



Axio Power Canada Inc./
SunEdison Canada

Draft Water Body Records Review Report

For

Kingston Gardiner TS Unity Road
Solar Energy Project

H335467
Rev. D
July 13, 2011

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Project Report

July 13, 2011

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

Draft Water Body Records Review Report

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1. Introduction

1.1 Project Description

Axio Power Canada Inc. /SunEdison Canada (“Axio”) and Canadian Solar Solutions Inc. (“Canadian Solar”) are proposing to develop 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 approximately 34 hectares (ha) of land on Part of Lot 12, Concession 6, City of Kingston (single tier municipality), County of Frontenac, and within the Madoc Ecodistrict 6E-9.

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), came into force on September 24, 2009 and identifies the Renewable Energy Approval (REA) requirements for renewable energy generation facilities in Ontario. The REA Regulation has since been amended by O. Reg. 521/10, which came in effect as of January 1, 2011.

As per the REA Regulation (Part II, Section 4), ground-mounted solar facilities with a nameplate capacity greater than (>) 10 kilowatts (kW) are classified as Class 3 solar facilities and require an REA.

1.3 Purpose of Report

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Water Body Records Review to identify “*whether the project is*

- i. *in a water body*
- ii. *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*
- iii. *within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity*
- iv. *within 120 m of the average annual high water mark of a permanent or intermittent stream, or*
- v. *within 120 m of a seepage area”* (O. Reg. 359/09, s. 30, Table).

Subsection 30 (2) 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 Water Body Records Review Report has been prepared to meet these requirements.

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)).

2. Methodology and Results

The following sections document the records that were reviewed and assessed. The focus of the assessment was identifying whether or not the Project Location is within or adjacent to any water body features. The definition of a water body is stated in Section 1 (1) of the REA regulation:

“water body’ includes a lake, a permanent stream, an intermittent stream and 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, or*
- (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.”*

The following sections of this report were organized with respect to the governing bodies identified in Column 1 of the Table in Section 30 of the REA Regulation.

Records for areas within a minimum distance of 1 km from the Project Location were searched. This included records from the Ministry of Natural Resources, Ministry of the Environment, Ontario Ministry of Agriculture, Food and Rural Affairs, Federal Government, Cataraqui Region Conservation Authority, and the City of Kingston. The results are discussed below in relation to the distances specified between the Project and water features as defined in Section 30 of the REA Regulation (see Section 1.3).

There are no Planning Boards, Local Roads Boards or Local Services Boards with jurisdiction over the Project study area. Also, the Project Location is not within the Niagara Escarpment Commission Plan Area. Therefore, records from these such governing bodies were not reviewed.

2.1 Ministry of Natural Resources Records

2.1.1 Methodology

The following Ministry of Natural Resources (MNR) on-line records were reviewed:

- Ontario Base Maps (OBM) and natural feature layers from Land Information Ontario (LIO) (<http://www.mnr.gov.on.ca/en/Business/LIO/index.html>), supplemented with OBM maps from the Geographic Network of Canada (GNC) (<http://www.geographynetwork.ca/>).
- Natural Heritage Information Centre (NHIC) on-line mapping (<https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/main.jsp>).

2.1.2 Results

OBM mapping did not identify any water body features on or within 120 m of the Project Location. However, the OBM mapping identified the following water body features within 1 km of the Project Location:

- A tributary of Collins Creek located about 240 m southwest of the Project Location.
- A tributary of Collins Creek located about 360 m east of the north east corner of the Project Location.
- A tributary of Collins Creek located about 700 m west of the Project Location.
- A tributary of Collins Creek located about 790 m southeast of the Project Location.
- A small artificial pond within an aggregate extraction facility situated about 280 m southeast of the Project Location.
- A pond located approximately 400 m east of the Project Location.
- A pond located approximately 580 m east of the Project Location.

No additional water body features were identified on the mapping available on the NHIC website.

2.2 Ministry of the Environment

2.2.1 Methodology

A request for information related to water body features within a minimum distance of 1 km was sent to the Ministry of the Environment (MOE) by way of email dated April 15, 2011.

2.2.2 Results

The MOE responded to the information request on May 4, 2011, which included a map showing the water body features within proximity to the Project Location (Appendix A). The MOE did not identify any new or different water body features than those identified through OBM mapping (section 2.1.2). Therefore, no water body features were identified on or within 120 m of the Project Location, through review of MOE records.

