



WATER ASSESSMENT PACKAGE

Sandringham Solar Farm

November 2011



Water Assessment Summary

This report is intended to fulfill the requirements for the *Water Assessment Report* according to Sections 30 and 31 of *Ontario Regulation 359/09*. Various local, provincial and federal records were reviewed to assess the current understanding of water bodies within 300 m of the project location. Following this, a site investigation was undertaken to verify the accuracy of the records review and to amend any discrepancies that may have been observed.

The Sandringham Solar Farm project location falls within the Balsam lake Watershed and the Lake Simcoe Watershed. The only mapped aquatic feature is a “watercourse” in the eastern portion of the project location. Aerial photographs and our site investigation also identified the presence of two small on-line farm ponds. During our site investigations, the occurrence of the watercourse was confirmed to not exist. The mapped watercourse feature does not meet the Conservation Authorities Act definition of a watercourse or the definition of a water body under Ontario Regulation 359/09. Further, the two small farm ponds also do not meet the definition of a water body under Ontario Regulation 359/09 and are not considered to be fish habitat regulated by the Fisheries Act . Therefore, within the project location there are no water bodies (i.e., permanent watercourses, intermittent watercourses, seepage areas or lakes), as defined by Ontario Regulation 359/09.

Invenergy Canada will mitigate potential effects of the project on non-regulated ponds, headwater drainage areas and/or non-provincially significant wetlands in the project location, by maintaining the ecological function of these features (e.g., surface water hydrology). Also, based on the site conditions observed, no water crossings will be required to access the site.

RECORDS REVIEW REPORT

Water Assessment

November 2011

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1. Introduction

Invenergy Solar Canada ULC (Invenergy Canada) proposes to develop a solar farm with a maximum name plate capacity of 10 MW (AC), located near the communities of Argyle and Glenarm in the City of Kawartha Lakes (**Figure 1**). The total capacity will be 15 MWp (DC). The renewable energy facility will be known as the Sandringham Solar Farm and will be rated as a Class 3 Solar Facility.

Invenergy Solar Canada ULC has received a contract from the Ontario Power Authority (OPA) for the purchase of electricity generated by photovoltaic solar panels from this solar farm through the Province's Feed-in-Tariff (FIT) program (enabled by the Green Energy and Green Economy Act). The project will require approval under Section 29 of Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Section V.0.1 of the *Ontario Environmental Protection Act*.

Ontario Regulation 359/09 requires that all renewable energy projects conduct a records review of water bodies (REA Section 30). This report was completed to address the regulatory requirements for the REA process. It is intended that this report will be submitted to the Ministry of the Environment (MOE) for review and comment as required in Ontario Regulation 359/09.

Created By: KR
Created For: JG
Date Created: 06/10/2010
Date Modified: 12/16/2010
File Path: I:\GIS\103523 - Simcoe Solar
Energy Centre (Woodville)\Mapping\Records
Review - Sandringham\Figure 1 General Site Location.mxd

2. The Proponent

Invenergy Canada is an experienced developer, owner and operator of power generation and energy delivery assets. Company activities include developing, building, owning and operating renewable energy facilities. In the course of developing renewable energy projects, Invenergy Canada satisfies various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Invenergy Canada builds long-term relationships with the communities that host its projects and is committed to the health and welfare of the communities of Argyle and Glenarm and the City of Kawartha Lakes.

Contact information for Invenergy Canada is as follows:

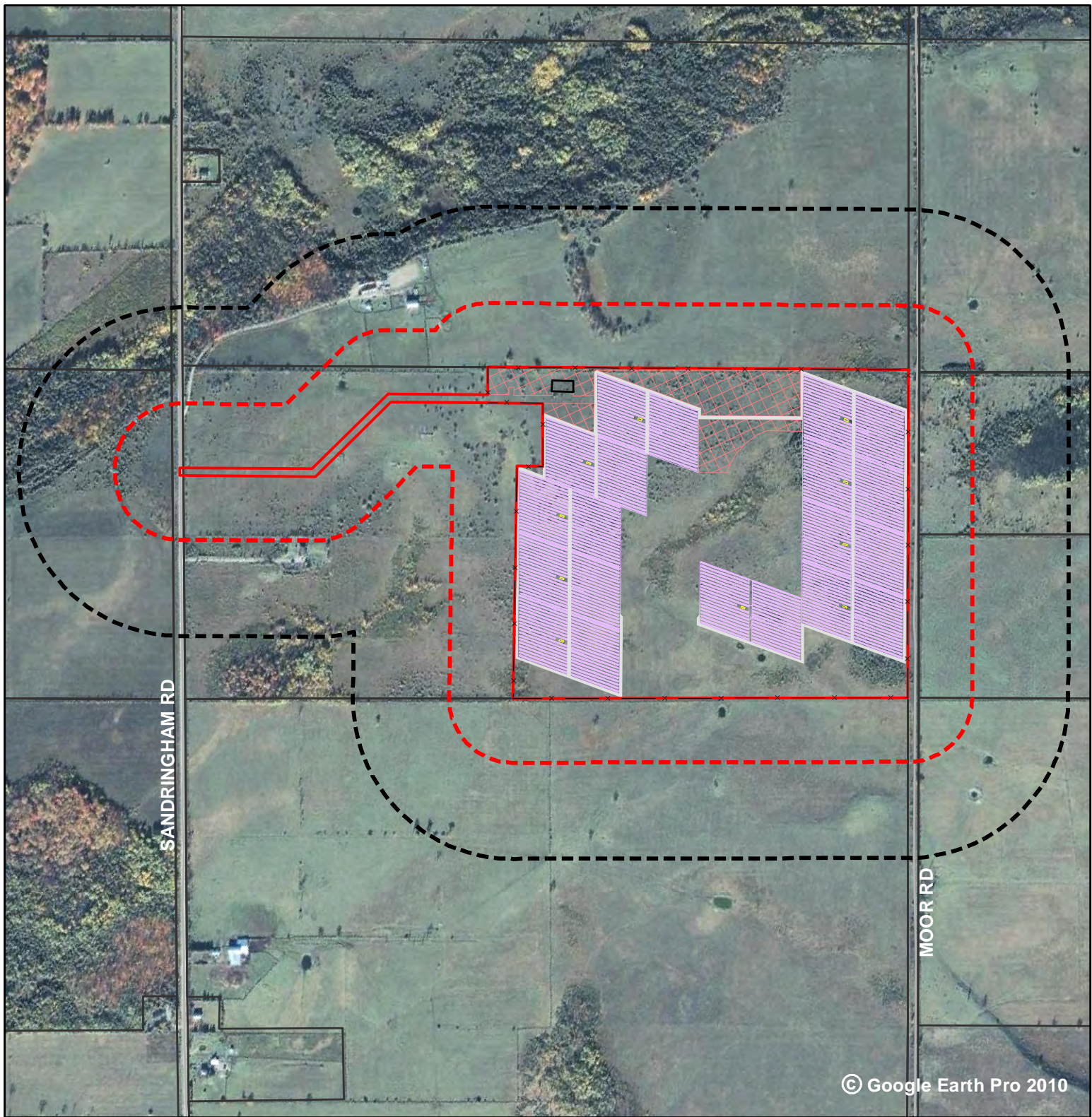
Full Name of Company:	<i>Invenergy Solar Canada ULC</i>
Address:	<i>12 King Street West, Bolton, Ontario, L7E 1C7</i>
Telephone:	<i>(905) 857-6936</i>
Fax:	<i>(905) 857-8948</i>
Prime Contact:	<i>Ryan Ralph, Development Manager</i>
Email:	<i>RRalph@invenergyllc.com</i>

Dillon Consulting Limited is the prime contractor for the preparation of this *Records Review Report*. The Dillon contact is:

Full Name of Company:	<i>Dillon Consulting Limited</i>
Address:	<i>235 Yorkland Boulevard, Suite 800</i> <i>Toronto, Ontario, M2J 4Y8</i>
Telephone:	<i>Office: (416)-229-4646 ext 2355</i>
Prime Contact:	<i>Don McKinnon, REA Project Manager</i>
Email:	<i>DPMckinnon@dillon.ca</i>

3. Project Location

The proposed Class 3 solar facility is located at 764 Sandringham Road near the communities of Argyle and Glenarm, in the City of Kawartha Lakes. **Figure 1** shows the general location of the project. The solar resource quality in this region is very good and the site was selected by considering daily average solar radiation, ease of access to the local electrical system and environmental considerations. **Figure 2** shows the project location, as defined in Ontario Regulation 359/09, to the location encompassing all project components and includes a 120 m setback for adjacent natural features (see the project *REA Natural Heritage Assessment Reports* for more information) and water bodies. All project components, including solar modules and electrical facilities such as inverters, transformers, substations and electrical lines, will be located on private land or municipal rights-of-way. The planned solar panel installation will occur primarily within lands currently designated as prime agriculture, unevaluated wetlands and environmental protection (City of Kawartha Lakes 2010; see **Appendix A**).



Invenergy Canada

Figure 2: Project Location

Legend

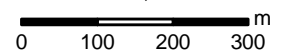
- Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Parcels

Project Components

- Solar Panel Layout
- Access/Gravel Roads
- Substation
- Inverters
- Construction Laydown Area
- Project Security Fence



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Date Created: 06/10/2010

Date Modified: 06/10/2011

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Solar Energy Centre (Woodville)\Mapping\

Records Review - Sandringham\Figure 2

Project Location.mxd

4. Records Review Methodology

A records review was completed, consistent with Section 30 of Ontario Regulation 359/09, for the project location (see **Figure 2**) using secondary source information.

Section 30 of Ontario Regulation 359/09 states a natural heritage assessment for a renewable energy facility includes a records review to search for and determine whether the project location is:

1. In a water body;
2. 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,
3. Within 300 m of the average annual high water mark of a Lake Trout lake that is at or above development capacity
4. Within 120 m of the average annual high water mark of a permanent or intermittent stream, or
5. Within 120 m of a seepage area.

Under Ontario Regulation 359/09, the definition of a water body includes lakes, permanent and intermittent streams and seepage areas, 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) Temporary 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 site and outdoor confinement areas.

Table 1 outlines the secondary sources of information used to conduct the natural heritage features records review.

Table 1: Records and Resources Search and Analyzed During Records Review

Record Source		Records Requested and/or Reviewed
Ministry of Natural Resources		
District Office: Peterborough		Contact: Eric Prevost, REA Planner, via email
Date(s) of Request: Various dates in May 2010		<ul style="list-style-type: none"> Records relating to water bodies and aquatic species
Manuals/Guidelines		Natural Heritage Reference Manual, Second Edition, March 2010
		Inland Ontario Lakes Designated for Lake Trout Management, May 2006
Land Information Ontario, data requested/accessed February 2011		<ul style="list-style-type: none"> Interactive Online Mapping Tool Warehouse Data (see Appendix B for data layers obtained)
Ontario Crown Land Use Policy Atlas, online data accessed February 2011		<ul style="list-style-type: none"> Information related to Crown land, federal and provincial parks and jurisdictional boundaries
Natural Heritage Information Centre (NHIC)		<ul style="list-style-type: none"> Biodiversity Explorer <ul style="list-style-type: none"> Rare species Natural areas Invasive species
Ministry of the Environment		
Regional Office: Peterborough		Contact: David Bradley, via phone and email
Date of Request: February 2011	Date of Data Receipt: Pending	<ul style="list-style-type: none"> Records relating to water bodies
Federal Government		
Canadian Wildlife Service		Contact: Rob Dobos, CWS Biologist, via email
Date of Request: November 2010	Date of Data Receipt: Pending	<ul style="list-style-type: none"> Records relating to water bodies and aquatic species
Conservation Authority		
Kawartha Region Conservation Authority		Contact: Leah Breivik, Acting Resources Planner, via email and written correspondence
Date of Request: July 2010	Date of Data Receipt: August 2010	<ul style="list-style-type: none"> Records relating to water bodies and aquatic species Relevant studies undertaken in area of project location
Lake Simcoe Region Conservation Authority		Contact: Jackie Burkart, Senior Planner, via email
Date of Request: July 2010	Date of Data Receipt: August 2010	<ul style="list-style-type: none"> Records relating to water bodies and aquatic species Relevant studies undertaken in area of project location
Manuals/Guidelines/Reports		Relevant studies undertaken in area of project location
		Lake Simcoe Watershed Report Card - 2008
		Kawartha Conservation Watershed Report Card - 2008
Municipality		
Single-Tier Municipality:		<ul style="list-style-type: none"> Official Plan and mapping Schedules reviewed

Record Source	Records Requested and/or Reviewed
City of Kawartha Lakes	
Planning Authorities and Local Boards	
Municipal Planning Authority	Not applicable in project location
Local Planning Board	Not applicable in project location
Local Roads Board	Not applicable in project location
Local Services Board	Not applicable in project location
Other Resources	
Distribution of Fish and Mussel Species at Risk Mapping for KRCA	Fisheries and Oceans Canada (2010) mapping of occurrences of federally listed <i>Endangered</i> , <i>Threatened</i> and <i>Special Concern</i> fish and mussel species
Great Lakes Conservation Blueprint for Aquatic Biodiversity. Volume 2: Tertiary Watershed Summaries	Phair et al. 2005. Produced by the Nature Conservancy of Canada <ul style="list-style-type: none"> Summary of statistics and land use relating to water bodies in each ecodistrict
Provincial Plan Area Records	
Niagara Escarpment Commission	Project location does not fall within the Niagara Escarpment Plan Area
Oak Ridges Conservation Plan Area	Project location does not fall within the Oak Ridges Conservation Plan Area
Greenbelt Plan Area	Project location does not fall within the Greenbelt Plan Area
Lake Simcoe Protection Plan	Project location partially lies within the Lake Simcoe Protection Plan (Appendix C)

5. Records Review Results

As stated in **Section 3.0**, the project location is located approximately 5 km east of the community of Argyle and 7 km to the west of Glenarm. The project location falls within Ecodistrict 6E-08 (Peterborough) and was summarized as part of the Great Lakes Conservation Blueprint for Aquatic Biodiversity (Phair et al., 2005). The project location falls within the Gull Tertiary Watershed 2HF, which is an inland watershed that ultimately drains into Lake Ontario. This watershed straddles the Canadian Shield and southern Ontario. Much of the watershed remains in a natural state with mixed forest and dense deciduous forest as the dominant vegetation type. The dominant land uses are tourism, cottage activity and agriculture. There are no large cities, but smaller communities include Haliburton, Fenelon Falls and Minden. Approximately 78.5% of the watershed is made up of stream systems and just over 11.5% is comprised of lake systems (Phair et al., 2005).

Falling within the Balsam Lake quaternary watershed (Staples Creek sub-watershed), water typically flows in a northeasterly direction towards Balsam Lake (KRCA 2008). This sub-watershed has “average” surface water quality with respect to nutrients and metals and is representative of the overall Kawartha Conservation watershed (KRCA 2008). No fish community information was available for this area (Brett Tregunno, Aquatic Biologist, KRCA, July 27, 2010, personal communication).

5.1 Water Bodies

Based on our review and analysis of the records and resources outlined in **Table 1**, and in accordance with Ontario Regulation 359/09, determinations were made whether the project location is in a water body or within 120 m of the average annual high water mark of a water body (see **Figure 3**). In consideration of potential Lake Trout lakes and to meet the requirements of the Construction Plan Report, water bodies within 300 m are also noted. The Construction Plan Report will be included as part of the REA Application.

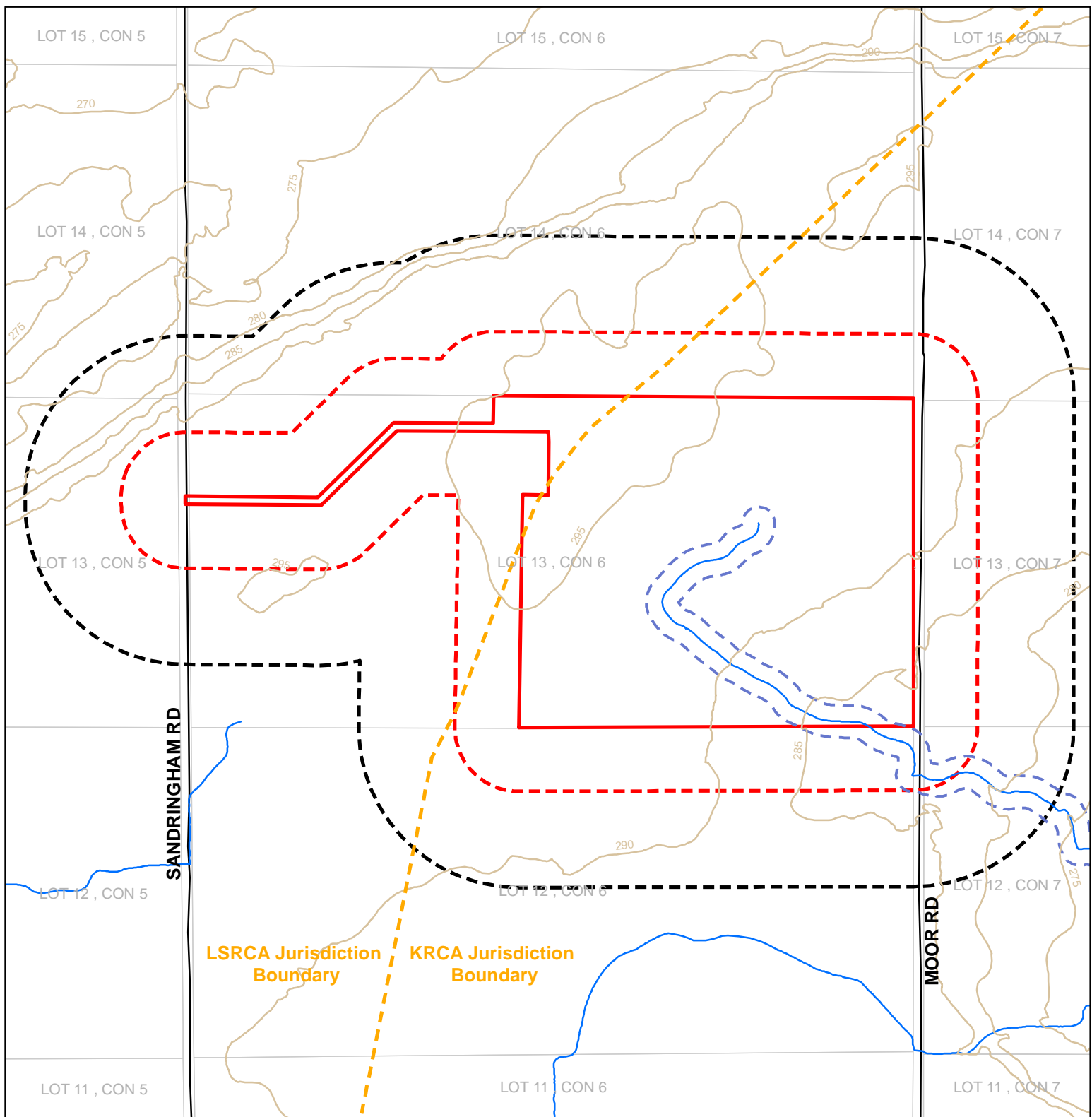
5.1.1 Average Annual High Water Mark Determination

Consultation was undertaken with the KRCA to determine the average annual high water mark for water bodies within the KRCA jurisdiction. For the purposes of this REA reporting, the average annual high water mark was taken to be the top of bank of any and all identified water

bodies. No water bodies were mapped within LSRCA jurisdiction within 300 m of the project location.

5.1.2 Lakes

A search and analysis of the records and resources outlined in **Table 1** did not identify any named lakes, as defined by Ontario Regulation 359/09, in the project location or within the surrounding 300 meters (see **Figure 3**).



Invenenergy Canada

Figure 3: Sandringham Solar Farm, Water Assessment Records Review Map

Legend

- Watercourse
- 5 m Contours
- Roads
- - - Conservation Authority Jurisdiction Boundary
- Project Location
- - - 120 m Project Location Setback
- - - 300m Project Location Setback
- - - KRCA Regulated Area
- Lots/Concessions



1:10,000
0 100 200 300 m



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Energy Centre (Woodville)\Mapping\
Records Review - Sandringham\Figure 3 Water Assessment Records Review.mxd

5.1.3 Lake Trout Lakes

As discussed above, a search and analysis of the records and resources outlined in **Table 1** did not identify any named lakes, as defined by Ontario Regulation 359/09, in the project location or within the surrounding 300 meters. As a result, Lake Trout lakes are not anticipated to occur within 300 m of the project location.

