
Lincoln's Sparrow			5	4
Swamp Sparrow	DD	CF	97	97
White-throat Sparrow	FY	CF	92	85
Dark-eyed Junco			12	16
Scarlet Tanager	P	CF	90	92
Northern Cardinal	FY	FY	61	88
Rose-breast Grosbeak	FY	FY	98	98
Indigo Bunting	FY	T	97	94
Bobolink	CF	CF	98	96
Red-wing Blackbird	FY	CF	100	98
Eastern Meadowlark	FY	CF	97	94
Common Grackle	FY	CF	100	98
Brown-head Cowbird	FY	FY	100	97
Orchard Oriole ‡		FY	1	12
Baltimore Oriole	NE	AE	100	98
Pine Grosbeak ‡		X	0	0
Purple Finch	FY	FY	68	84
House Finch		AE	22	72
Red Crossbill			18	4

SPECIES	Code		%	
	1st	2nd	1st	2nd
White-winged Crossbill			5	2
Pine Siskin			54	14
American Goldfinch	NE	CF	100	98
Evening Grosbeak			17	10
House Sparrow	NE	CF	98	92

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #21 (Kingston). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 18UQ71 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #21). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 31/08/2010. An up-to-date version of this sheet is available from <http://www.birdsontario.org/atlas/summaryform.jsp?squareID=18UQ71>

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Appendix B

Cataraqui Region Conservation Authority Information



CATARAQUI REGION CONSERVATION AUTHORITY

1641 Perth Road, P.O. Box 160 Glenburnie, Ontario K0H 1S0

Phone: (613) 546-4228 Fax: (613) 547-6474

E-mail: crca@cataraquiregion.on.ca Website: www.cataraquiregion.on.ca

August 23, 2010

Files: GC-CKN
OPS 3-7-3-6

Sent by Mail and Email (PHolmes@hatch.ca)

Paul D. Holmes, P. Eng.
Environmental Coordinator
Hatch Ltd.
1235 North Service Road West
Oakville, Ontario, L6M 2W2

Dear Mr. Holmes:

**Re: Property Inquiry (Proposed Solar Power Project)
Gardiner TS Unity Road
Part of Lot 12, Concession 6, Geographic Township of Kingston
North of Unity Road, City of Kingston**

Cataraqui Region Conservation Authority (CRCA) staff are writing regarding your request for information for the above-noted site located north of Unity Road in the City of Kingston and for the area within 1 km of the site. The site was not visited.

The site is located on the north side of Unity Road. The site encompasses approximately 36 hectares. Aerial photography of the area indicates that the site is undeveloped. Significant woodlands identified in the Central Cataraqui Region Natural Heritage Study (CCRNHS) (CRCA, 2006) cover a major portion of the property.

The subject lands are currently designated 'Rural' in the City of Kingston Official Plan and zoned 'General Agricultural Zone' (A2) in the implementing Zoning By-law (76-26).

Discussion

The CRCA, in accordance with Section 2.2 of the Provincial Policy Statement and under Ontario Regulation 148/06: *Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses*, regulates alteration to and development near a waterbody and a wetland. The purpose of Ontario Regulation 148/06 is to ensure that proposed changes (e.g. development and site alteration) to a property are not affected by natural hazards, such as flooding and erosion, and that the changes do not put other properties at greater risk from these hazards. By virtue of this regulation, the CRCA regulates all development and site alteration activities (including filling) within 15 metres of a flood plain or erosion hazard, within 120 metres of Provincially Significant Wetland (PSW) boundaries and 30 metres of all other wetlands. Within a regulated area, written permission must be obtained from the CRCA prior to development taking place.

Member of



Mapping protocols that are used under the regulation indicate that the subject site is not regulated (see attached map).

Significant Woodlands

The Central Cataraqui Region Natural Heritage Study (CCRNHS) (CRCA, 2006) identifies areas of 'Significant Woodlands' present on the subject property. The wooded area was identified as significant based on its area and presence of interior habitat. The City of Kingston Adopted Official Plan has incorporated the findings of the CCRNHS into a Natural Heritage 'B' designation and identifies the woodlands as significant on Schedule 8B of the Plan.

Policy 2.1.4 of the Provincial Policy Statement (2005) does not permit development and site alteration in significant woodlands unless negative impacts can be mitigated. The Official Plan restricts development and site alteration in significant woodlands unless it is demonstrated that there will be no negative impacts on the woodlands or their ecological functions. The CRCA requests that every effort be taken to protect the Significant Woodlands. The CRCA recommends that an environmental impact assessment and a tree preservation plan be prepared should development be proposed in Significant Woodlands.

Endangered and Threatened Species

Wildlife within the wooded areas may contain species that are protected under Provincial and Federal Endangered Species legislation. CRCA staff suggest that you contact the Ministry of Natural Resources (MNR) to discuss obligations/restrictions that may need to be followed. The contact number for the Species at Risk Biologist at MNR's Kemptville district office is (613) 258-8204.

Area within 1 km of the Site

The attached map shows the regulated areas within 1 km of the subject site. These include the areas within 30 m of watercourses located within 1 km radius of the site, and the area within 30 m of unevaluated wetlands, and within 120 m of the

Summary

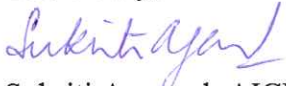
As noted, the property is not subject to Ontario Regulation 148/06: *Development, Interference with Wetlands, and Alterations to Shoreline and Watercourses*.