2.3 Ontario Ministry of Agriculture, Food and Rural Affairs Records

2.3.1 Methodology

The following Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) on-line record was reviewed:

- Rural Drainage Mapping (http://www.lio.ontario.ca/imf-ows/imf.jsp?site=ads_en).

2.3.2 Results

The OMAFRA rural drainage mapping did not identify any constructed drains or agricultural tile drainage on or within 1 km of the Project Location.

The OMAFRA mapping did not identify any water body features within 120 m of the Project Location. Other nearby water body features illustrated on the rural drainage mapping appeared the same as those depicted on the OBM maps (Section 2.1.2).

2.4 Federal Government Records

2.4.1 Methodology

The following federal government websites were reviewed to determine if any records regarding water body features on or adjacent to the Project Location were available:

- Fisheries and Oceans Canada (DFO) website (<http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/index-eng.htm>)
- DFO Aquatic Species at Risk Distribution Mapping available from Conservation Ontario website (<http://www.conservation-ontario.on.ca/projects/DFO.html>)
- Natural Resource Canada (NRCAN) National Topographic System (NTS) topographic maps (<http://atlas.nrcan.gc.ca/site/english/maps/topo/map>)

2.4.2 Results

No reference to waterbodies on or adjacent to the Project Location was found on the DFO website.

The DFO Aquatic Species at Risk Distribution Mapping did not identify any aquatic Species at Risk within 120 m of the Project Location. Water body features, as illustrated on the DFO mapping, appeared the same as those depicted on the OBM maps (Section 2.1.2).

The NRCAN topographic mapping did not identify any water body features within 120 m of the Project Location. Other nearby water body features illustrated on the NRCAN mapping appeared similar to those depicted on the OBM maps (Section 2.1.2).

2.5 Conservation Authority Records

2.5.1 Methodology

Information provided on the Cataraqui Region Conservation Authority (CRCA)'s website (<http://www.cataraqueiregion.on.ca/index.html>) and CRCA mapping data posted on Conservation Ontario's website (<http://www.camaps.ca/>) was reviewed for any records regarding water body features on or adjacent to the Project Location.

A copy of the draft Project Description Report (PDR) was provided to the CRCA for review in advance of a Project start-up meeting that was held on June 15, 2010. A staff member of CRCA attended the meeting and provided general information comments on the relevant water body features and natural heritage features, and their requirements under O. Reg. 148/06 (*Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Regulations*).

Follow-up contacts were made with CRCA to obtain any relevant studies, information and/or Geographic Information System (GIS) mapping data identifying their Regulated Areas as well as any specific mapping of flood and erosion hazards associated with water body features on or adjacent to the Project Site. It should be noted that the Project Location was not known at the time the letter was sent to the CRCA. As a result, the information obtained by the CRCA is based on the Project Site boundary (outlined in red on Figure 3.1), not the Project Location.

2.5.2 Results

No additional or different information regarding specific water body features as depicted on the OBM maps was found on Conservation Ontario's website and CRCA's website, which also included a review of maps prepared as part of the Central Cataraqui Region Natural Heritage Study (CRCA, 2006).

In August 2010, the CRCA conducted a property information review of the Project Location and prepared a letter and an accompanying map, which is provided in Appendix B. The letter provided information pertaining to the natural heritage features, water body features, regulatory requirements and other potential areas of concern within 1 km of the Project Site. As mentioned earlier, the information obtained from the CRCA is based on the Project Site boundary, not the Project Location.

Specifically, in terms of the identified water related features, CRCA noted the following:

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

No water body features were identified on or within 120 m of the Project Location. As such, the CRCA minimum setback distances and regulatory requirements would be successfully met. A Water Body Site Investigation will be carried out to confirm the presence / absence of water body features on or within 120 m of the Project Location.

2.6 Municipal Records

2.6.1 Methodology

Information provided on the City of Kingston website was reviewed to determine if any records regarding water body features on or adjacent to the Project Location were available.

A copy of the draft Project Description Report (PDR) was provided to the City of Kingston planning staff for review in advance of a Project start-up meeting that was held on June 15, 2010. Staff members from the City attended the meeting and provided general information comments on the relevant water body features, as well as natural heritage features.

Where required, follow-up contacts were made with the City of Kingston to obtain any relevant studies, information and/or GIS mapping data related to water body features and natural heritage features on or adjacent to the Project Location.