5.1.4 Permanent and/or Intermittent Streams

One stream is mapped traversing the eastern portion of the project location, originating near the centre of the project location and draining in a southeastly direction (**Figure 3**).

5.1.5 Seepage Areas

A search and analysis of the records and resources outlined in **Table 1** did not identify any seepage areas, as defined by Ontario Regulation 359/09, in the project location or within the surrounding 300 meters.

5.2 Aquatic Species at Risk

Species at risk listed under the federal *Species at Risk Act* and provincial *Endangered Species Act, 2007*, with the potential to interact with the project location and/or adjacent lands, are being considered in consultation with the appropriate agency. Reporting related to the protection of these species at risk will be provided to the appropriate agency under separate cover as required. This reporting format meets the requirements as set out in Ontario Regulation 359/09, and is consistent with the direction provided by the MNR and the MOE.

5.3 Provincial Plan Areas

Under Ontario Regulation 359/09, if any part of the project location falls within a provincial plan area the project may be subject to different criterion to evaluate the applicable water bodies. In addition, should development occur within the prescribed setback area of a water body, it may be subject to a different set of prohibitions under Ontario Regulation 359/09. **Table 2** outlines the provincial plan areas that should be considered when planning a renewable energy project and identifies which, if any, are applicable to the project location.

Table 2: Summary of Provincial Plan Areas and Applicability to the Project Location

Provincial Plan Area	Applicability to Project
Oak Ridges Moraine Conservation Plan Area	None
Niagara Escarpment Plan Area	None
Greenbelt - Natural Heritage System	None
Greenbelt – Protected Countryside	None
Lake Simcoe Protection Plan	Overlaps the northwestern portion of the project location (see Figure 3)

5.4 Regulated Areas

Under the *Conservation Authorities Act*, KRCA is responsible for the application and enforcement of the *Regulation of Development, Interference with Wetlands and Alterations to Shoreline and Watercourses* that was approved and then filed on May 4, 2006 (Ontario Regulation 182/06). LSRCA is responsible for the application and enforcement of the *Regulation of Development, Interference with Wetlands and Alterations to Shoreline and Watercourses* that was approved and then filed on May 4, 2006 (Ontario Regulation 179/06). Regulated Areas are lands in proximity to hazardous lands, wetlands and areas susceptible to flooding. Development within these Regulated Areas may require a permit.

Within the LSRCA jurisdiction, there are no Regulated Areas applicable to water bodies within the project location or within 120 m (Jackie Burkart; Senior Planner, LSRCA, August 17, 2010, email correspondence; **Appendix C**). Within the KRCA jurisdiction, the lands adjacent to the mapped stream (approximately 30 m) are regulated under Ontario Regulation 182/06 (Leah Breivik, Acting Resources Planner, KRCA, July 27, 2010, letter correspondence; **Appendix C**)

6. Conclusions

This report is intended to fulfill the requirements for the water assessment records review report under Ontario Regulation 359/09. **Table 3** summarizes the determinations made during this records review. All applicable water bodies within the project location and surrounding 300 m are outlined on **Figure 3**.

Table 3: Summary of the Water Assessment Records Review

Water Body ID	Source of Information	Does the project location overlap a water body?	Is the project location within the prescribed setback for the water body?
Lakes			
NONE			
Lake Trout Lakes			
NONE			
Permanent and/or Intermittent Streams			
One in eastern portion of the project location	MNR LIO Mapping*	✓	✓
Seepage Areas			
NONE			
Provincial Plan Areas			
Northwestern portion of the project location falls within Lake Simcoe Protection Plan Area			
Regulated Areas			
Surrounding 30 m of land adjacent to mapped watercourse			

*see **Appendix B**

The determinations made in this records review will form the baseline knowledge for water bodies in and around the project location. Fieldwork was undertaken to determine the accuracy of this records review for all water bodies identified within the project location or within 300 m, as applicable and as property access allowed. This Water Assessment Records Review Report is the first report of two that will fulfill the water assessment for the REA process according to Section 29 of Ontario Regulation 359/09.

7. References

City of Kawartha Lakes Draft Official Plan. 2010. 174 pp. + Schedules A-4 and B-4.

Fisheries and Oceans Canada (DFO). Conservation Authority Species at Risk Distribution Maps. Kawartha Region Conservation Maps;
<http://www.conservation-ontario.on.ca/projects/DFO.html>. Accessed: July 2010.

Kawartha Conservation Watershed Report Card. 2008. 4pp.

Lake Simcoe Watershed Report Card 2008. Lake Simcoe Conservation Authority. 28pp.

Ontario Ministry of Natural Resources. Crown Land Use Policy Atlas.
<http://crownlanduseatlas.mnr.gov.on.ca/clupa.html>. Last accessed February 2011

Ontario Ministry of Natural Resources. Land Information Ontario.
<http://www.mnr.gov.on.ca/en/Business/LIO/index.html>. Last accessed February 2011.

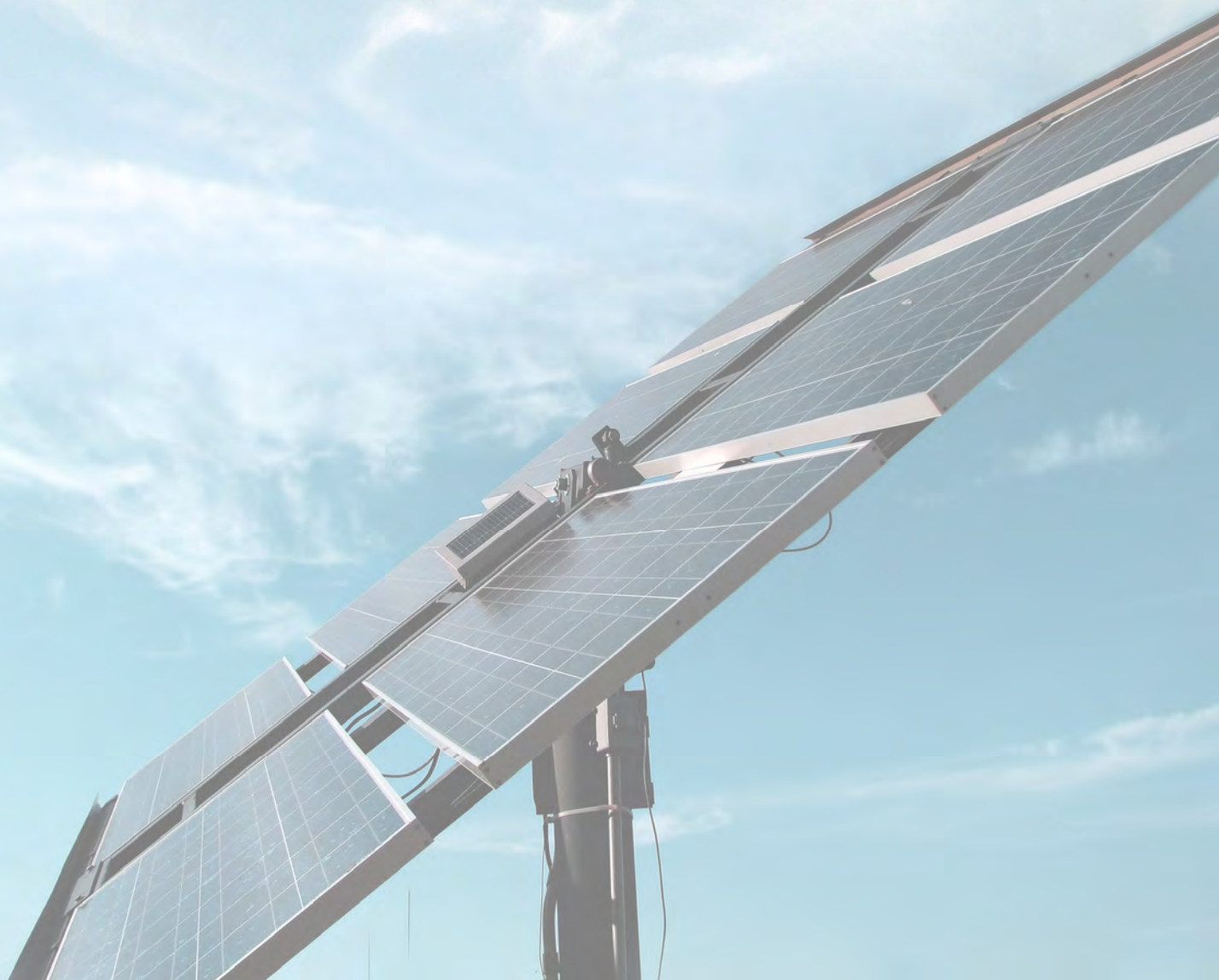
Ontario Ministry of Natural Resources. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248pp.

Ontario Ministry of Natural Resources. Natural Heritage Information Centre Database.
<http://nhic.mnr.gov.on.ca/> Accessed August 2010.

Phair, C., Henson, B.L., and Brodribb, K.E. 2005. Great Lakes Conservation Blueprint for Aquatic Biodiversity. Volume 2: Tertiary Watershed Summaries. 454pp.

APPENDIX A

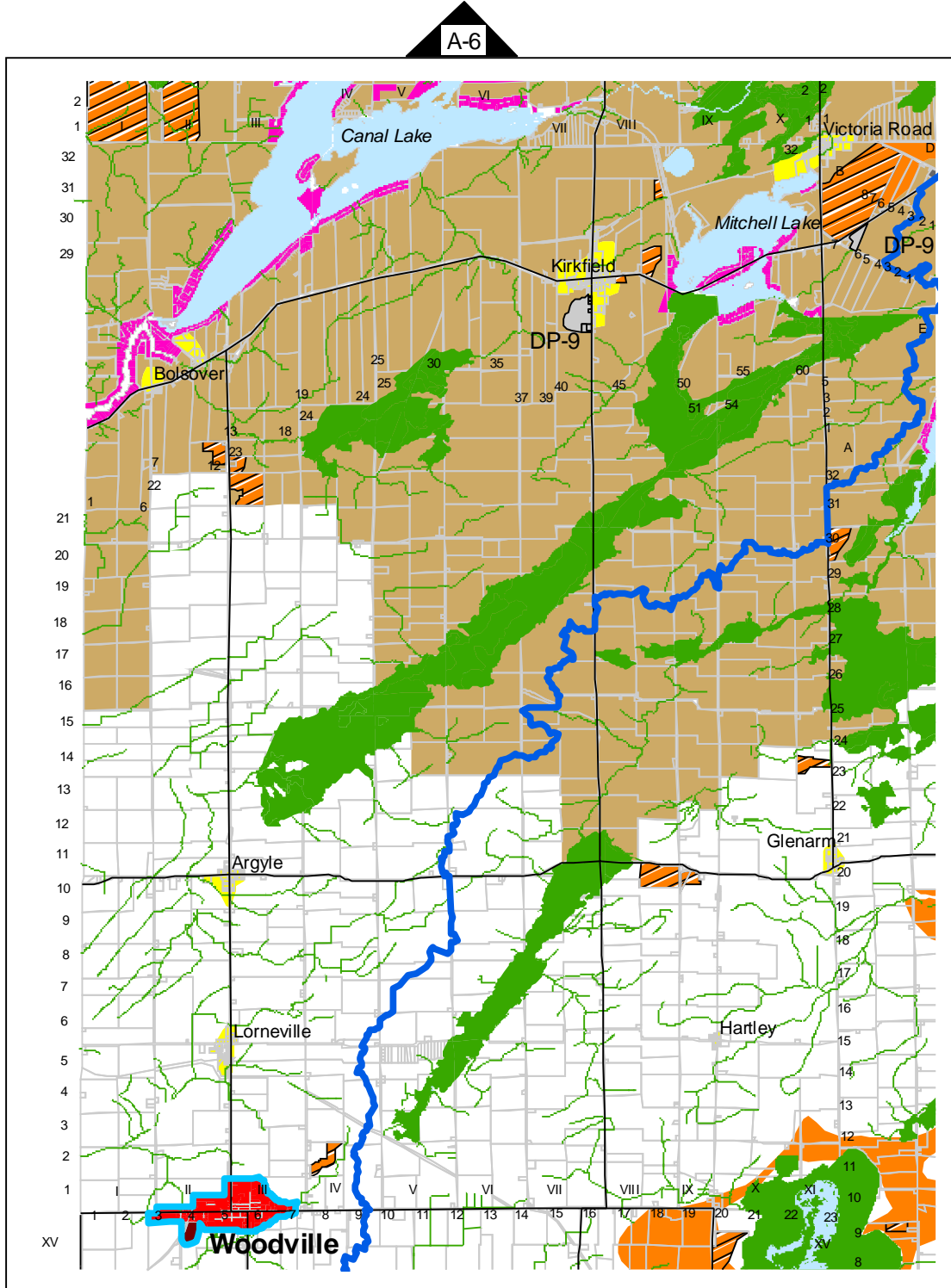
Official Plan Mapping



City of Kawartha Lakes Official Plan

Schedule A-4

(Geographic Township of Eldon)



Land Use Designations

Prime Agricultural	Aggregate
Rural	Resource Reserve
Environmental Protection	Development Plan Area
Urban Settlement Area	Urban Settlement Area
Hamlet Settlement Area	Lake Simcoe Source Water Protection Boundary
Waterfront	
Highway Commercial	
Industrial	

0 0.5 1 2 3 4 5
Kilometers

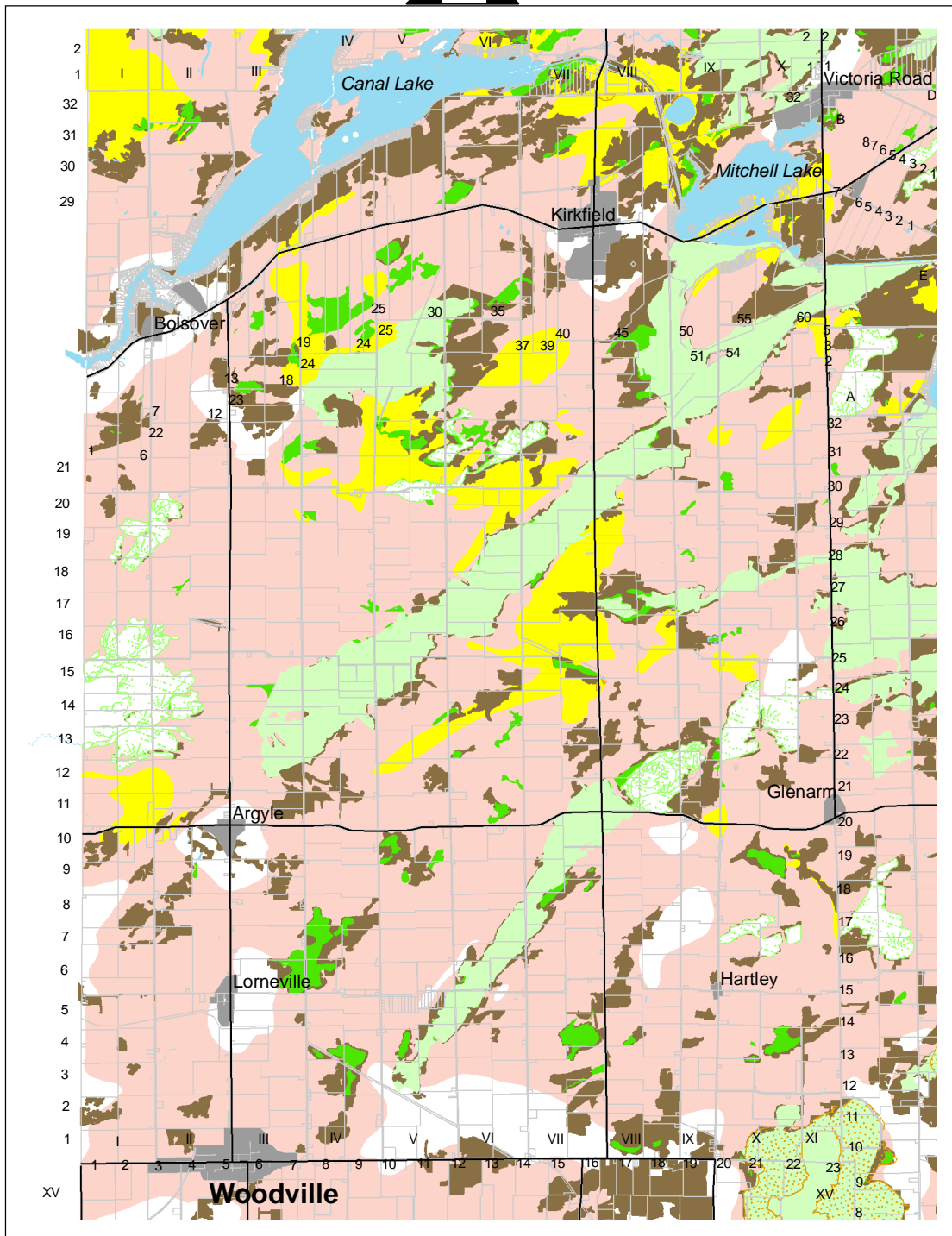


City of Kawartha Lakes Official Plan

Schedule B-4







(Geographic Township of Eldon)

B-6





B-5

Natural Heritage Features

-  ANSI
-  Locally Significant Wetlands
-  Provincially Significant Wetlands
-  Unevaluated Wetlands
-  Waterbodies
-  Wooded Area