We trust that the above has addressed your inquiry. Please note that these comments reflect our understanding, at the time of writing, of the best available data, applicable policies and regulations. Changes in one or more of these factors may influence our comments. You are therefore encouraged to contact the CRCA prior to making a formal application, particularly if more than twelve months have passed since the date of this correspondence. As noted previously, the site was not visited.

Mr. Holmes (Gardiner TS Unity Road)
August 23, 2010

If you have any questions please contact the undersigned at (613) 546-4228 extension 258 or by e-mail at sagarwal@cataraquiregion.on.ca.

Yours truly,



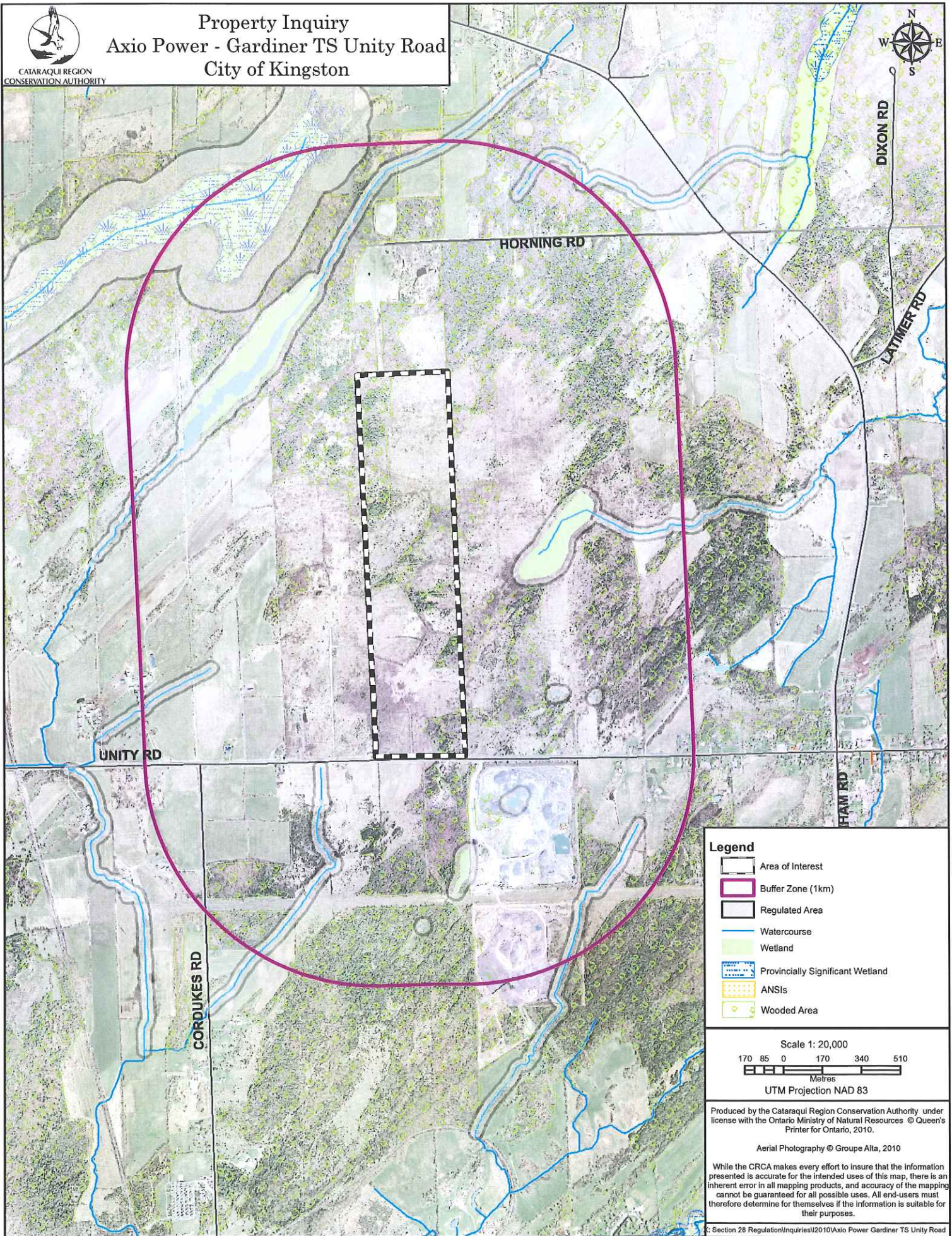
Sukriti Agarwal, AICP
Environmental Planner

cc: George Wallace, Director, Planning & Development Department, City of Kingston, via email

Attachment (s): Map showing regulated areas on the subject site and within 1 km of the site



Property Inquiry
Axio Power - Gardiner TS Unity Road
City of Kingston



Legend

- Area of Interest
- Buffer Zone (1km)
- Regulated Area
- Watercourse
- Wetland
- Provincially Significant Wetland
- ANSIs
- Wooded Area

Scale 1: 20,000

Metres
UTM Projection NAD 83

Produced by the Cataraqui Region Conservation Authority under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2010.

Aerial Photography © Groupe Alla, 2010

While the CRCA makes every effort to insure that the information presented is accurate for the intended uses of this map, there is an inherent error in all mapping products, and accuracy of the mapping cannot be guaranteed for all possible uses. All end-users must therefore determine for themselves if the information is suitable for their purposes.



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