2.6.2 Results

The City of Kingston Official Plan (2010) Schedule 8-B (Natural Heritage Area 'B') did not identify any water body features within 120 m of the Project Location. Other nearby water body features, as illustrated on the Official Plan Schedules, appeared similar to those depicted on the OBM maps (Section 2.1.2). Schedule 11 (Constraint Mapping) identifies the groundwater conditions on the Project Location as having "moderate to very high sensitivity."

The Central Cataraqui Region Natural Heritage Study (2006) prepared by the CRCA, City of Kingston and Loyalist Township has produced natural heritage maps which identifies the woodlands on and adjacent to the Project Location as Significant Woodlands.

3. Summary of Results and Next Steps

3.1 Summary of Results

Table 3.1 summarizes the results of the Records Review according to the water body features identified in Section 1.3. A map depicting the identified water body features on, and in proximity to, the Project Location is provided in Figure 3.1.

Table 3.1 Summary of Records Review Determinations for the Kingston Gardiner TS Unity Road Solar Energy Project.

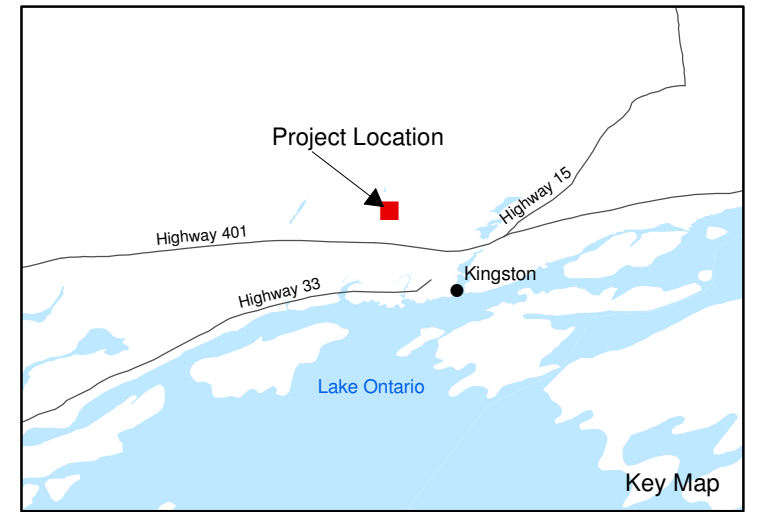
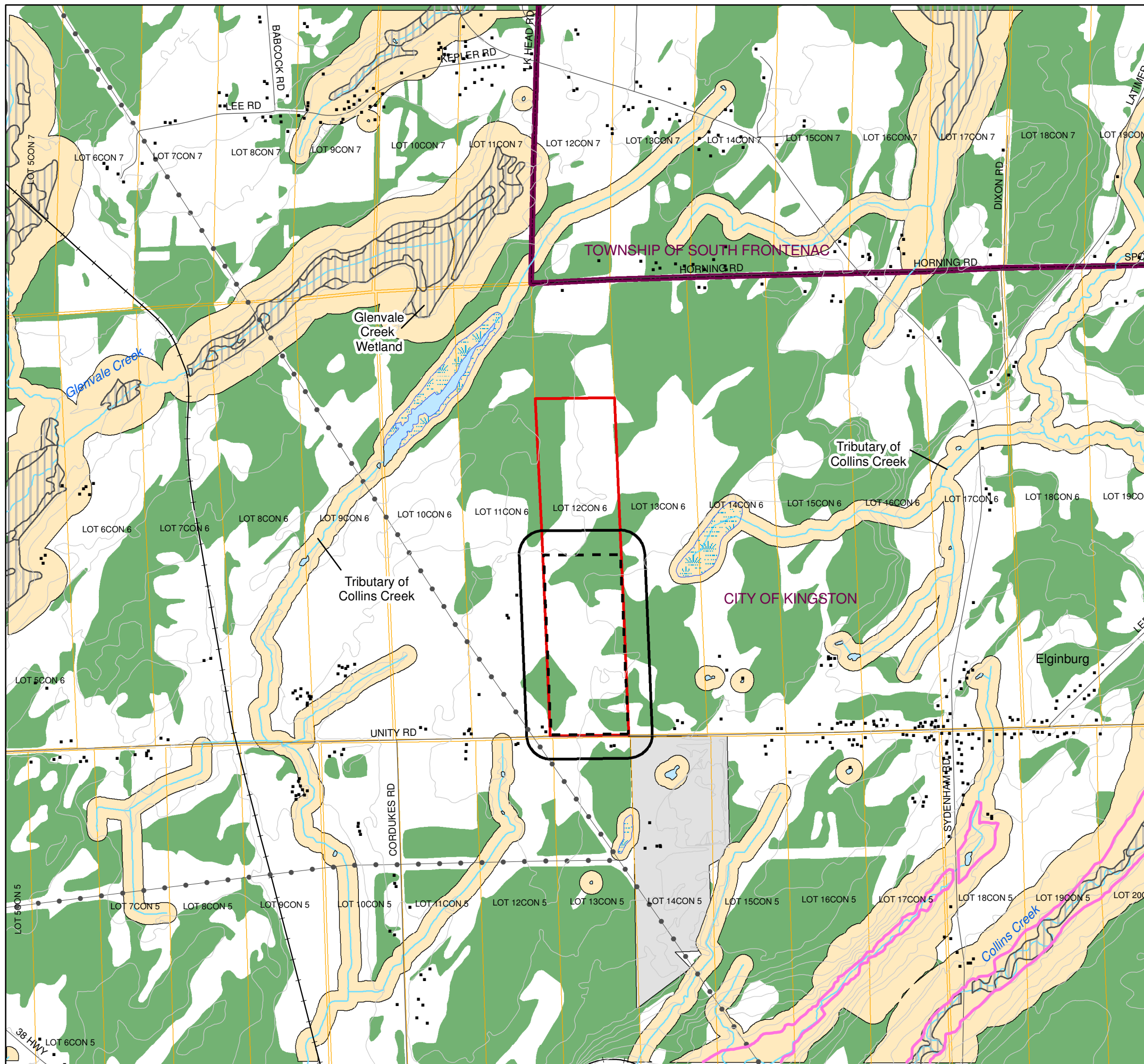
Determination to be Made	Yes/No	Description
Is the Project Location in a water body?	No	No water bodies were identified on or within 120 m of the Project Location.
Is the Project Location within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity?	No	No lakes were identified on or within 120 m of the Project Location.
Is the Project Location within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity?	No	No lake trout lakes were identified in the vicinity of the Project Location.
Is the Project Location within 120 m of the average annual high water mark of a permanent or intermittent stream?	No	No watercourses were identified on or within 120 m of the Project Location.
Is the Project Location within 120 m of a seepage area?	No	No seepage areas were identified on or within 120 m of the Project Location during the Records Review.