Bedrock Overburden

-  less than 1m
-  1 to 8m



City of
KAWARTHA LAKES
Catch the Kawartha spirit

B-2

APPENDIX B

GIS Data Layer Information

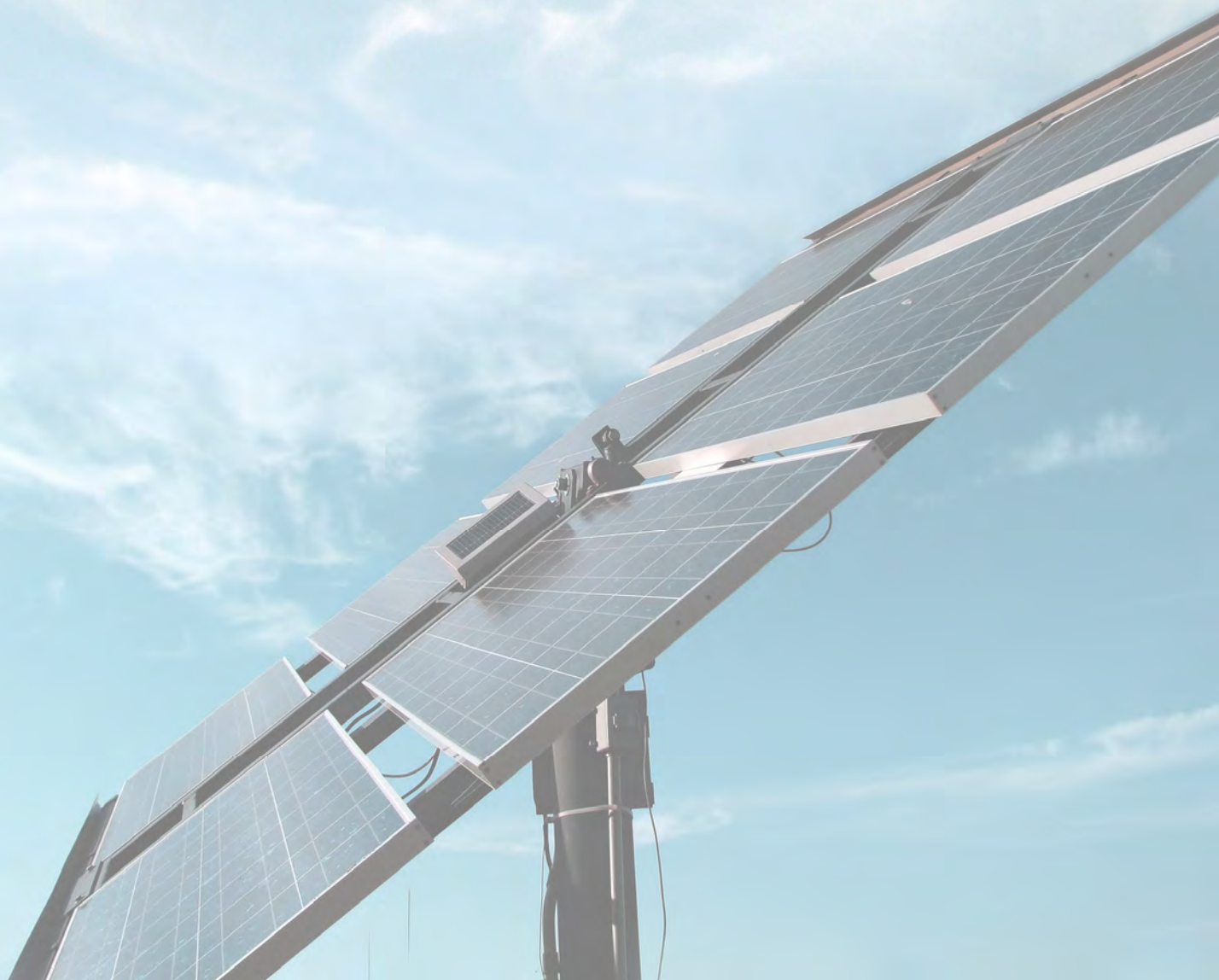
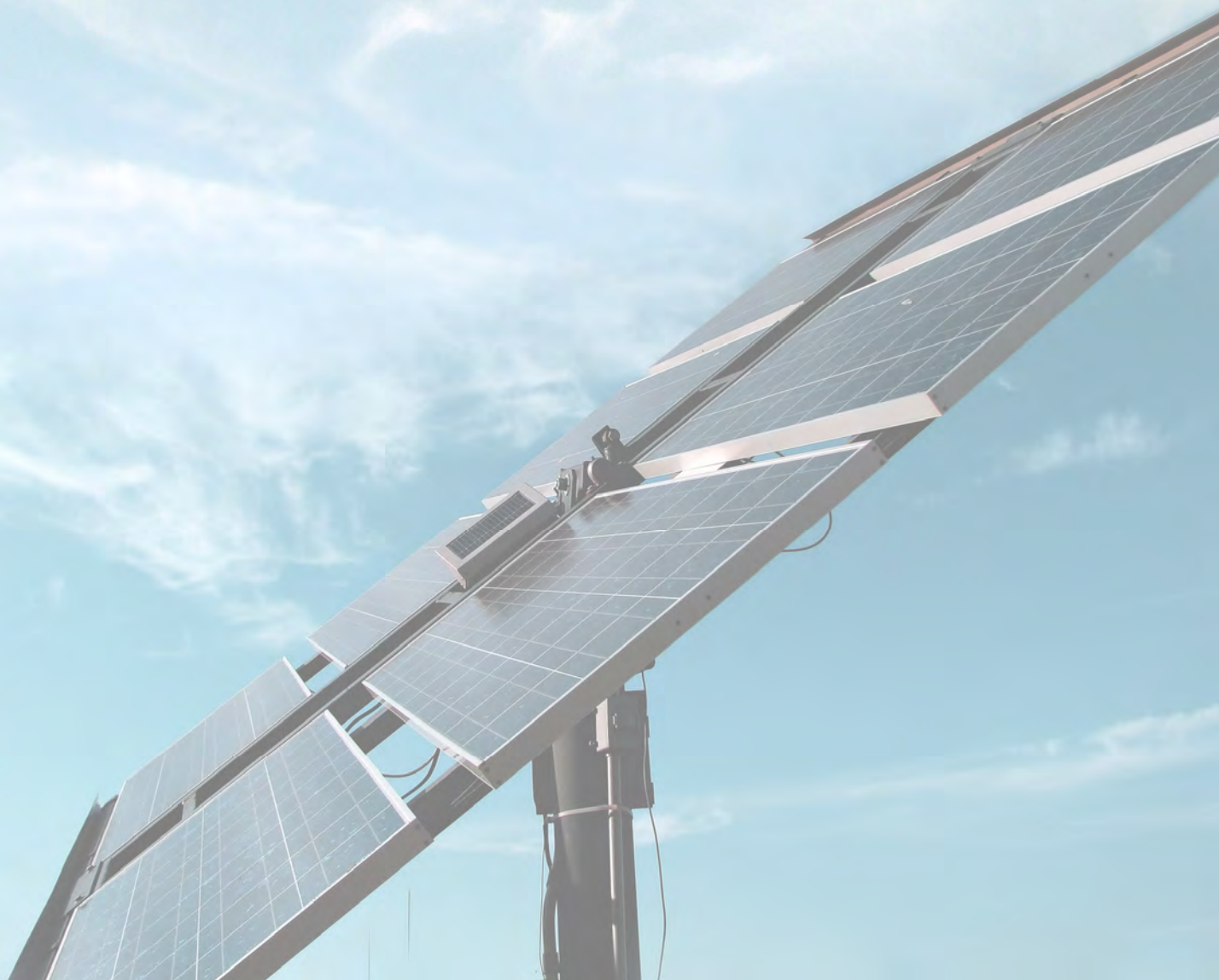


Table B1: GIS Data Layer Information

Title of Data Set	Vintage of Data or Date Info/Searched/Collected	Ownership of Information
Roads	Collected 2007	DMTI Spatial
5m Contours	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Watercourse	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Woodland	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Unevaluated Wetlands	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Lots & Concessions	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
KRCA Regulated Area and jurisdiction boundary	Collected 2010	Kawartha Region Conservation Authority
LSRCA jurisdiction boundary	Collected 2010	Lake Simcoe Region Conservation Authority

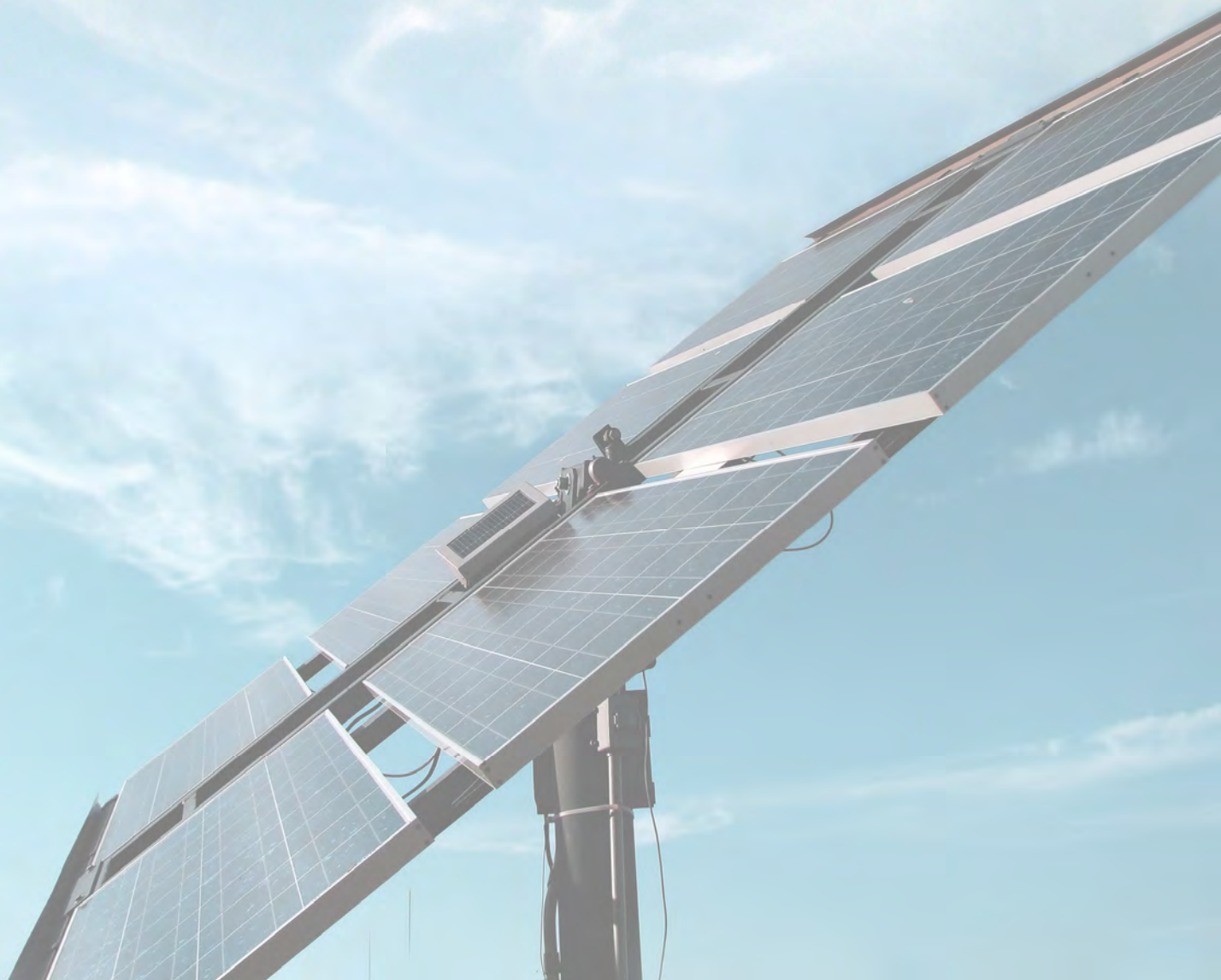
APPENDIX C

Consultation Record



APPENDIX C

C1: Lake Simcoe Region Conservation Authority



Petruniak, Jennifer

From: Jackie Burkart [J.Burkart@lsrca.on.ca]
Sent: Tuesday, August 17, 2010 4:53 PM
To: Petruniak, Jennifer; Mike Walters
Cc: Beverley Booth; Restivo, David; 103523
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jennifer,

I would suggest that since the panels are proposed on the KRCA side that you deal with them on this "no man's land" rather than having 2 Authorities involved. I would suggest that if you stay away from the wetland – beyond 120 metres if possible we would have no issues. You may wish to pass this by the KRCA to see how receptive they are to this suggestion.

Sincerely,

Jackie Burkart
 Senior Planner

Lake Simcoe Region Conservation Authority
 120 Bayview Parkway
 Newmarket, Ontario L3Y 4X1
 905-895-1281

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August 17, 2010 3:58 PM
To: Jackie Burkart; Mike Walters
Cc: Beverley Booth; Restivo, David; 103523
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jackie,

Thanks for providing the information related to this project. I have a question regarding your jurisdictional boundary - in the map I attached from KRCA they defined a different boundary then the one depicted on your map. Would you be able to tell us who has regulatory authority over the wetland in the SW corner of the property? Leah Breivik at KRCA has referred to this area as one of the potential "no man's land" that occasionally occurs when jurisdictional lines don't meet. What generally happens if development is to occur in this area?

Thanks,
 Jen



Jennifer Petruniak, M.Sc., LEED AP
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 Toronto, Ontario, M2J 4V8
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 M - 416.671.6825
 F - 416.229.4692
JPetruniak@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

From: Jackie Burkart [mailto:J.Burkart@lsrca.on.ca]
Sent: Tuesday, August 17, 2010 11:35 AM
To: Mike Walters; Petruniak, Jennifer
Cc: Beverley Booth
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jennifer,

Attached is the LSRCA's regulation mapping. There appears to be a wetland in the southwest corner of the property that appears to be outside of the LSRCA's jurisdiction. The adjacent lands are within our current boundary. I have attached a map for your convenience. Any access road should avoid the wetland and area of influence (120 metres). I provide the following information as it relates to our jurisdiction.

- watercourse/drain classifications and thermal stream classifications **none**
- regulation limits **see attached map**
- fish and benthic community information **no watercourse**
- natural environment studies in and/or adjacent to the study area **none**
- floodplain mapping **no floodplain**
- regionally or locally significant/rare flora, fauna, vegetation communities **please check with the NHIC in Peterborough**
- any additional natural environment data you may have for the indicated area **I am not aware of any studies in this area**

I hope this helps. Please email me if you have any further questions.

Kind regards,

Jackie Burkart
Senior Planner

Lake Simcoe Region Conservation Authority
120 Bayview Parkway
Newmarket, Ontario L3Y 4X1
905-895-1281

From: Mike Walters
Sent: August 17, 2010 9:22 AM
To: Petruniak, Jennifer
Cc: Jackie Burkart; Beverley Booth
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jennifer:

The file was forwarded to immediately upon receipt to Jackie Burkart, who is the Senior Planner working on the application. I will ask Jackie to contact you directly about the status of the file. Please feel free to contact me if there are any concerns.

Regards,

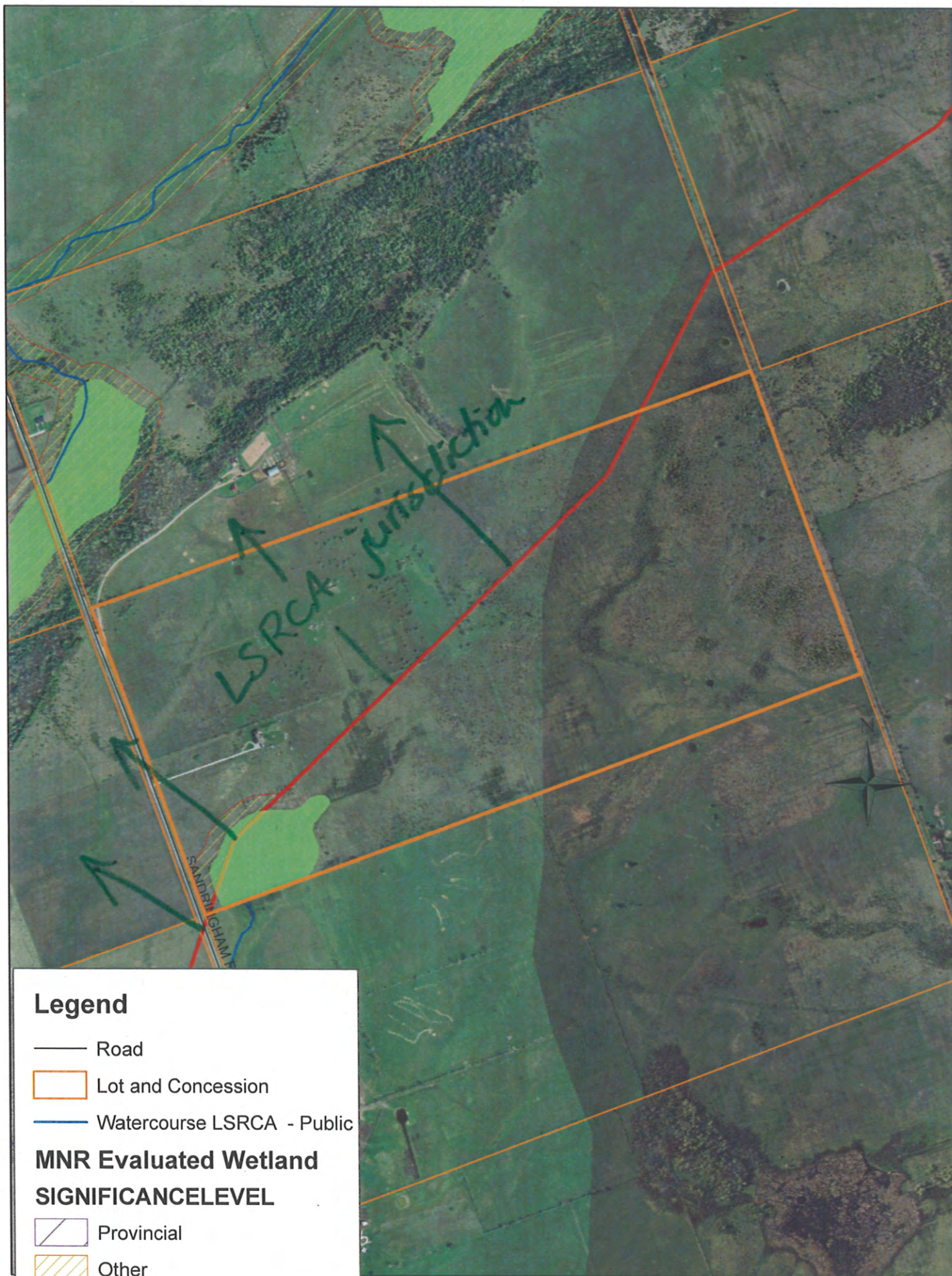
Michael Walters
General Manager, Watershed Management
Lake Simcoe Region Conservation Authority
120 Bayview Parkway, Newmarket, ON L3Y 4X1
905-895-1281, ext 234
www.lsrca.on.ca
Proud Winner of the [2009 International Thiess Riverprize](#)



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Legend

— Road

Lot and Concession

Watercourse LSRCA - Public

MNR Evaluated Wetland

SIGNIFICANCE LEVEL

Provincial

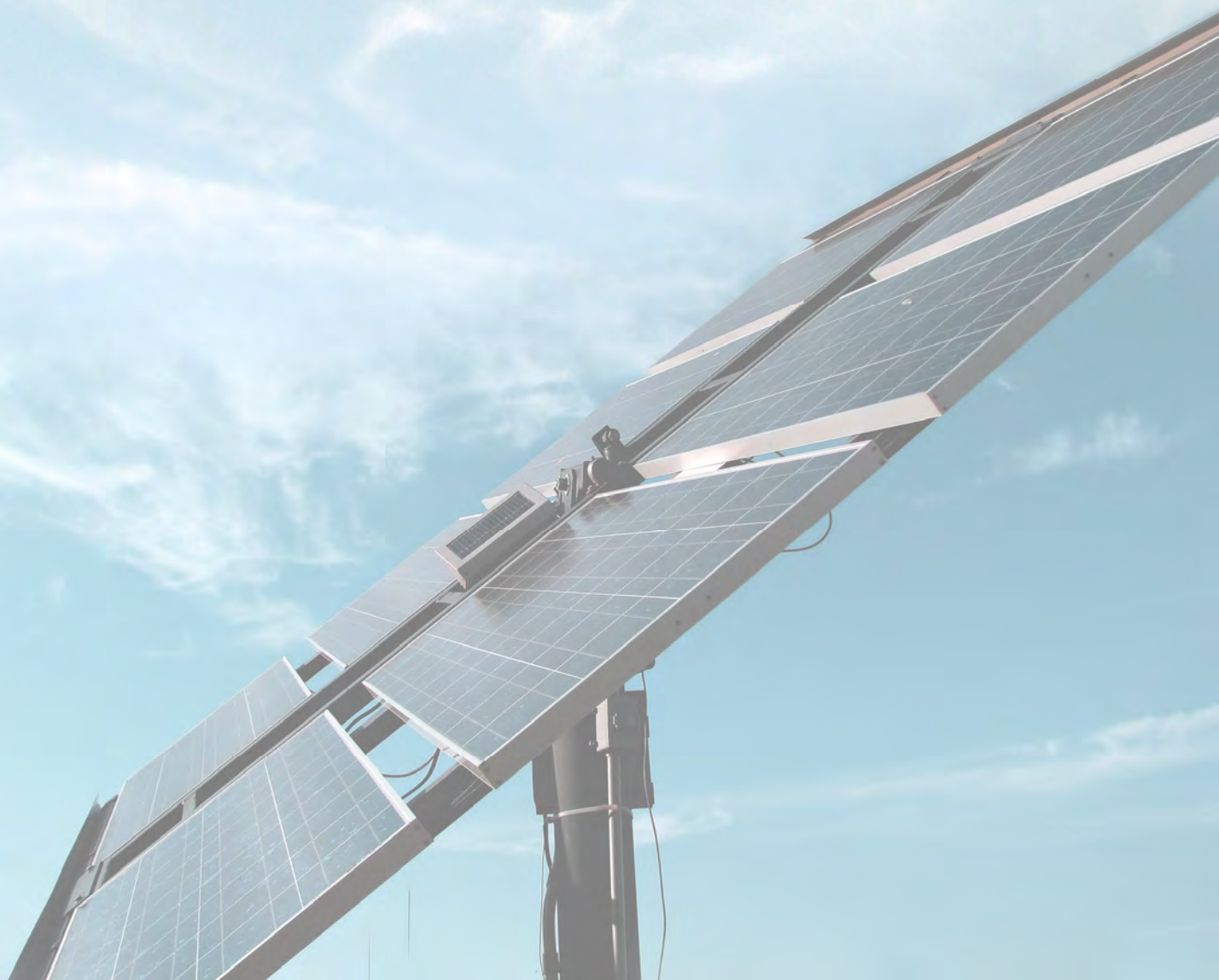
Other

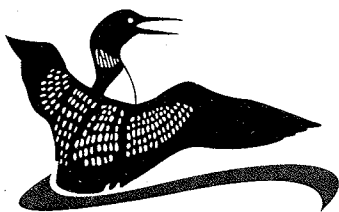
ELC_Wetland

Current Regulation Limit

APPENDIX C

C2: Kawartha Region Conservation Authority





KAWARTHA CONSERVATION

277 Kenrei Road
Lindsay, ON K9V 4R1

Tel: 705.328.2271
Fax: 705.328.2286

www.kawarthaconservation.com
geninfo@kawarthaconservation.com

Member of Conservation Ontario

*"Leading the
way to
abundant
clean water
within
a healthy
landscape"*

Proud to work in association with
our watershed municipalities:

City of Kawartha Lakes

Township of Scugog

Municipality of Clarington

Township of Brock

Township of Galway-Cavendish
-Harvey

Township of Cavan-Monaghan

August 10, 2010

KRCA File No. 11586

Ms. Jennifer Petruniak
Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto ON M2J 4V8

Regarding:

**Information Request
Lot 13, Concession 6
Geographic Township of Eldon
City of Kawartha Lakes
764 Sandringham Road**

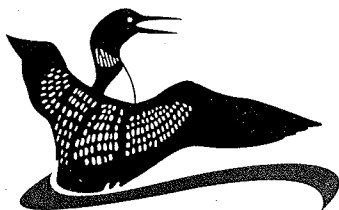
Dear Ms. Petruniak:

We have now completed our review of the above-noted information request for the development of a solar farm on the above-noted property. Kawartha Conservation (KRCA) can provide the following environmental advisory comments for your consideration.