Therefore, based on the information sources reviewed in this report, a site investigation will be required to verify if any water body features are located on and/or within 120 m of the Project Location.

3.2 Next Steps

A site investigation, as required in Section 31 of the REA Regulation, will be completed to:

- i. confirm the water body features identified during this records review
- ii. identify if any corrections to the information presented herein are required
- iii. determine whether any water bodies exist in the Project area
- iv. confirm the boundaries of any water body feature within 120 m of the Project, and
- v. determine the distance from the Project to any identified water body boundaries (i.e., the average annual high water mark).



LEGEND

- Building
 - +— Railway
 - Road
 - Topographic Contour (5 m Interval)
 - Transmission Line
 - Watercourse
 - Authorized Aggregate Site
 - ▭ Municipality
 - ▭ Parcel
 - ▭ Project Location
 - ▭ 120 m from Project Location
 - ▭ Project Site
 - Water Body
 - ▨ Provincially Significant Wetland
 - ▨ Unevaluated Wetland
 - Woodland
- Cataraqi Region Conservation Authority Data**
- 100 Year Floodplain
 - ▭ CRCA Section 28 Regulations Screening Area

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



Figure 3.1
 Axiom Power Canada Inc.
**Kingston Gardiner TS Unity Road
 Water Body Features**



4. References

City of Kingston 2010. City of Kingston Official Plan (consolidated February 12, 2010). On-line at: <http://www.cityofkingston.ca/residents/development/officialplan/>), Accessed August 18, 2010.

Catarauqui Region Conservation Authority (CRCA) 2006. Central Catarauqui Region Natural Heritage Study Final Report. Prepared by the CRCA, City of Kingston and Loyalist Township. On-line at <http://www.catarauquiregion.on.ca/management/naturalheritage.htm>. Accessed August 9, 2010.

Catarauqui Region Conservation Authority (CRCA) 2010. Property Inquiry (Letter of August 23, 2010) (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.