- The eastern half of the subject property is located within the KRCA's jurisdiction. The western half of the subject property is located within the Lake Simcoe Region Conservation Authority's (LSRCA's) jurisdiction.
- Portions of the eastern half of the subject property are located within an area regulated under this Authority's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 182/06). This regulation incorporates areas such as river and stream valleys, steep slopes, watercourses, floodplains and wetlands plus an allowance associated with each feature.
- Specific to this application, there are wetland areas on the subject property. Further, based on our mapping and as reflected on the KRCA map provided to your office on July 27, 2010 there appears to be an identified watercourse that traverses the eastern half of the subject property.

Based on our review of the Ecological Land Classification (ELC) data provided by your office in conjunction with our mapping, we can confirm that there are two wetland areas on the subject property. One of which is located within the southwest corner of the property and therefore within the LSRCA's jurisdiction. The other wetland surrounds the northern reach of the watercourse identified on the aforementioned map, in the middle of the east half of the subject property. KRCA policies generally prohibit development in all wetlands. Further, a permit from this office would be required for development and or site alteration proposed within 30 metres of the wetland.





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Township of Brock

Township of Galway-Cavendish
-Harvey

Township of Cavan-Monaghan

KRCA File No. 11586

August 10, 2010

Page 2 of 2

Based on a site visit that was conducted on July 27, 2010, we can advise that the watercourse identified on our mapping does not meet the Conservation Authorities Act (Section 28(25)) definition of a 'watercourse' given that no identifiable depression in the ground was observed. Therefore, the mapped watercourse is not regulated under this Authority's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 182/06). We would however note that this area may serve as potential headwaters for Staples Creek and we would expect that this be taken into consideration for detailed site planning. Further as your office has identified, the ponds with the connecting swale provide fish habitat. We anticipate that this would also be taken into consideration for detailed site planning.

The above comments reflect our understanding, at the time of writing of the best available data, applicable policies and regulations, and the proposal. Changes in one or more of the above factors may affect our position in the future.

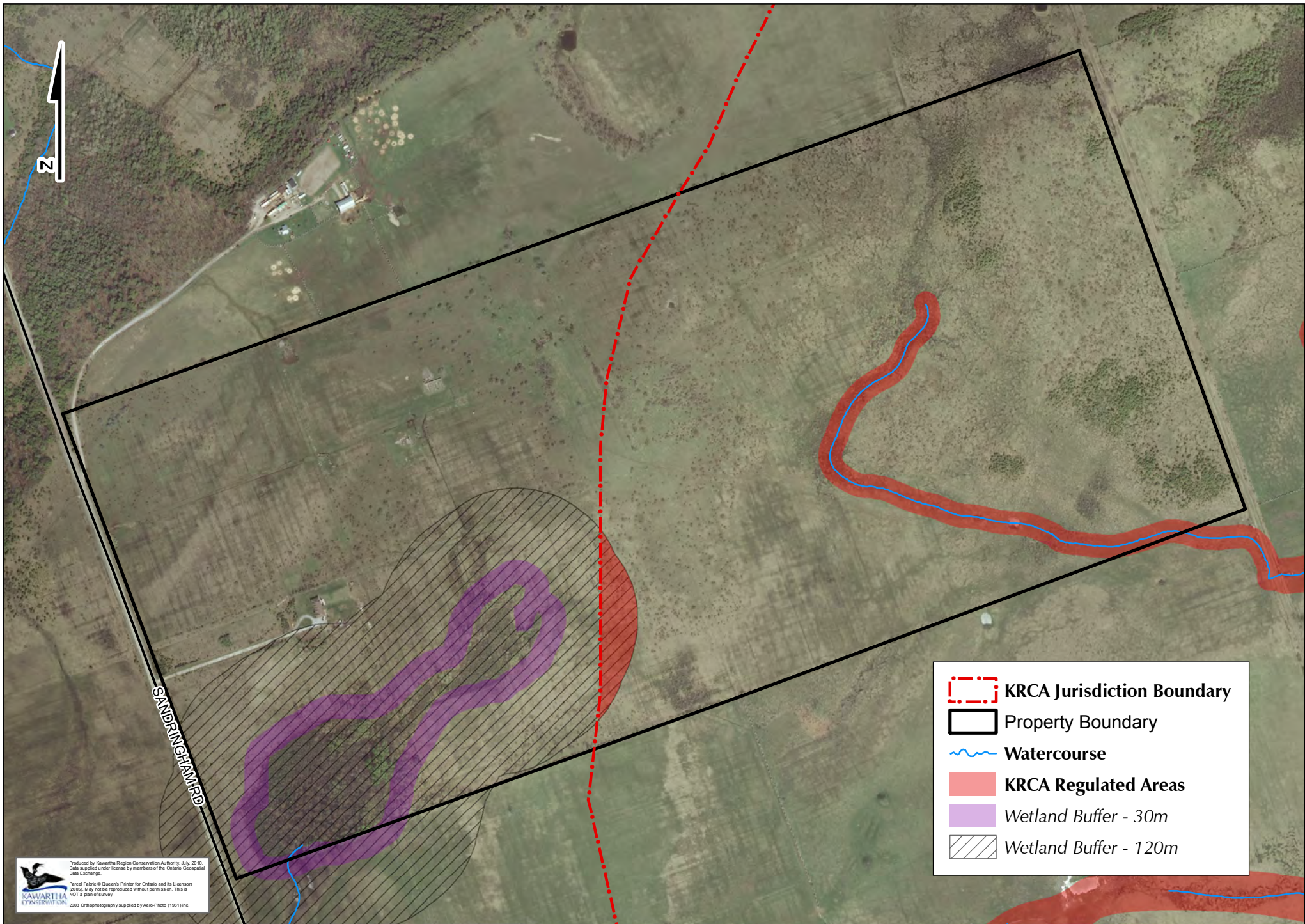
I trust this meets your information requirements at this time. Should you require any additional information, please do not hesitate to contact this office.

Yours truly,

Leah Breivik
Acting Resources Planner

Cc. Ms. Donna Villemaire, KRCA Chair
Mr. Dave Marsh, KRCA Director
Mr. Lloyd Robertson, KRCA Director





Lot 13 ,Concession 6, Eldon Township

Petruniak, Jennifer

From: Peter Waring [pwaring@kawarthaconservation.com]
Sent: Thursday, August 26, 2010 7:51 AM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting

Hi Jennifer,

By way of follow-up to your previous email, I had a discussion with some folks here at KRCA. Staff are correct, isolated ponds are not a concern from a fish habitat standpoint. So, long story short, if the proposed solar development excluded the wetland and the 30 meter buffer you would not require a permit from us. We would ask however that you mark the wetland boundary and buffer on your site plan and share it with us at your earliest convenience.

I hope this clears up any confusion.

Regards

Peter

Peter Waring
 Kawartha Conservation
 Manager of Planning and Regulations
 277 Kenrei Road
 Lindsay, ON K9V 4R1

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-25-10 8:41 AM
To: pwaring@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; 103523; Restivo, David; btregunno@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting

Hi Peter,

Regarding the ponds, while on site on July 27 with Leah and Brett we discussed these. Leah and Brett advised that the ponds were not regulated by the CA. I spoke with Brett about development in and around the ponds and the potential relocation of any fish/frogs. He identified the ponds as isolated dug farm ponds used for watering cattle. They are not connected to the greater system. Leah and Brett identified no issues with infilling these ponds if necessary and discouraged against relocation of any species due to the potential for introducing unwanted species into a new system.

For the REA applications, these dug farm ponds do not meet the definition of a "water body" as defined by the Act (Ontario Regulation 359/09). This is outlined in the Water Report submitted with the application package to the MOE.

If you have any questions, please don't hesitate to contact me.

Thanks,
 Jen



Jennifer Petruniak, M.Sc., LEED AP
Dillon Consulting Limited
 235 Yorkland Blvd., Suite 800
 Toronto, Ontario, M2J 4V8
 T - 416.229.4647 ext. 2432
 M - 416.671.6825
 F - 416.229.4692
JPetruniak@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

From: Peter Waring [mailto:pwarining@kawarthaconservation.com]
Sent: Tuesday, August 24, 2010 4:56 PM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com; 103523; Restivo, David
Subject: RE: Sandringham Solar Meeting

Hi Jennifer,

While KRCA would prefer that you took a systems approach on the site, looking at the hydrologic linkages between wetland, the ponds and down stream, it is only the wetland that would fall within our regulatory authority. The "stream" does not have defined channel and therefore doesn't meet the meet definition under the legislation. However, there is still the question of the ponds and therefore the fish habitat. While we have a level 3 agreement with the federal DFO to address these matters, it is not clear to us who has the responsibility under Green Energy Act applications. So I would suggest you may wish to contact MNR or MOE to get their advice.

Cheers

Peter

Peter Waring
Kawartha Conservation
Manager of Planning and Regulations
277 Kenrei Road
Lindsay, ON K9V 4R1

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-24-10 12:47 PM
To: pwarining@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; 103523; Restivo, David
Subject: RE: Sandringham Solar Meeting

Hi Peter,

Quick question - as indicated in Leah's letter to us on August 10, 2010 she indicated that the regulated area surrounding the wetland is 30 m. So long as our development stays outside of this, therefore eliminating the need for any permitting, will we need to correspond any further with KRCA on this property?

Thanks,
Jen

From: Peter Waring [mailto:pwarining@kawarthaconservation.com]
Sent: Tuesday, August 24, 2010 12:15 PM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting

Hi Jennifer,

Thank you for the update regarding your plans for this project. We understand and look forward to seeing the proposed site plans for the project as soon as you are in a position to share them with us.

3/7/2011

Regards,

Peter

Peter Waring
Kawartha Conservation
Manager of Planning and Regulations
277 Kenrei Road
Lindsay, ON K9V 4R1

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-24-10 11:14 AM
To: pwaring@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; Restivo, David; 103523
Subject: RE: Sandringham Solar Meeting

Hi Peter,

Thanks for your email. At this time we're investigating other options to try and avoid developing in the wetland. With this being considered, we'd like to cancel the meeting set-up for this week. Should it be determined that it's technically not feasible/efficient/desirable to work with a solar layout that avoids this wetland feature, we'll move ahead with the pre-consultation for the permit application.

We really appreciate all the advice and guidance Leah and yourself have provided.

Thanks,
Jen

From: Peter Waring [mailto:pwaring@kawarthaconservation.com]
Sent: Tuesday, August 24, 2010 10:23 AM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting
Importance: High

Hi Jennifer,

Unfortunately April 26 doesn't work. We could do a teleconference this Friday at 9:00 a.m. Leah is away the following week and I would like her to be involved. Trust this can work.

Thanks
Peter

Peter Waring
Kawartha Conservation
Manager of Planning and Regulations
277 Kenrei Road
Lindsay, ON K9V 4R1

3/7/2011

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-20-10 3:50 PM
To: pwaring@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; Restivo, David; 103523
Subject: Sandringham Solar Meeting

Hi Peter,

Thanks for taking the time to discuss this project with us today. We really appreciate the input and advice from you and Leah to date. We'd like to schedule a meeting for Thursday, August 26 at 1PM to review the draft permit application and draft Terms of Reference for a Scoped EIS that we will submit early next week. As discussed, we'd like to proceed under the guidelines of an approved ToR for the Scoped EIS by the end of next week.

If the time of this meeting doesn't work with your schedule, please let us know.

Thanks again and have a great weekend.

Regards,
 Jen



Jennifer Petruniak, M.Sc., LEED AP
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 235 Yorkland Blvd., Suite 800
 Toronto, Ontario, M2J 4V8
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 M - 416.671.6825
 F - 416.229.4692
JPetruniak@dillon.ca
www.dillon.ca

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3/7/2011



SITE INVESTIGATION REPORT

Water Assessment

March 2011



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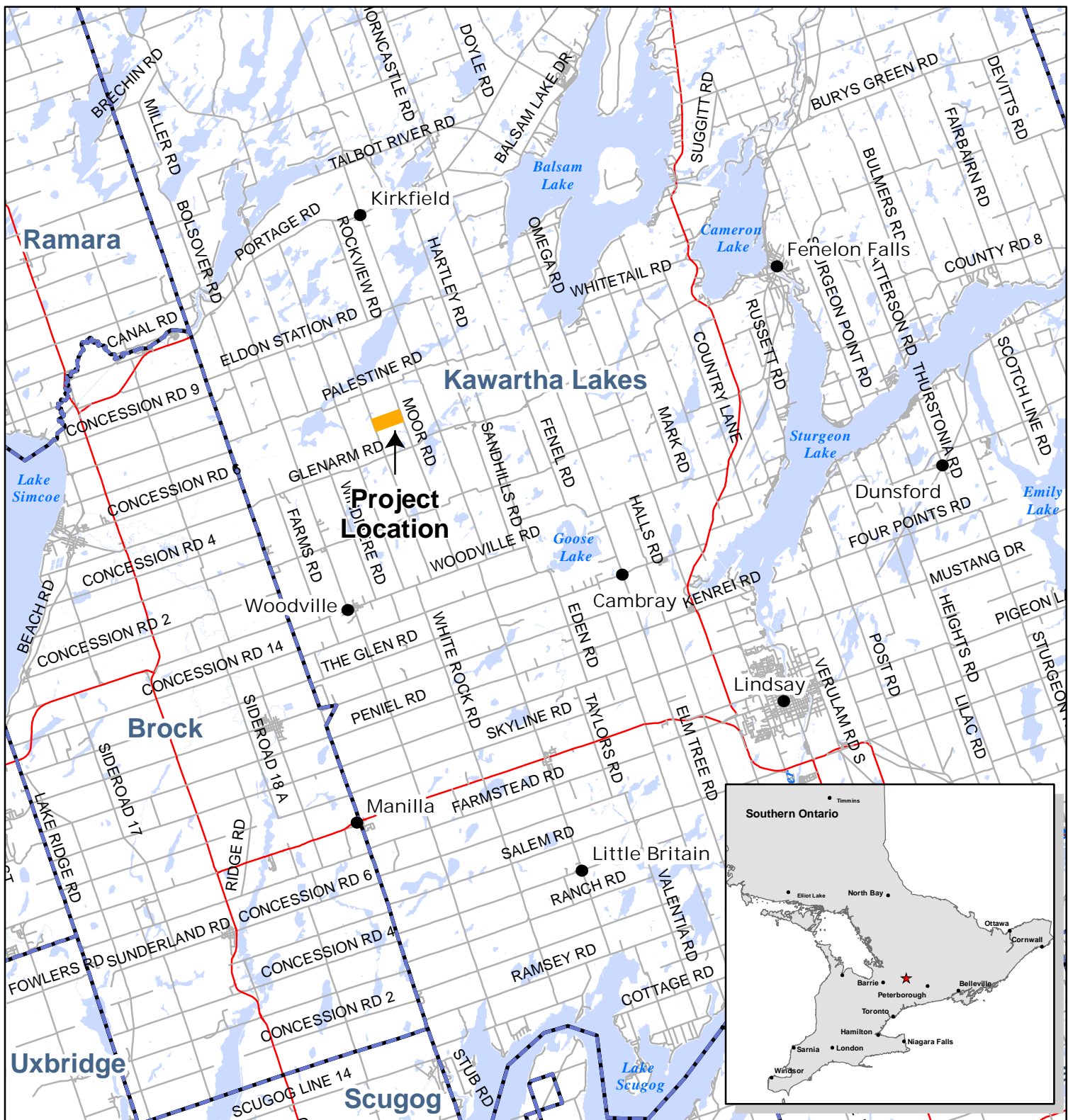
Appendix A: Official Plan Mapping
Appendix B: GIS Data Layer Information
Appendix C: Site Investigator CVs
Appendix D: Consultation Record
Appendix E: Field Notes and Photographs

1. Introduction

Invenergy Solar Canada ULC (Invenergy Canada) proposes to develop a solar farm with a maximum name plate capacity of 10 MW (AC), located near the communities of Argyle and Glenarm in the City of Kawartha Lakes (**Figure 1**). The total capacity will be 15 MWp (DC). The renewable energy facility will be known as the Sandringham Solar Farm and will be rated as a Class 3 Solar Facility.

Invenergy Solar Canada ULC has received a contract from the Ontario Power Authority (OPA) for the purchase of electricity generated by photovoltaic solar panels from this solar farm through the Province's Feed-in-Tariff (FIT) program (enabled by the Green Energy and Green Economy Act). The project will require approval under Section 29 of Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Section V.0.1 of the *Ontario Environmental Protection Act*.

Ontario Regulation 359/09 requires that all renewable energy projects conduct a site investigation for all water bodies that fall within the project location or the prescribed setback area (REA Section 31). This report was completed to address the regulatory requirements for the REA process and is the second report in a series that fulfills the requirements of the water body assessment. The reports will be submitted to the Ontario Ministry of the Environment (MOE) for review and comment as required in Ontario Regulation 359/09.



Invenergy Canada

Figure 1: Sandringham Solar Farm, Context Map

Legend

- Roads
- Highway
- Project Location
- Water Body
- Municipal Boundaries



1:250,000
0 3,000 6,000 9,000 m



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Created For: JG
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Date Modified: 12/16/2010
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Energy Centre (Woodville)\Mapping\Records
Review - Sandringham\Figure 1 General Site Location.mxd

2. The Proponent

Invenergy Canada is an experienced developer, owner and operator of power generation and energy delivery assets. Company activities include developing, building, owning and operating renewable energy facilities. In the course of developing renewable energy projects, Invenergy Canada satisfies various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Invenergy Canada builds long-term relationships with the communities that host its projects and is committed to the health and welfare of the communities of Argyle and Glenora and the City of Kawartha Lakes.

Contact information for Invenergy Canada is as follows:

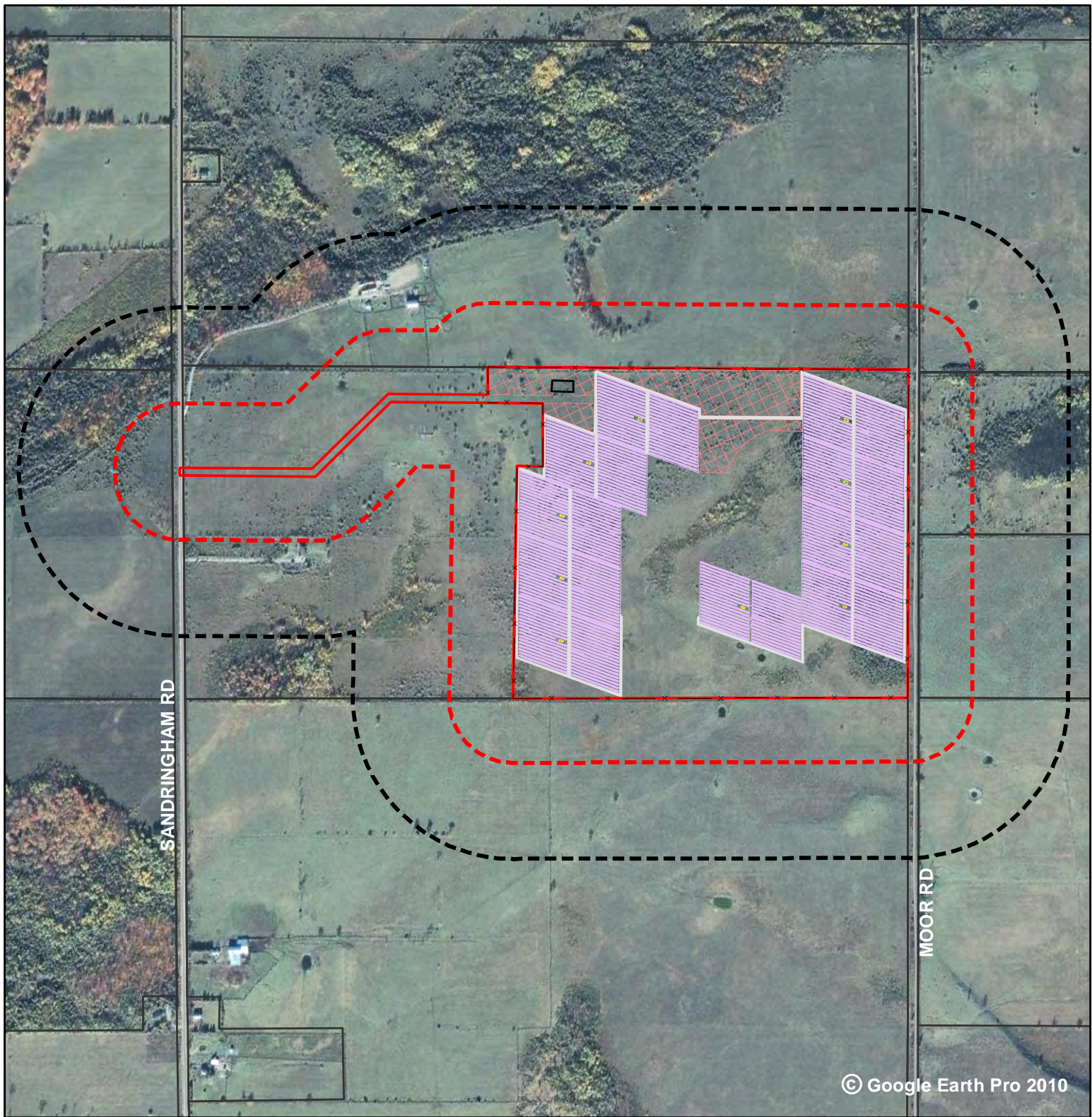
Full Name of Company:	<i>Invenergy Solar Canada ULC</i>
Address:	<i>12 King Street West, Bolton, Ontario, L7E 1C7</i>
Telephone:	<i>(905) 857-6936</i>
Fax:	<i>(905) 857-8948</i>
Prime Contact:	<i>Ryan Ralph, Development Manager</i>
Email:	<i>RRalph@invenergyllc.com</i>

Dillon Consulting Limited is the prime contractor for the preparation of this *Site Investigation Report*. The Dillon contact is:

Full Name of Company:	<i>Dillon Consulting Limited</i>
Address:	<i>235 Yorkland Boulevard, Suite 800</i> <i>Toronto, Ontario, M2J 4Y8</i>
Telephone:	<i>Office: (416)-229-4646 ext 2355</i>
Prime Contact:	<i>Don McKinnon, REA Project Manager</i>
Email:	<i>DPMckinnon@dillon.ca</i>

3. Project Location

The proposed Class 3 solar facility is located at 764 Sandringham Road near the communities of Argyle and Glenarm, in the City of Kawartha Lakes. **Figure 1** shows the general location of the project. The solar resource quality in this region is very good and the site was selected by considering daily average solar radiation, ease of access to the local electrical system and environmental considerations. **Figure 2** shows the project location, as defined in Ontario Regulation 359/09, to the location encompassing all project components and includes a 120 m setback for adjacent natural features (see the project *REA Natural Heritage Assessment Reports* for more information) and water bodies. All project components, including solar modules and electrical facilities such as inverters, transformers, substations and electrical lines, will be located on private land or municipal rights-of-way. **Figure 3** displays the results of the determinations made during the water assessment records review. The planned solar panel installation will occur primarily within lands currently designated as prime agriculture, unevaluated wetlands and environmental protection (City of Kawartha Lakes 2010; see **Appendix A**).



Invenergy Canada

Figure 2: Project Location

Legend

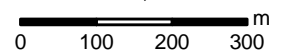
- Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Parcels

Project Components

- Solar Panel Layout
- Access/Gravel Roads
- Substation
- Inverters
- Construction Laydown Area
- Project Security Fence



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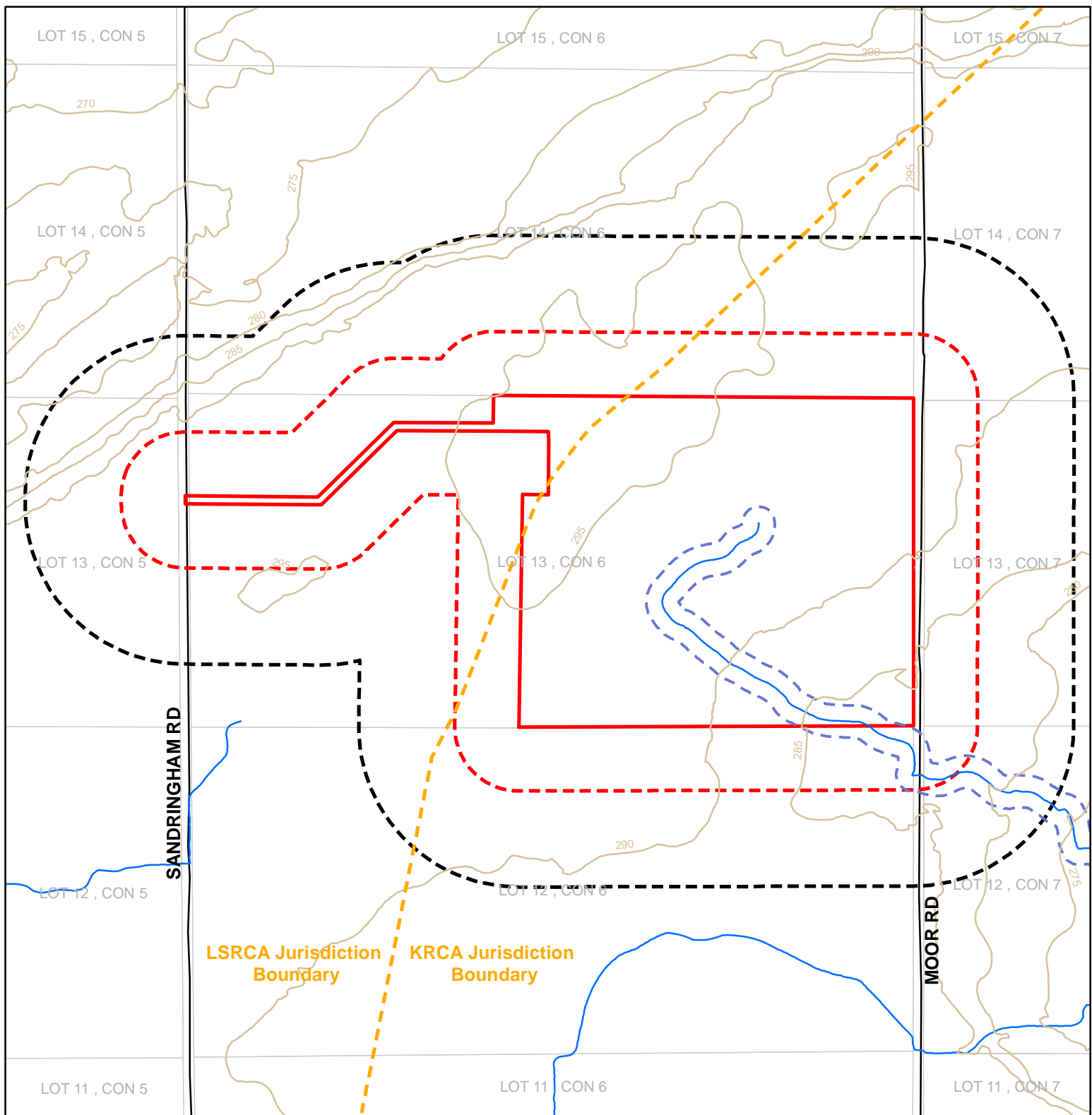
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Solar Energy Centre (Woodville)\Mapping\

Records Review - Sandringham\Figure 2

Project Location.mxd



Invenenergy Canada

Figure 3: Sandringham Solar Farm, Water Assessment Records Review Map

Legend

- Watercourse
- 5 m Contours
- Roads
- - - Conservation Authority Jurisdiction Boundary
- Project Location
- - - 120 m Project Location Setback
- - - 300m Project Location Setback
- - - KRCA Regulated Area
- Lots/Concessions



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Energy Centre (Woodville)\Mapping\
Records Review - Sandringham\Figure 3 Water Assessment Records Review.mxd

4. Summary of Records Review

As shown on **Figure 3**, a records review was completed according to Section 30 of Ontario Regulation 359/09. A summary of the determinations made is outlined in **Table 1**.

Table 1: Summary of Water Assessment Records Review

Water Body ID	Source of Information	Does the project location overlap a water body?	Is the project location within the prescribed setback for the water body?
Lakes			
NONE			
Lake Trout Lakes			
NONE			
Permanent and/or Intermittent Streams			
One in eastern portion of the project location	MNR LIO Mapping*	✓	✓
Seepage Areas			
NONE			
Provincial Plan Areas			
Northwestern portion of the project location falls within Lake Simcoe Protection Plan Area			
Regulated Areas			
Surrounding 30 m of land adjacent to mapped watercourse			

* see **Appendix B** for data layers obtained

5. Site Investigation Purpose

This site investigation report was completed to analyze the accuracy of the determinations made in the records review. It is consistent with Section 31 of Ontario Regulation 359/09, which states that a person who proposes to engage in a renewable energy project shall ensure that a physical investigation of the land and water within 120 m of the project location is conducted for the purpose of determining:

- whether the results of the analysis summarized in the [Records Review] report are correct or require correction, and identifying any required corrections;
- whether any additional water bodies exist, other than those identified in the records review;
- the boundaries, located within 120 m of the project location, of any water body that was identified in the records review or the site investigation; and
- the distance from the project location to the boundaries of the water body.

Under Ontario Regulation 359/09, the definition of a water body includes all lakes, permanent and intermittent streams and seepage areas, 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) Temporary 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 site and outdoor confinement areas.

6. Site Investigation Methodology

Based on the determinations made during the Records Review, all water bodies that met the definition under Ontario Regulation 359/09 and were found within 120 m of the project location were the subject of multiple site investigations of the project location. The project location was visited by site investigators in order to document the water bodies within the project location. Documentation of applicable and accessible water bodies included a record of qualitative and quantitative observations including type of water body, average annual high water mark, habitat types, surrounding riparian composition and taking of representative photographs. Efforts were coordinated with the team of site investigators conducting the natural heritage assessment of the project location to locate any potential seepage areas not identified during the records review.

6.1 Average Annual High Water Mark Determination

Consultation was undertaken with the KRCA to determine the average annual high water mark for water bodies within the KRCA jurisdiction. For the purposes of this REA reporting, the average annual high water mark was taken to be the top of bank of any and all identified water bodies. No water bodies were mapped within LSRCA jurisdiction within 300 m of the project location.

6.2 Names and Qualifications of Site Investigators

The names and qualifications of all site investigators are outlined in **Table 2** below. Curriculum vitae's (CVs) for each site investigator has been included in **Appendix C**. The site investigators listed below have been involved with the Sandringham Solar Farm project since it began and are involved in numerous renewable energy projects that are seeking approval under Ontario Regulation 359/09.

Table 2: Names and Qualification of Site Investigators

Name	Degrees and Professional Designations	Years of Experience	Sandringham Solar Farm Project Role	Certifications
Jennifer Petruniak	-M.Sc. (Biology)	6.5	-Fisheries Assessment	-Class 2 Backpack Crew Leader Electrofishing

Name	Degrees and Professional Designations	Years of Experience	Sandringham Solar Farm Project Role	Certifications
			-Incidental Wildlife	-Ontario Benthos Biomonitoring Network Certification -LEED Accredited Professional
Richard Baxter	-B.Sc. (Resource Management – Fish and Wildlife) -Fish and Wildlife Technologists Diploma	4	-ELC -Botanical Surveys	- Ecological Land Classification for Southern Ontario

6.3 Site Investigation Dates, Time, Duration and Weather Conditions

As outlined in **Table 3**, site investigations were undertaken in May, June and July 2010 in the project location. The details of each site investigation, in accordance with REA Section 31, are provided in **Table 3** and should be read concurrently with **Table 2**.

Table 3: Site Investigation Dates, Times, Duration and Weather Conditions

Date	Survey Type	Site Investigator	Time	Duration (hours)	Weather Conditions	
					EC Weather Station*	Field Conditions
May 26, 2010	Water body Assessment	Jennifer Petruniak, M.Sc.	10:00-12:30	2.5	Air temp.– 30.7°C. Wind Direction 30° at 11 km/hr	Wind – 1 (Beaufort); 28°C; <10% cloud; no precipitation
June 21, 2010	Ecological Land Classification	Richard Baxter, B.Sc.	11:00 – 17:00	6	Air temp.– 23-25.7°C. Wind Direction ~30° at 4-11 km/hr	Wind 1 (Beaufort); 20°C; 50% cloud; no precipitation
July 27, 2010	Water body Assessment			1	Air temp. – 24.8°C.	No; 27°C; 10% cloud;

Date	Survey Type	Site Investigator	Time	Duration (hours)	Weather Conditions	
					EC Weather Station*	Field Conditions
	Confirmation with KRCA	Jennifer Petruniak, M.Sc.	10:00-11:00		Wind Data missing from EC records	no precipitation

*EC Weather Station information was obtained from Peterborough AWOS, Ontario

6.4 Access to Adjacent Lands

As outlined in Ontario Regulation 359/09, all lands within 120 meters of a project component must be assessed for water bodies. Often, this can prevent a dilemma for proponents when the 120 meters setback area falls outside of lands leased for the renewable facility. Due to the flat topography allowing for easy observation from Moor Road, site access the lands to the east of the project location was not necessary for this water body assessment.

7. Site Investigation Results

Based on the site investigation, the occurrence of water bodies within or within 120 m of the project location is documented below. In addition to assessing if the results of the records review were correct or required corrections and/or amendments, information relating to each water body, if any, within the project location and surrounding 120 m was collected. This information included the type of water body, plant and animal composition and the local ecosystem characteristics observed during of the land and water investigation. In consideration of potential Lake Trout lakes and to meet the requirements of the Construction Plan Report, water bodies within 300 m are also noted. The Construction Plan Report will be included as part of the REA Application.

7.1.1 Lakes

As outlined in **Table 1**, a search and analysis of the records and resources not identify any lakes in the project location or within the surrounding 300 meters. The results of the site investigation confirmed this determination for lands within 300 m of the project location.

Not identified in the records review were two small dugout farm ponds located in the southeastern portion of the project location. However, based on the results of the site investigation work, these small farm ponds do not meet the definition of a water body under Ontario Regulation 359/09 (i.e., they are artificial bodies of water intended for cattle). This determination was confirmed by the KRCA during a site meeting on July 27, 2010 to review the site conditions and documented in correspondence dated August 10, 2010 (Leah Breivik, Acting Resources Planner, KRCA; see **Appendix D**) and August 26, 2010 (Peter Waring, Manager of Planning and Regulations, KRCA; see **Appendix D**). Field notes and photographs are included in **Appendix E**. Although the dugout ponds will not be included in the Environmental Impact Study, standard mitigation measures related to working in proximity to water will be included in the Design and Operations Report and the Construction Plan Report.

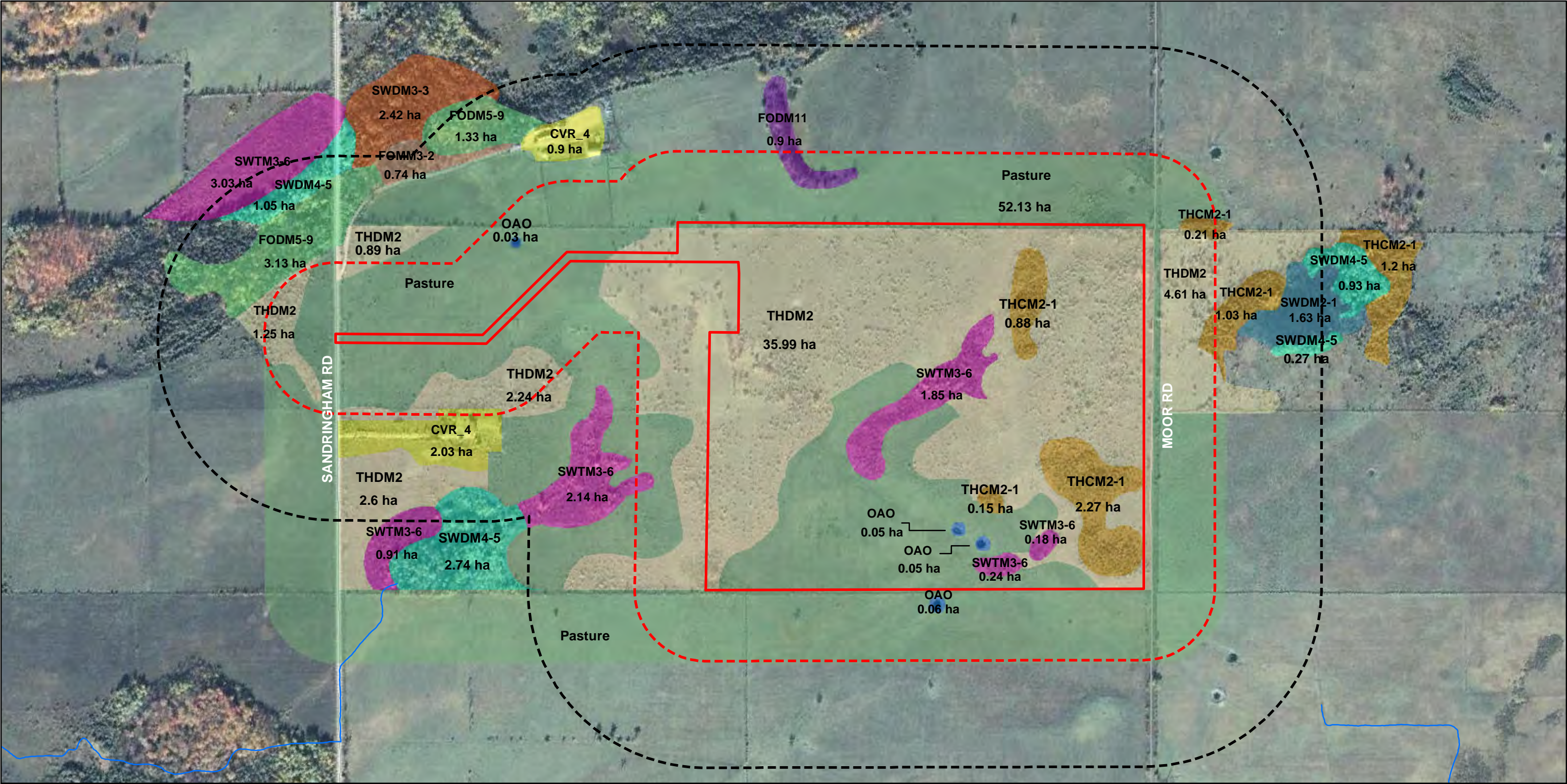
7.1.2 Lake Trout Lakes

As outlined in **Table 1**, a search and analysis of the records and resources not identify any lakes that had potential to support a managed population of Lake Trout in the project location or within the surrounding 300 meters. The results of the site investigation confirmed this determination for lands within 300 m of the project location.