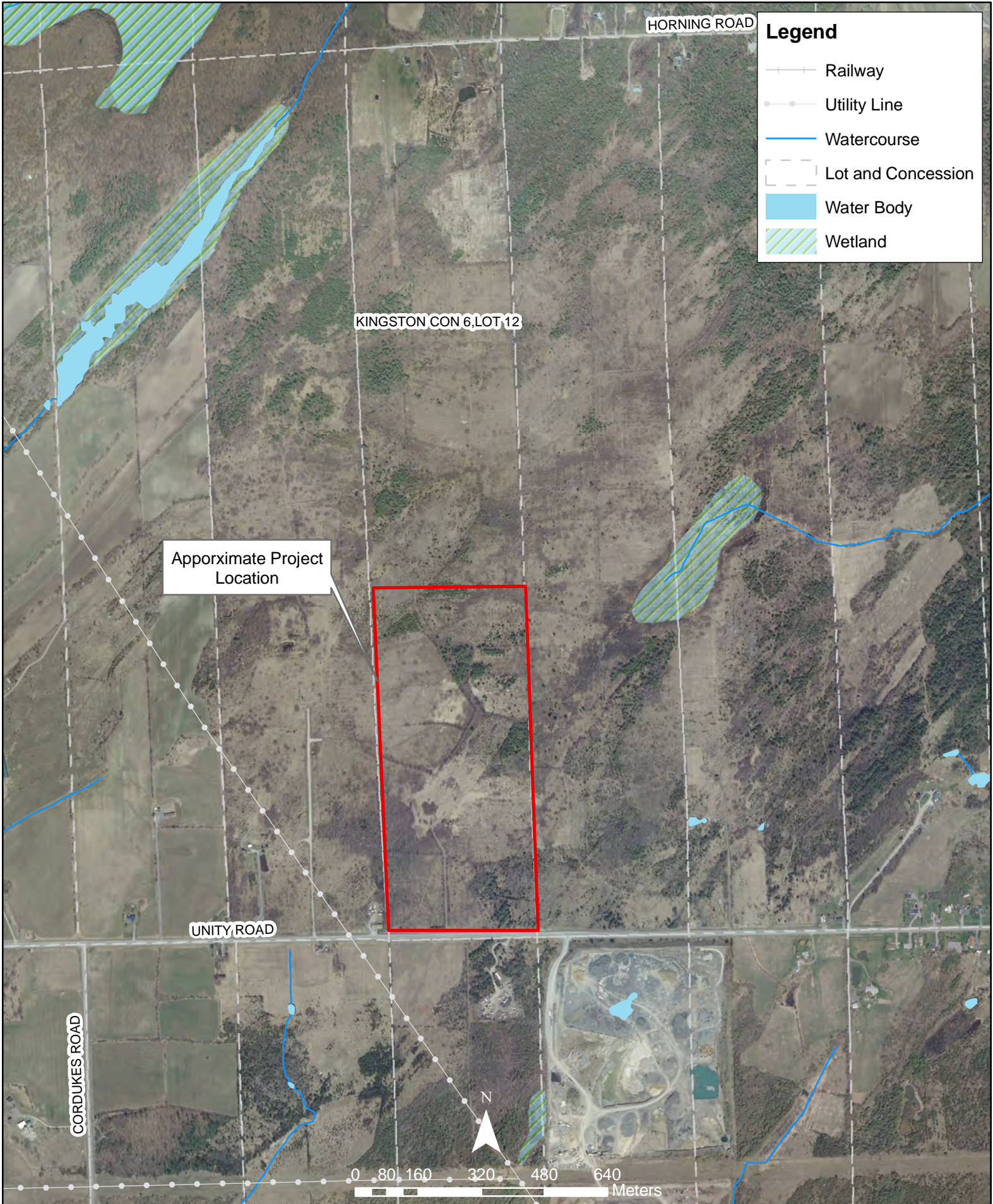
Government of Ontario. 2006. Ontario Regulation 148/06 made under the Conservation Authorities Act 1990. Last amendment: 2011, c. 9, Sched. 27, s. 22. Available on-line at: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_060148_e.htm

Government of Ontario. 2009. Ontario Regulation 359/09 made under the Environmental Protection Act 2007, Renewable Energy Approvals under Part V.0.1. of the Act. September 8, 2009 version. Printed in the Ontario Gazette: October 10, 2009. Available on-line at: [Http://www.e-laws.gov.on.ca/html/source/regs/english/2009/elaws_src_regs_r09359e.htm](http://www.e-laws.gov.on.ca/html/source/regs/english/2009/elaws_src_regs_r09359e.htm).