7.1.3 Permanent and/or Intermittent Streams

The watercourse mapped by the MNR in the eastern half of the project location was not located during the site investigation. The area upstream and downstream of the two small dug farm ponds (see **Section 7.1.1**) was searched for the presence of features representative of a channel. Headwater drainage features, including swales, can be ill-defined; channel form is the result of water flow, vegetation and longitudinal grade (CVC/TRCA 2009). No features were identified that would contribute to the formation or identification of a channel in the project location, including no channel definition, no flow, no groundwater seepage or wetland functions, and a lack of vegetation associated with aquatic environments. This observation includes the lands located within the project location and within the adjacent lands 300 m to the southeast where the stream was mapped to flow under Moor Road.

While ELC results did identify a Mixed Willow Mineral Deciduous Thicket Swamp where the watercourse is mapped to originate (**Figure 4**), it was determined that this community is limited to a small number of wet depressions that are likely the result of low topography and poor drainage. Due to the lack of features and/or functions associated with headwater drainage, the watercourse mapped in the project is classified as *not fish habitat* (CVC/TRCA 2009; see KRCA correspondence from Peter Waring, Manager of Planning and Regulations, in **Appendix D**). Further, this watercourse does not meet the definition of a “water body” as defined by Ontario Regulation 359/09. Based on all site investigations of the project location, the KRCA has de-regulated the mapped “stream” (Leah Breivik, Acting Resources Planner, KRCA, letter correspondence August 10, 2010; see **Appendix D**). This determination was made for the stream within the project location and on the adjacent lands 300 m from the project location. Although a small diameter culvert was located at Moor Road, no channel was found in association with the culvert (see **Appendix E**).



Invenergy Canada

Figure 4: Sandringham Solar Farm, Water Assessment Ecological Land Classification

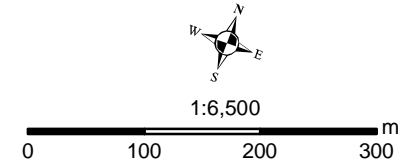
Legend

- Roads
- Watercourse
- Project Location
- 120m Project Location Setback
- 300m Project Location Setback

Ecological Land Classification

- CVR_4: Rural Property
- SWDM4-5: Poplar Mineral Deciduous Swamp Type
- SWTM3-6: Mixed Willow Mineral Deciduous Swamp Thicket
- THCM2-1: Fresh-Moist White Cedar Coniferous Thicket
- THDM2: Dry Fresh Deciduous Shrub Thicket
- Pasture
- FODM5-9: Dry-Fresh Sugar Maple Hardwood Deciduous Forest

- FODM3-2: Dry-Fresh Sugar Maple Hemlock Mixed Forest
- FODM11: Naturalized Deciduous Hedgerow
- SWDM2-1: Black Ash Mineral Deciduous Swamp
- SWDM3-3: Swamp Maple Mineral Deciduous Swamp
- OAO: Open Water

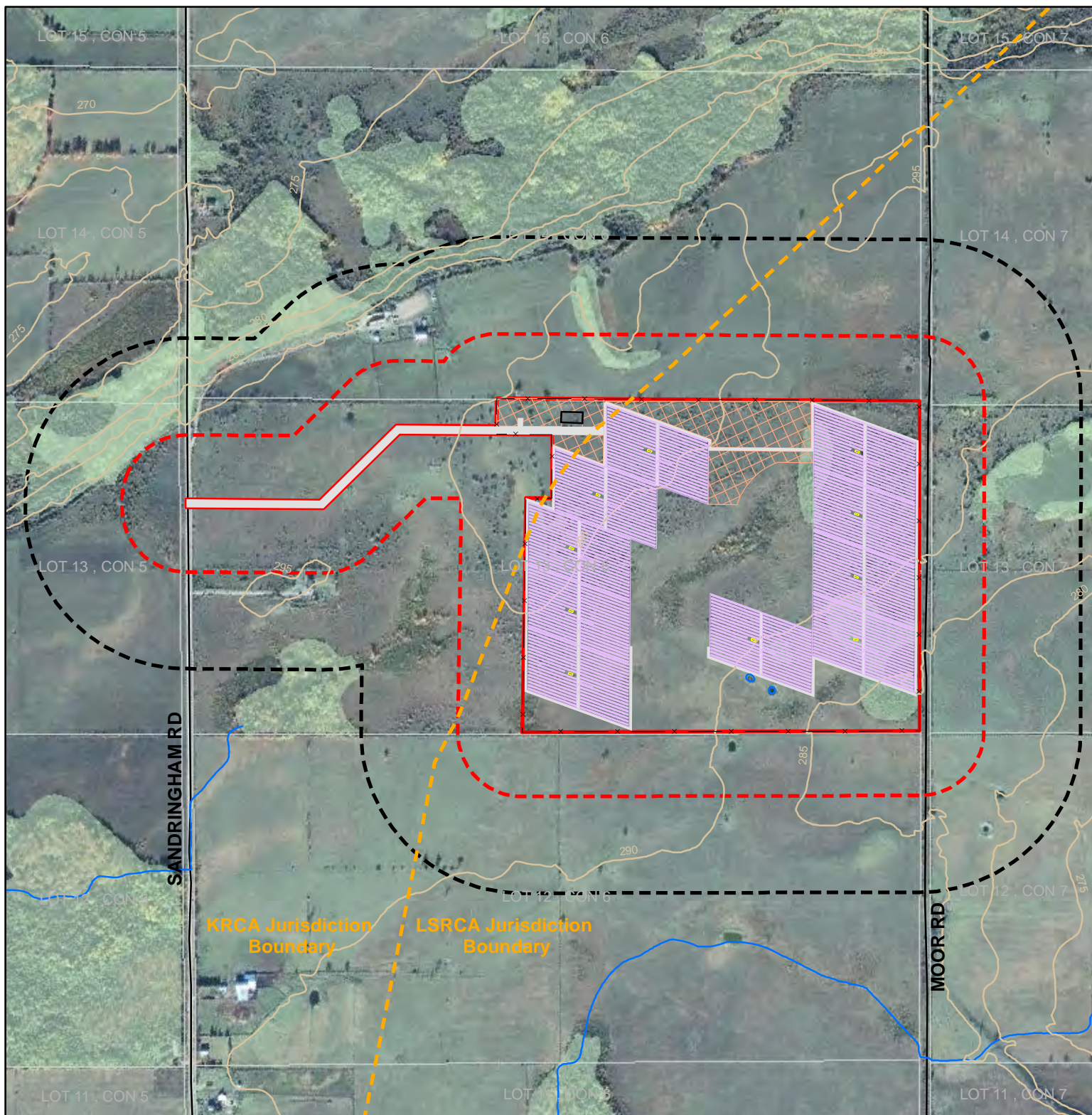


7.1.4 Seepage Areas

As indicated in **Table 1**, a search and analysis of all applicable records and resources of the project location did not identify any seepage areas, as defined by Ontario Regulation 359/09, in the project location or within the surrounding 300 meters. The results of this and the natural heritage assessment site investigation verified this determination.

8. Summary of Amendments to the Records Review

Based on the results of the site investigations, no previously unidentified water bodies were identified within 120 m of the project location. Results of the site investigation of the stream mapped within the project location determined that the mapped feature does not meet the definition of a water body under Ontario Regulation 359/09 (i.e., is not a permanent or intermittent stream); it has been removed from the mapping as a water body feature (see **Figure 5**).



Invenergy Canada

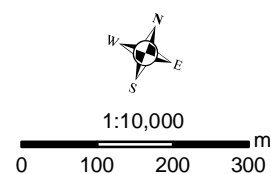
Figure 5: Sandringham Solar Farm, Water Assessment Site Investigation Map

Legend

- Watercourse
- 5 m Contours
- Roads
- Conservation Jurisdiction Boundary
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Woodlands
- Dugout Ponds
- Lots/Concessions

Project Components

- Solar Panel Layout
- Access/Gravel Roads
- Substation
- Inverters
- Construction Laydown Area
- x — x Project Security Fence



Created By: KR
Created For: JG
Date Created: 06/10/2010
Date Modified: 03/7/2011
File Path: I:\GIS\103523 - Simcoe
Solar Energy Centre (Woodville)\
pping\Records Review - Sandringham\
Figure 5 Site Investigation Map.mxd

9. Provincial Plan Areas

As indicated in **Table 1** and **Figure 3**, the northwestern portion of the project location falls within the LSRCA jurisdiction and is at the outer limit of the Lake Simcoe Protection Plan Area. However, no water bodies were mapped within 300 m of the project location within this Plan Area (see **Figure 5**). The Sandringham Solar Farm project does not require alteration of the shore of Lake Simcoe, the shore of a fresh water estuary or a stream connected to Lake Simcoe or other lakes or any permanent or intermittent stream. Therefore, this project is in compliance with the policies and objectives outlined in the Lake Simcoe Protection Plan.

10. Additional Approval and Permit Requirements

Based on a site meeting at the project location and consultation with the KRCA, no portion of the project location falls within lands or water regulated under Ontario Regulation 182/06 (the KRCA's *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*). In addition, no portion of the project location falls within lands or water regulated under Ontario Regulation 179/06 (the LSRCA's *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*). Therefore, no additional permitting or approvals are required with respect to water bodies (see **Appendix D**).

11. Conclusions

This report is intended to fulfill the requirements for the water assessment site investigation report under Ontario Regulation 359/09. Based on the results of the site investigations, this report confirms no water bodies are present within the project location or within 120 m.

This site investigation report is the second report in a series that will fulfill the water body assessment component of the REA process under Section 29 of Ontario Regulation 359/09. Based on the results of the site investigation, no water bodies that meet the definition under Ontario Regulation 359/09 were identified within the project location or on lands within 300 m (see **Figure 5**). As such, an Environmental Impact Study for water bodies is not required for the Sandringham Solar Farm project. Standard mitigation measures related to working in proximity to water will be included in the Design and Operations Report and the Construction Plan Report to address any groundwater or headwater drainage functions in the project location.

Table 4 summarizes the results of this site investigation in the context of the proposed project. No applicable water bodies were identified within the project location or surrounding 300 m, as outlined on **Figure 5**.

Table 4: Summary of the Water Assessment Site Investigation

Water Body ID	Does the project location overlap a water body?	Is the project location within 120 m of the water body?	Distance to nearest project components	Project Components within 120 m of the water body	EIS Required?
Lakes					
NONE					
Lake Trout Lakes					
NONE					
Permanent and/or Intermittent Streams					
Stream	Does not meet the definition of a water body under Ontario Regulation 359/09				<input checked="" type="checkbox"/>
Seepage Areas					
NONE					

Water Body ID	Does the project location overlap a water body?	Is the project location within 120 m of the water body?	Distance to nearest project components	Project Components within 120 m of the water body	EIS Required?
Provincial Plan Areas					
No water bodies were identified within the Lake Simcoe Protection Plan Area					

12. References

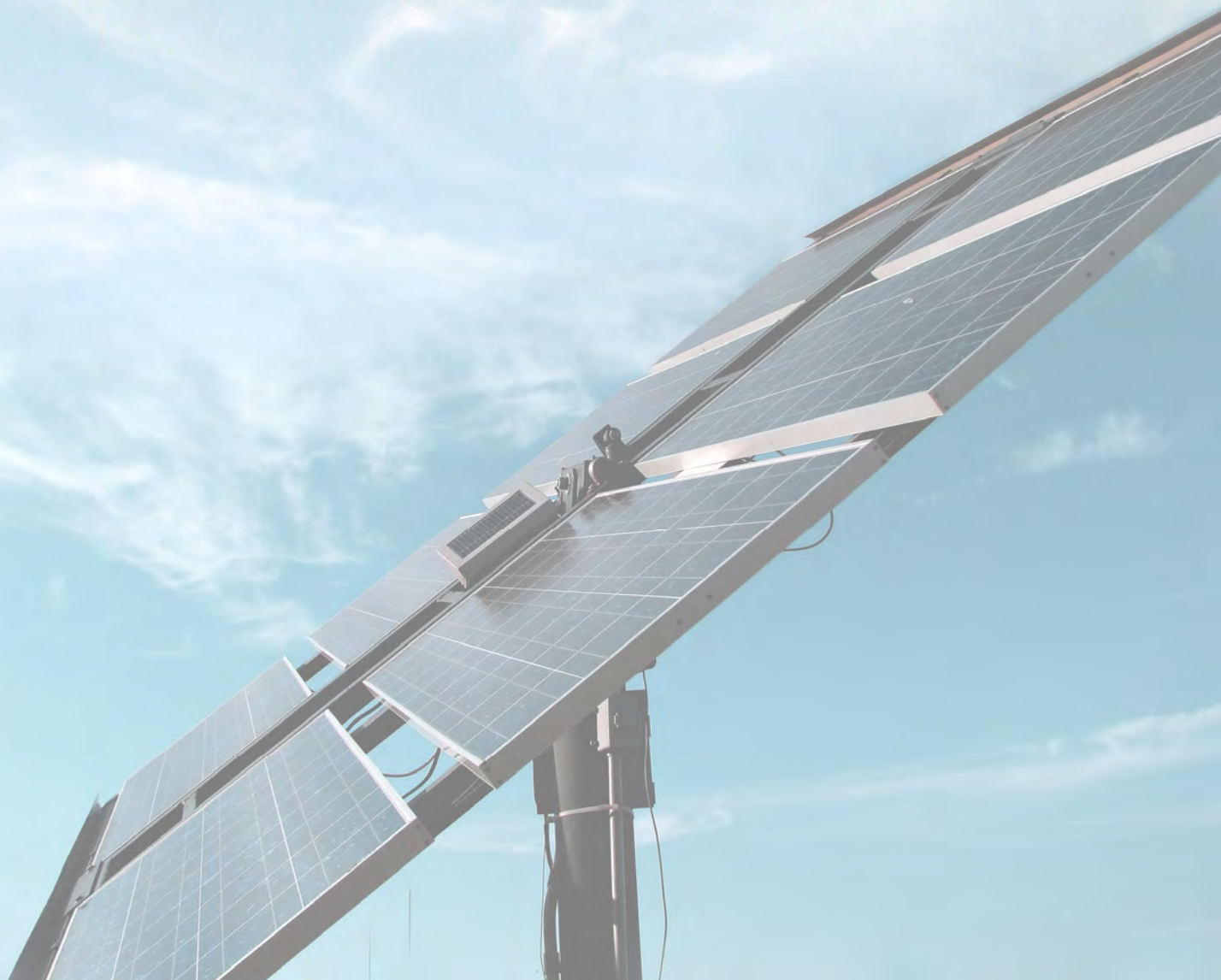
City of Kawartha Lakes Draft Official Plan. 2010. 174 pp. + Schedules A-4 and B-4.

Credit Valley Conservation and Toronto and Region Conservation. 2009. Evaluation, Classification and Management of Headwater Drainage Features: Interim Guidelines. 22pp.

Ontario Ministry of Natural Resources. Land Information Ontario.
<http://www.mnr.gov.on.ca/en/Business/LIO/index.html>. Last accessed February 2011.

APPENDIX A

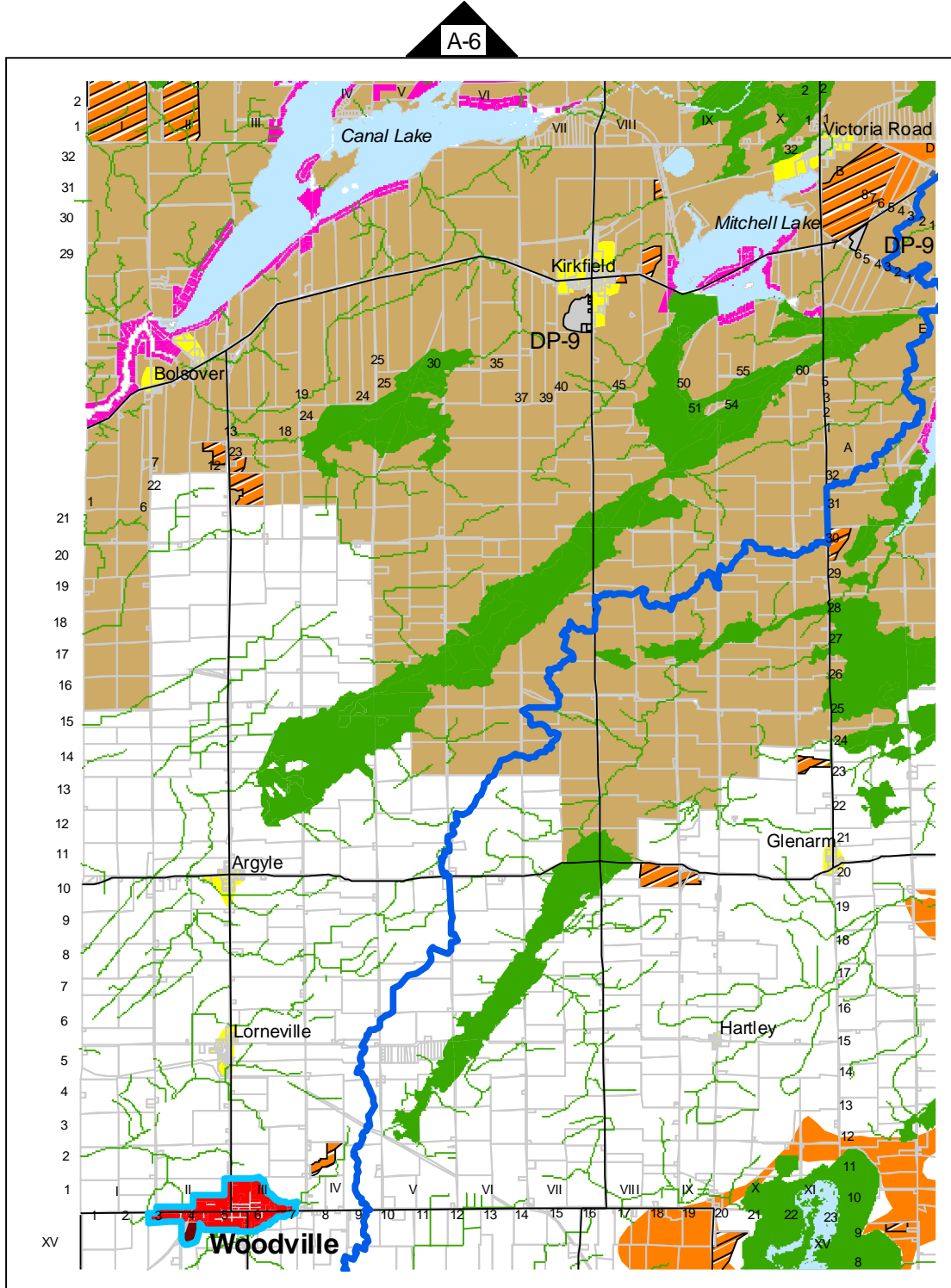
Official Plan Mapping



City of Kawartha Lakes Official Plan

Schedule A-4

(Geographic Township of Eldon)



Land Use Designations

Prime Agricultural	Aggregate
Rural	Resource Reserve
Environmental Protection	Development Plan Area
Urban Settlement Area	Urban Settlement Area
Hamlet Settlement Area	Lake Simcoe Source Water Protection Boundary
Waterfront	
Highway Commercial	
Industrial	

0 0.5 1 2 3 4 5
Kilometers



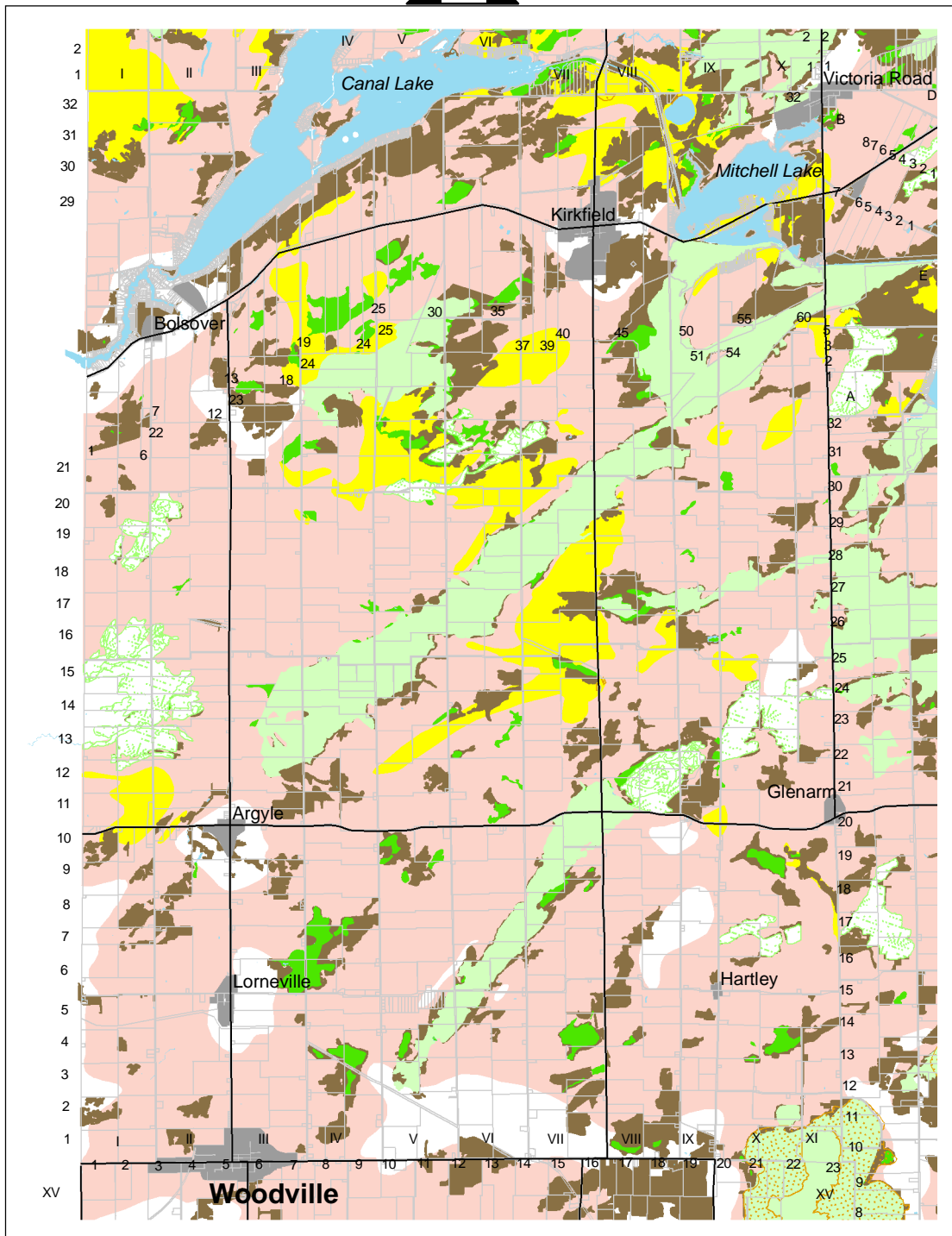
City of
KAWARTHA LAKES
Cité de Kawartha Lakes

City of Kawartha Lakes Official Plan

Schedule B-4







(Geographic Township of Eldon)

B-6





B-5

Natural Heritage Features

-  ANSI
-  Locally Significant Wetlands
-  Provincially Significant Wetlands
-  Unevaluated Wetlands
-  Waterbodies
-  Wooded Area

Bedrock Overburden

-  less than 1m
-  1 to 8m



City of
KAWARTHA LAKES
Catch the Kawartha spirit

B-2

APPENDIX B

GIS Data Layer Information

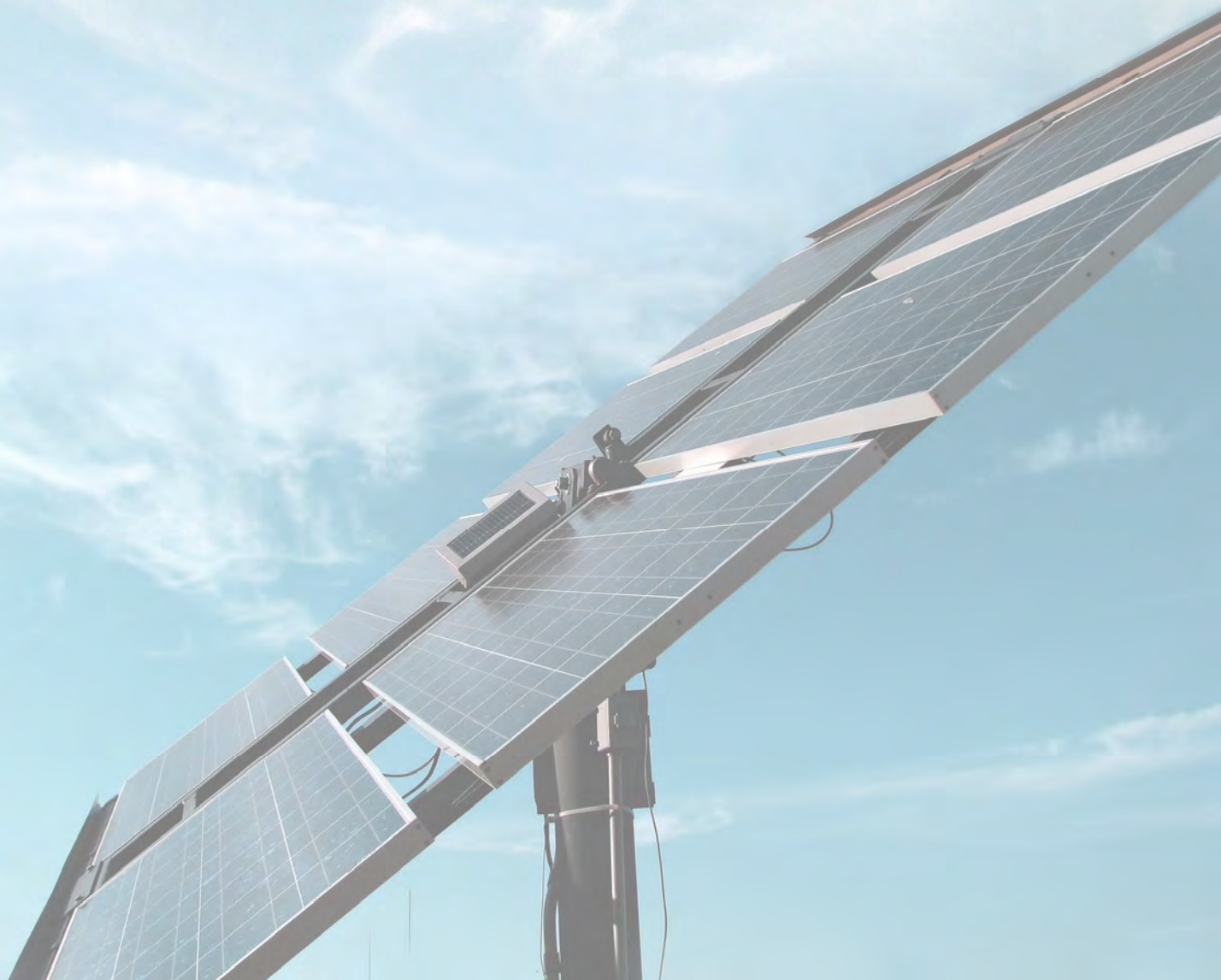
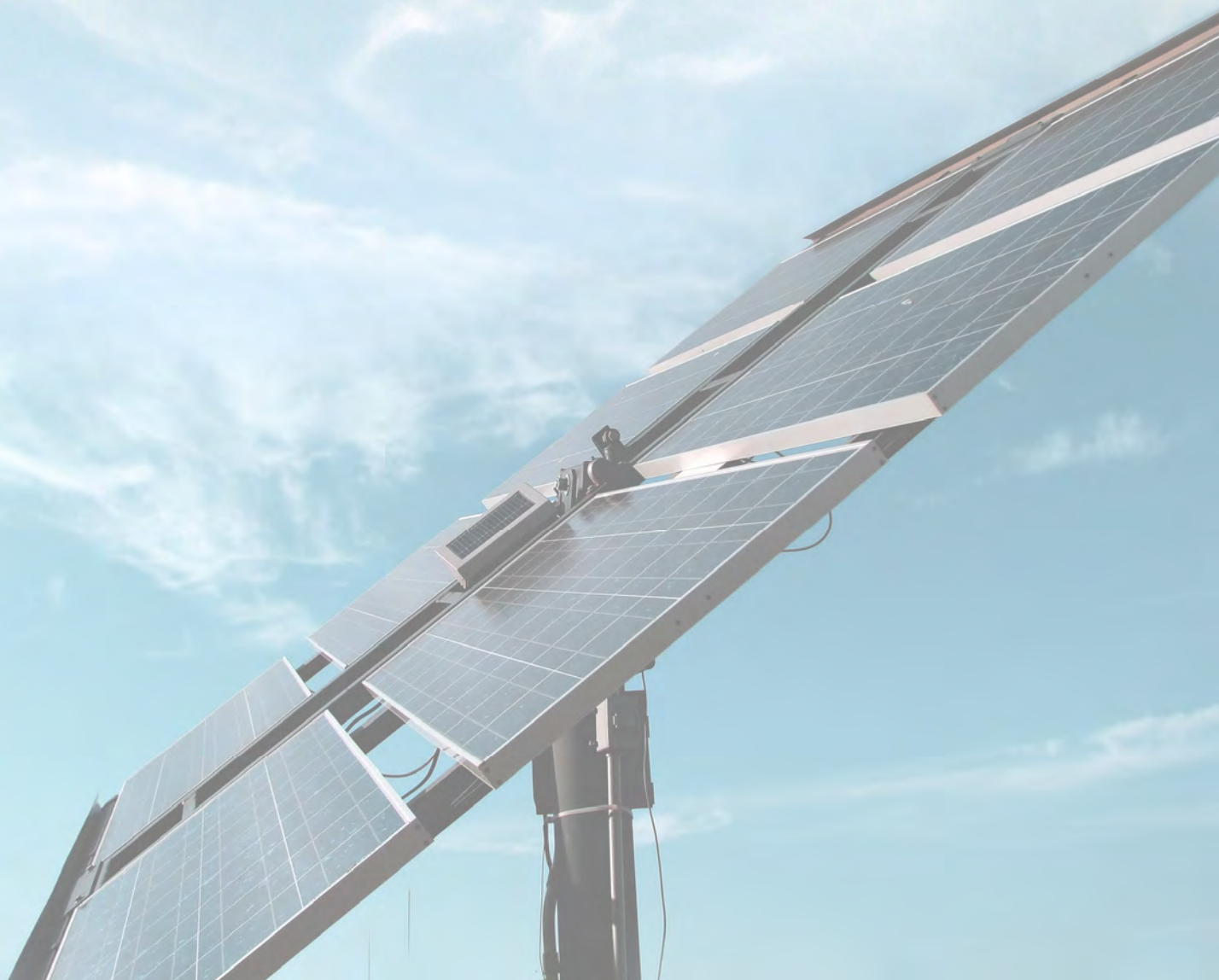


Table B1: GIS Data Layer Information

Title of Data Set	Vintage of Data or Date Info/Searched/Collected	Ownership of Information
Roads	Collected 2007	DMTI Spatial
5m Contours	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Watercourse	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Woodland	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Unevaluated Wetlands	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
Lots & Concessions	Collected 2010	Ministry of Natural Resources (Land Information Ontario)
KRCA Regulated Area and jurisdiction boundary	Collected 2010	Kawartha Region Conservation Authority
LSRCA jurisdiction boundary	Collected 2010	Lake Simcoe Region Conservation Authority

APPENDIX C

Site Investigator CVs



**RICHARD
BAXTER**

BIOLOGIST

Education

Bachelor of Science in
Resource Management – Fish
and Wildlife Major, University
of Northern British Columbia,
2007

Fish and Wildlife
Technologists Diploma, Sir
Sandford Fleming College,
2001

Languages

English

PERSONAL PROFILE

Richard is a biologist with experience in ecological risk assessment, environmental effects monitoring and biological sampling/surveying in both terrestrial and aquatic environments. As an experienced naturalist, Richard brings a broad level of knowledge in several environmental disciplines to every project.

RELEVANT EXPERIENCE

ENVIRONMENTAL ASSESSMENT: LINEAR INFRASTRUCTURE

Ministry of Transportation, Ontario

Conducted background reviews and natural environment fieldwork reporting for highway improvements along a section of Highway 7/8 in Kitchener, Ontario.

Ministry of Transportation, Ontario

Conducted background reviews and natural environment fieldwork reporting for a bridge replacement project in Dorchester, Ontario.

Ministry of Transportation, Ontario

Conducted background reviews and field surveys to determine the potential for breeding bird and Species at Risk habitat, as well as rare vegetation, located along a section of Highway 7 in Rockwood, Ontario.

Ministry of Transportation, Ontario

Conducted background reviews and field surveys to determine the potential for breeding bird and Species at Risk habitat, as well as rare vegetation, located along a section of Highway 21 in Lambton Shores, Ontario.

Ontario Hydro One

Conducted background reviews relating to terrestrial natural heritage features for a proposed transmission station installation near Tremaine Road, Oakville, Ontario.

Regional Municipality of Halton

Conducted background reviews and field surveys to assess breeding bird community, amphibian community and the ecological composition of vegetation communities located along the proposed Halton-Boyne trunk sewer line route.

Regional Municipality of Niagara

Conducted background reviews and field surveys to assess breeding bird community, amphibian community and the ecological composition of vegetation communities located along a proposed sewer line route between Wainfleet and Port Colborne, Ontario.

City of Ottawa, Ontario

Conducted background reviews and field surveys to assess breeding bird community and the ecological composition of vegetation communities located along the approved route of the Terry Fox Drive Extension during the Detailed Design Phase.

City of Hamilton, Ontario

Conducted background reviews and field surveys to determine the potential for breeding bird habitat and the ecological composition of vegetation communities located along a proposed route for a light rail transit system along the Main and King Street corridors in downtown Hamilton, Ontario.

**RICHARD
BAXTER**

BIOLOGIST

Ministry of Transportation, Ontario

Conducted background reviews and field surveys to determine the potential for breeding bird habitat located at intersections scheduled for improvement, along a section of Highway 6 in Guelph, Ontario.

Plutonic Power, Peter Kiewit and Sons

Conducted nest searches during clearing operations for a power line right-of-way near Powell River and the Toba Inlet in British Columbia.

Cities of Hamilton and Burlington, and Regional Municipality of Halton, Ontario

Completed breeding bird surveys for the Waterdown Road municipal class environmental assessment road expansion project.

ENVIRONMENTAL ASSESSMENT: WIND ENERGY

Melancthon Wind Farm - 401 Energy; McLean's Mountain Wind Farm - Northland Power; Dover Wind Farm - Invenergy Canada; and Greenwich Lake Wind Farm - RES Canada

Completed natural environment related Renewable Energy Approvals documentation for several Ontario wind farm projects

Raleigh Wind Farm Project, Invenergy

Developed post-construction monitoring plans for identified potentially sensitive bird and bat resources located on Lake Erie's north shore west of Rondeau Provincial Park.

McLean's Mountain Wind Farm Project, Northland Power

Conducted botanical surveys as part of the Federal Environmental Assessment approvals process for a proposed wind farm.

McLean's Mountain Wind Farm Project, Northland Power

Conducted breeding bird surveys and habitat assessments at one site as part of a wind power pre-feasibility study. This study identified groups of birds and their habitat that may require further study as part of the Federal Environmental Assessment approvals process for a proposed wind farm.

Positive Power, Windy Hills

Compiled secondary source background data for natural environment reports for two proposed wind farm sites in different regions of southwestern Ontario. These reports summarized the potential natural heritage resources for the study area in preparation for the Federal Environmental Assessment approvals process for a proposed wind farm.

401 Energy, Positive Power, Windy Hills

Conducted fall migration bird surveys to assess the impact of wind turbine infrastructure on the local environment and avian populations. This study was undertaken to identify groups of birds that may require further study as part of the Federal Environmental Assessment approvals process for three proposed wind farms.

401 Energy, Positive Power

Conducted breeding bird surveys and habitat assessments at two sites as part of a wind power pre-feasibility study. This study identified groups of birds and their habitat that may require further study as part of the Federal Environmental Assessment approvals process for a proposed wind farm.

**RICHARD
BAXTER**

BIOLOGIST

ENVIRONMENTAL ASSESSMENT: SOLAR ENERGY

Invenergy Canada

Conducted breeding bird and vegetation studies for solar power developments near Woodville, Ontario.

EDF EN Canada

Conducted site investigations and a natural heritage background evaluation for a solar power development near Smiths Falls, Ontario.

EDF EN Canada

Conducted natural heritage background evaluations for solar power developments near Smiths Falls and St. Isidore, Ontario.

ENVIRONMENTAL MONITORING – DEVELOPMENT PROJECTS

Cedarvale Well Field, Town of Halton Hills, Ontario

Conducted vernal pool surveys to assess potential amphibian breeding habitat conditions in a well field south of Georgetown, Ontario.

Beaver Creek Stormwater Management Project

Conducted environmental monitoring and assessed site conditions in compliance with the *Federal Fisheries Act*. Monitored water turbidity conditions.

TERRESTRIAL ENVIRONMENTAL PLANNING: DEVELOPMENT PROJECTS

City of London, Ontario

As part of the Thames Valley Corridor Plan, ELC work was conducted on several patches of city-owned land within the City of London. This information will be used for future planning activities by the City.

St. George Industrial Park; Gormley; Holland Landing; Mayfield West and Mademont Investments in southern Ontario

Conducted breeding bird surveys at these development project sites.

TERRESTRIAL AND AQUATIC BACKGROUND: HYDRO-POWER PROJECTS

Yunnan Huaneng Lancang River Hydropower Co., LTD

Conducted background environmental research on natural heritage features of the area and the possible impacts on these features relating to planned development of hydro power projects on the Mekong River in southeast Asia.

EMPLOYMENT HISTORY

Dillon Consulting Limited

2007-Present Biologist

Bird Studies Canada

2006 Migration Monitor / Banding Assistant

University of Alberta

2006 Research Assistant, cavity nester study

**RICHARD
BAXTER**

BIOLOGIST

2006

Royal British Columbia Museum

Botany Collections Assistant

2005

British Columbia Conservation Foundation

River Guardian on the Dean River, British Columbia

2004

Ducks Unlimited Canada

Biological Technician

2001

Grand River Conservation Authority

Field Technician

PROFESSIONAL DEVELOPMENT

MNR Wind Energy and Bats Seminar, 2010.

ATV Safety Training, 2001.

Bear and Shotgun Safety Training, 2001.

Electrofishing Certification, Back Pack Unit, MNR, 2001.

CERTIFICATIONS

Ontario MNR-sponsored Ecological Land Classification certification

ATV Safety Training

Pleasure Craft Operator Safety Training

Bear Safety Training

WHMIS

First Aid/CPR

JULY 2010

(31)

JENNIFER PETRUNIAK

BIOLOGIST

Education

M.Sc. Biology, York
University, 2009

B.Sc. Honours Biology,
University of Waterloo,
2002

Affiliations

Society of Canadian
Limnologists

American Fisheries Society,
Ontario Chapter

Canadian Aquatic Invasive
Species Network

LEED AP

Language

English

PERSONAL PROFILE

Jennifer is a biologist with experience working on projects with interdisciplinary objectives. She has broad knowledge in the field of ecology along with extensive field experience. For 10 years Jennifer has been conducting research in aquatic environments and has developed specialized knowledge on a range of aquatic organisms.