Government of Ontario. 2010. Ontario Regulation 521/10 made under the Environmental Protection Act, Renewable Energy Approvals under Part V.0.1 of the Act. December 15, 2010 version. Printed in *The Ontario Gazette*: January 8, 2011. Available on-line at: http://www.e-laws.gov.on.ca/html/source/regs/english/2010/elaws_src_regs_r10521_e.htm. Accessed January, 2011.

Appendix A

Ministry of the Environment Information



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

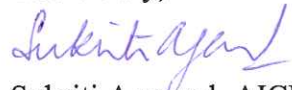
As noted, the property is not subject to Ontario Regulation 148/06: *Development, Interference with Wetlands, and Alterations to Shoreline and Watercourses*.

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,



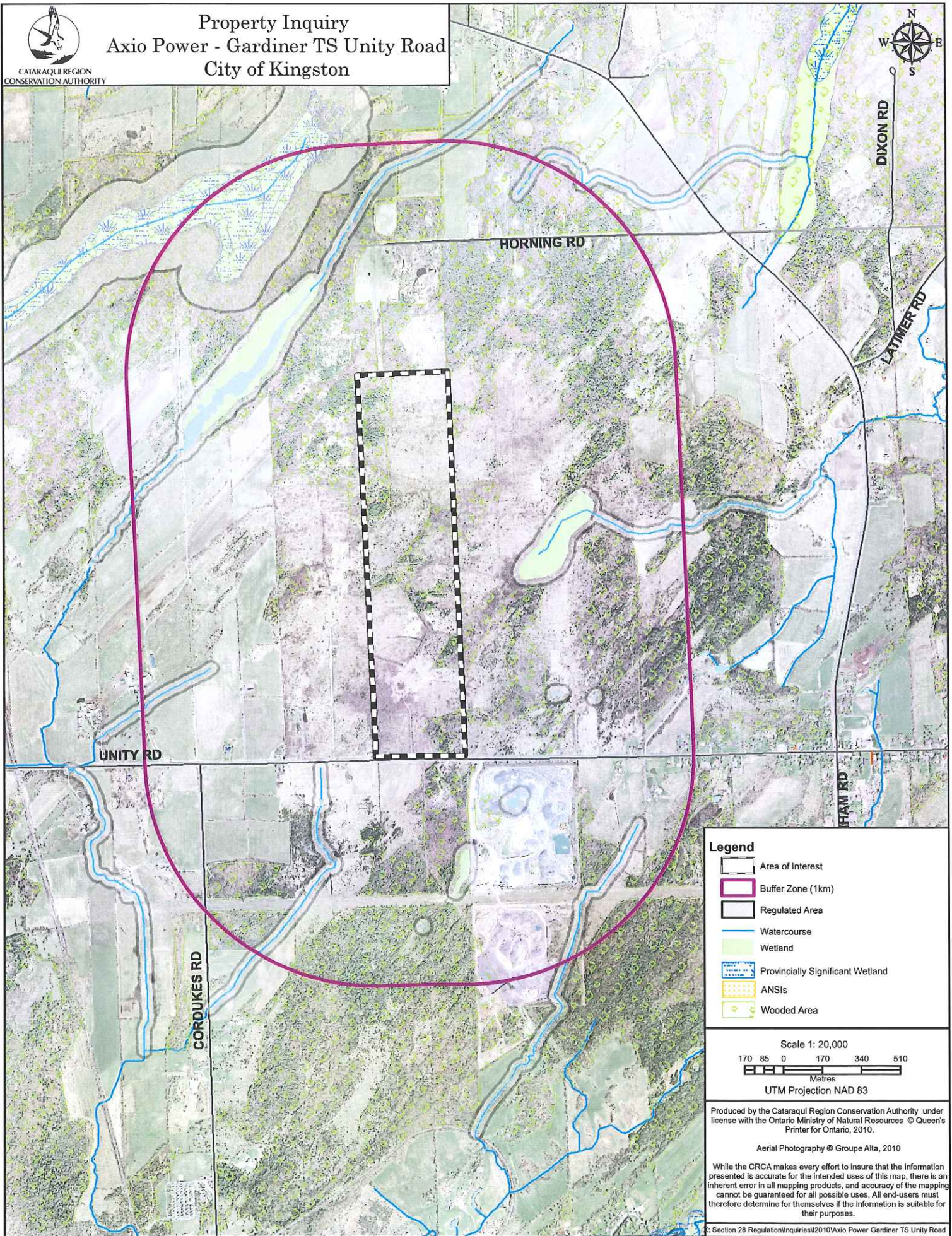
Sukriti Agarwal, AICP
Environmental Planner

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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