RELEVANT EXPERIENCE

SPECIES AT RISK

Created Species at Risk identification cards for use during sampling and by contractors during construction as part of an awareness campaign to protect species at risk and comply with legislation (City of Ottawa)

Consultation with various regulatory agencies to obtain the necessary permits and develop protocol (where necessary) managing the potential for species at risk to occur on project sites. Species groups include mussels, fish, plants, reptiles, amphibians and birds. (County of Middlesex, Coco Paving, Facca Incorporated)

Provided due diligence for on-site contractors by developing protocol of necessary actions required should a Species at Risk be encountered during construction (Town of Kingsville)

RENEWABLE ENERGY

Conducted baseline fisheries habitat assessments and background review studies as part of the *Renewable Energy Act* reporting required for the development of wind and solar farms (Renewable Energy Systems; Northland Power; Invenenergy; 401 Limited; Youil PV Tecumseh)

Developed bird and bat post-construction monitoring protocols for various wind farms in Ontario (Renewable Energy Systems; Northland Power)

Generated various reports in support of wind farm developments, including natural environment, Species at Risk, birds and fisheries

Field surveys in support of Phase I Environmental Site Assessments for various wind farm developments in Ontario (Renewable Energy Systems; Invenenergy)

NATURAL ENVIRONMENT AND FISHERIES ASSESSMENTS

Provided background review and site survey reports for the construction of culverts, bridges and roads on fisheries and fisheries habitat, including impacts and mitigation (Town of LaSalle, City of London, County of Middlesex)

Assessed the impacts of the expansion of a wastewater plant on the nearby watercourse as part of a class EA submission (Niagara Region)

Evaluated the impact of a water pump facility expansion on the adjacent Hamilton Escarpment as a supplemental report to the class EA (City of Hamilton)

ENVIRONMENTAL IMPACT ASSESSMENTS

Redevelopment of a marina property in the City of LaSalle, Ontario with an adjacent provincially significant wetland, Species at Risk and fisheries impacts. This project required consultation with the Conservation Authority, the MNR and DFO. Working

**JENNIFER
PETRUNIAK**

BIOLOGIST

with these agencies, and agreed upon terms of reference for the EIA was determined and any potential environmental impacts were addressed through effective restoration and compensation design (Facca Incorporated)

INVENTORIES AND SCIENTIFIC STUDIES

Stream survey to identify areas of possible future instability, including a photographic record and point assessments of the watercourse traversing a commercial development, upstream and downstream of a bridge construction location (Urbacon Development)

Tree survey for the development of a tree preservation plan and compensation planning prior to a new residential development (Heathwood Homes)

Led and managed a research study linking zooplankton behaviour to wind-induced hydrodynamic circulation in a small inland lake to predict spatial distribution and assess the potential risk of fluvial dispersal of an aquatic invasive species. This study involved intensive zooplankton sampling, detailed meteorological analysis, statistical techniques and 3-dimensional simulation computer modeling. Research was funded by the Canadian Aquatic Invasive Species Network

Developed methodology to quantify the behavioural response of the round goby to reproductive pheromones as a first step in controlling the population of this invasive fish in the Great Lakes. Research was funded as part of The Round Goby Pheromone Project

Initialized an international collaboration between the University of Western Australia and the Canadian Aquatic Invasive Species Network. This project involved operationalizing a 3D hydrodynamic model and developing a behavioural algorithm to simulate zooplankton diel vertical migration. This work led to further consulting with visiting scientists to Canada on high resolution plankton spatial dynamics research. Research was funded by the NSERC Strategic Network Enhancement Initiative for the Canadian Aquatic Invasive Species Network

Completed an extensive 311 lake watershed-scale survey to form a baseline record of the spread of an aquatic invasive species in inland lakes. This project involved leading a field crew to sample lakes for zooplankton and water quality and working in remote areas to reach pre-selected lakes. This work was funded by the Canadian Aquatic Invasive Species Network and is used by scientists across Canada.

Conducted a basin-scale survey in Lake Erie of nearshore benthic invertebrates for a study that assessed how dreissenids could potentially re-direct the flow of nutrients in the Great Lakes. Work on this project included transect sampling using SCUBA and invertebrate identification. Research was funded by The Lake Erie Project

NATURAL HERITAGE PLANNING

Reviewed the core natural heritage system and redefined wildlife corridors within the municipal boundary of the City of Welland (City of Welland)

COMPENSATION AND RESTORATION PLANNING

Restoration planning for a stormwater management pond outfall that was loading excess sediment into a watercourse recorded as supporting a fish Species at Risk. Effective design, together with sound construction implementation and monitoring led to a successful remediation of the outfall and a significant reduction in water turbidity readings (Urbacon Developments)

**JENNIFER
PETRUNIAK**

BIOLOGIST

Designed Midland Turtle nesting habitat as a compensation measure for the development of a residential development within the buffer of a provincially significant wetland (Norquay Developments)

EMPLOYMENT HISTORY

Dillon Consulting Limited

2009-Present Biologist

York University

2006-2009 Graduate Researcher and Teaching Instructor

Seneca College

2008 Professor

Various Private Education Institutes

2003-2006 English as a Second Language Instructor

University of Windsor

2002 Researcher

University of Waterloo

2001-2002 Research Assistant

ACHIEVEMENTS AND AWARDS

York University Thesis Award, York University, 2009

Award of Distinction for M.Sc., York University, 2009

York University Entrance Scholarship, 2006

Dean's Honour List, University of Waterloo, 2002

PROFESSIONAL DEVELOPMENT

Class 2 Backpack Electrofishing Certification, 2010

Leadership in Energy and Environmental Design, 2009

North American *Bythotrephes* Scientific Workshop, Platform Presentation, 2009

Ontario Benthos Biomonitoring Network Certification, 2009

Canadian Aquatic Invasive Species Network AGM, Poster Presentation, 2009

American Society of Limnology and Oceanography, Platform Presentation, 2008

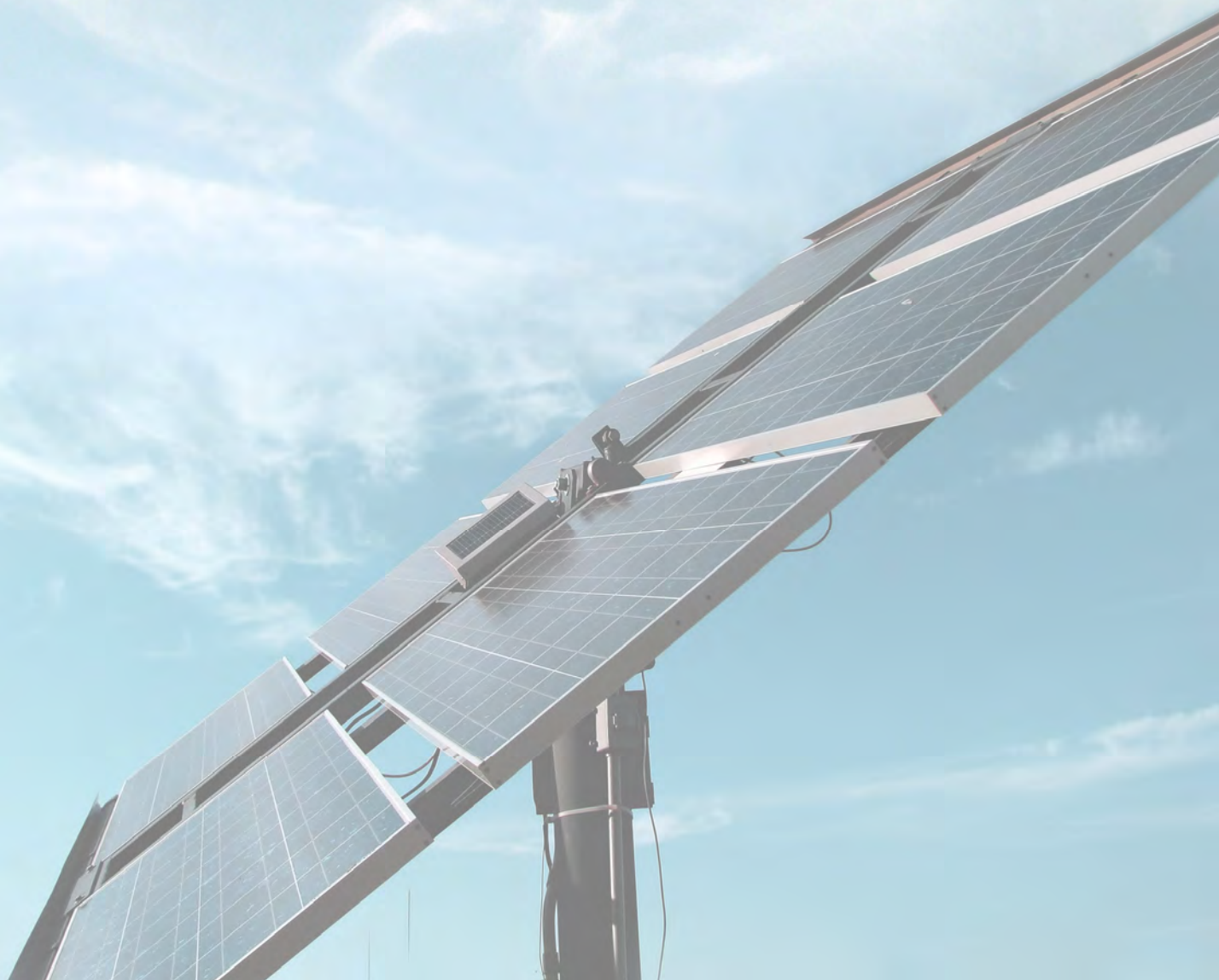
Canadian Aquatic Invasive Species Network AGM, Poster Presentation, 2008

Global Climate Change Symposium, Chair, York University, 2007

JULY 2010 (20)

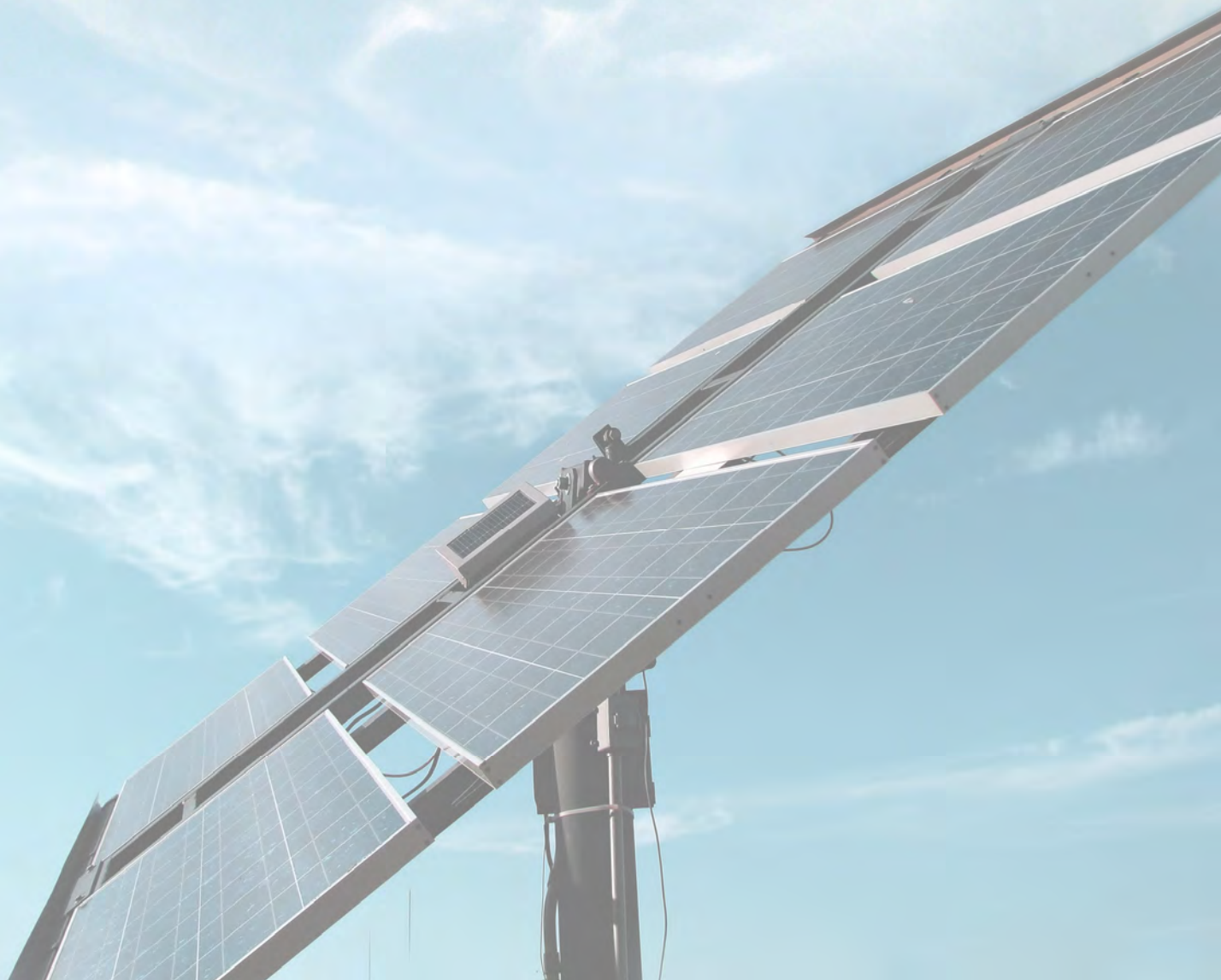
APPENDIX D

Consultation Record



APPENDIX D

D1: Lake Simcoe Region Conservation Authority



Petruniak, Jennifer

From: Jackie Burkart [J.Burkart@lsrca.on.ca]
Sent: Tuesday, August 17, 2010 4:53 PM
To: Petruniak, Jennifer; Mike Walters
Cc: Beverley Booth; Restivo, David; 103523
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jennifer,

I would suggest that since the panels are proposed on the KRCA side that you deal with them on this "no man's land" rather than having 2 Authorities involved. I would suggest that if you stay away from the wetland – beyond 120 metres if possible we would have no issues. You may wish to pass this by the KRCA to see how receptive they are to this suggestion.

Sincerely,

Jackie Burkart
 Senior Planner

Lake Simcoe Region Conservation Authority
 120 Bayview Parkway
 Newmarket, Ontario L3Y 4X1
 905-895-1281

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August 17, 2010 3:58 PM
To: Jackie Burkart; Mike Walters
Cc: Beverley Booth; Restivo, David; 103523
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jackie,

Thanks for providing the information related to this project. I have a question regarding your jurisdictional boundary - in the map I attached from KRCA they defined a different boundary then the one depicted on your map. Would you be able to tell us who has regulatory authority over the wetland in the SW corner of the property? Leah Breivik at KRCA has referred to this area as one of the potential "no man's land" that occasionally occurs when jurisdictional lines don't meet. What generally happens if development is to occur in this area?

Thanks,
 Jen



Jennifer Petruniak, M.Sc., LEED AP
Dillon Consulting Limited
 235 Yorkland Blvd., Suite 800
 Toronto, Ontario, M2J 4V8
 T - 416.229.4647 ext. 2432
 M - 416.671.6825
 F - 416.229.4692
JPetruniak@dillon.ca
www.dillon.ca



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From: Jackie Burkart [mailto:J.Burkart@lsrca.on.ca]
Sent: Tuesday, August 17, 2010 11:35 AM
To: Mike Walters; Petruniak, Jennifer
Cc: Beverley Booth
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jennifer,

Attached is the LSRCA's regulation mapping. There appears to be a wetland in the southwest corner of the property that appears to be outside of the LSRCA's jurisdiction. The adjacent lands are within our current boundary. I have attached a map for your convenience. Any access road should avoid the wetland and area of influence (120 metres). I provide the following information as it relates to our jurisdiction.

- watercourse/drain classifications and thermal stream classifications **none**
- regulation limits **see attached map**
- fish and benthic community information **no watercourse**
- natural environment studies in and/or adjacent to the study area **none**
- floodplain mapping **no floodplain**
- regionally or locally significant/rare flora, fauna, vegetation communities **please check with the NHIC in Peterborough**
- any additional natural environment data you may have for the indicated area **I am not aware of any studies in this area**

I hope this helps. Please email me if you have any further questions.

Kind regards,

Jackie Burkart
Senior Planner

Lake Simcoe Region Conservation Authority
120 Bayview Parkway
Newmarket, Ontario L3Y 4X1
905-895-1281

From: Mike Walters
Sent: August 17, 2010 9:22 AM
To: Petruniak, Jennifer
Cc: Jackie Burkart; Beverley Booth
Subject: RE: Sandringham Solar Energy Centre Review Requested

Hi Jennifer:

The file was forwarded to immediately upon receipt to Jackie Burkart, who is the Senior Planner working on the application. I will ask Jackie to contact you directly about the status of the file. Please feel free to contact me if there are any concerns.

Regards,

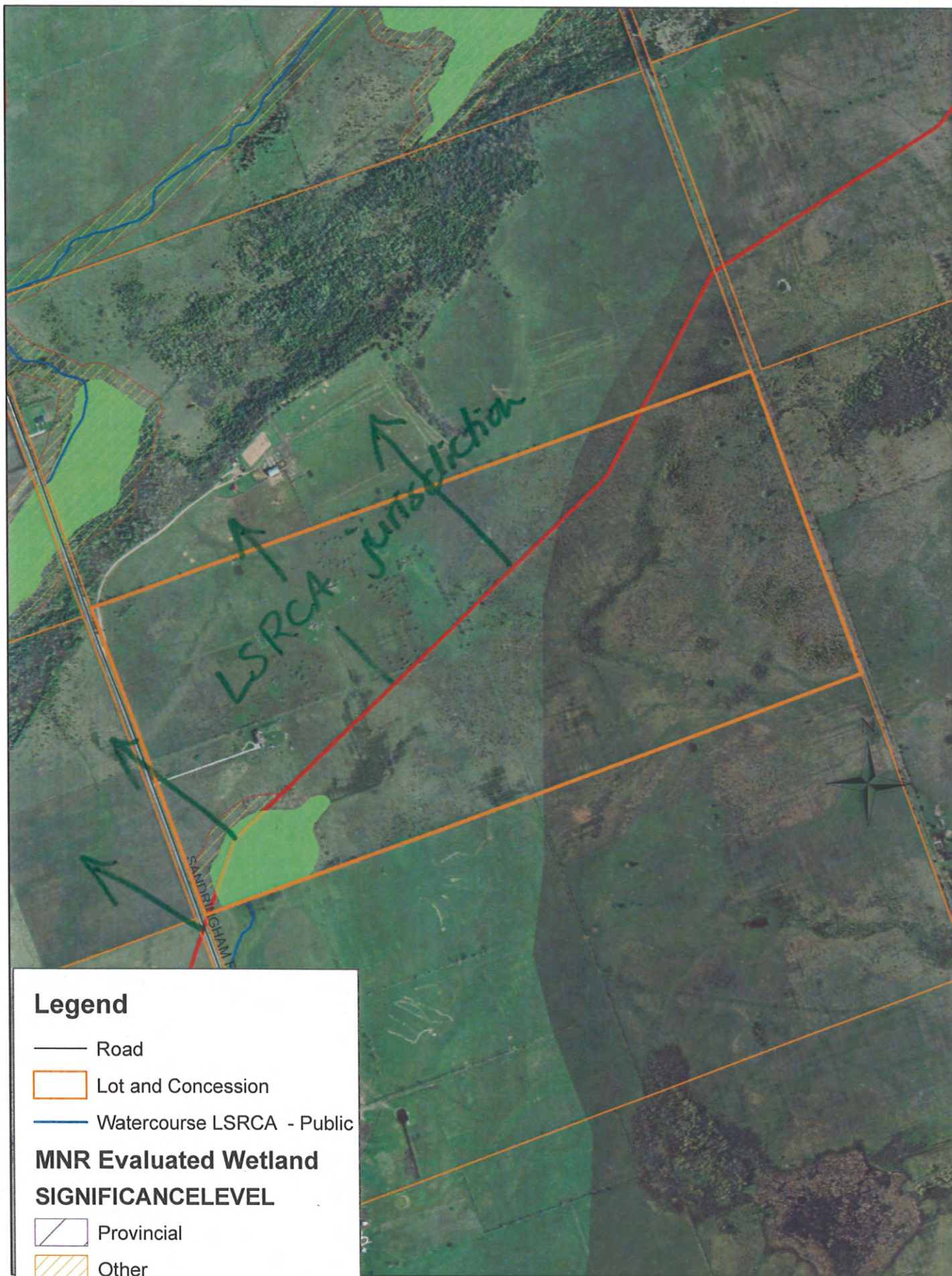
Michael Walters
General Manager, Watershed Management
Lake Simcoe Region Conservation Authority
120 Bayview Parkway, Newmarket, ON L3Y 4X1
905-895-1281, ext 234
www.lsrca.on.ca
Proud Winner of the [2009 International Thiess Riverprize](#)



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Legend

— Road

Lot and Concession

Watercourse LSRCA - Public

MNR Evaluated Wetland

SIGNIFICANCE LEVEL

Provincial

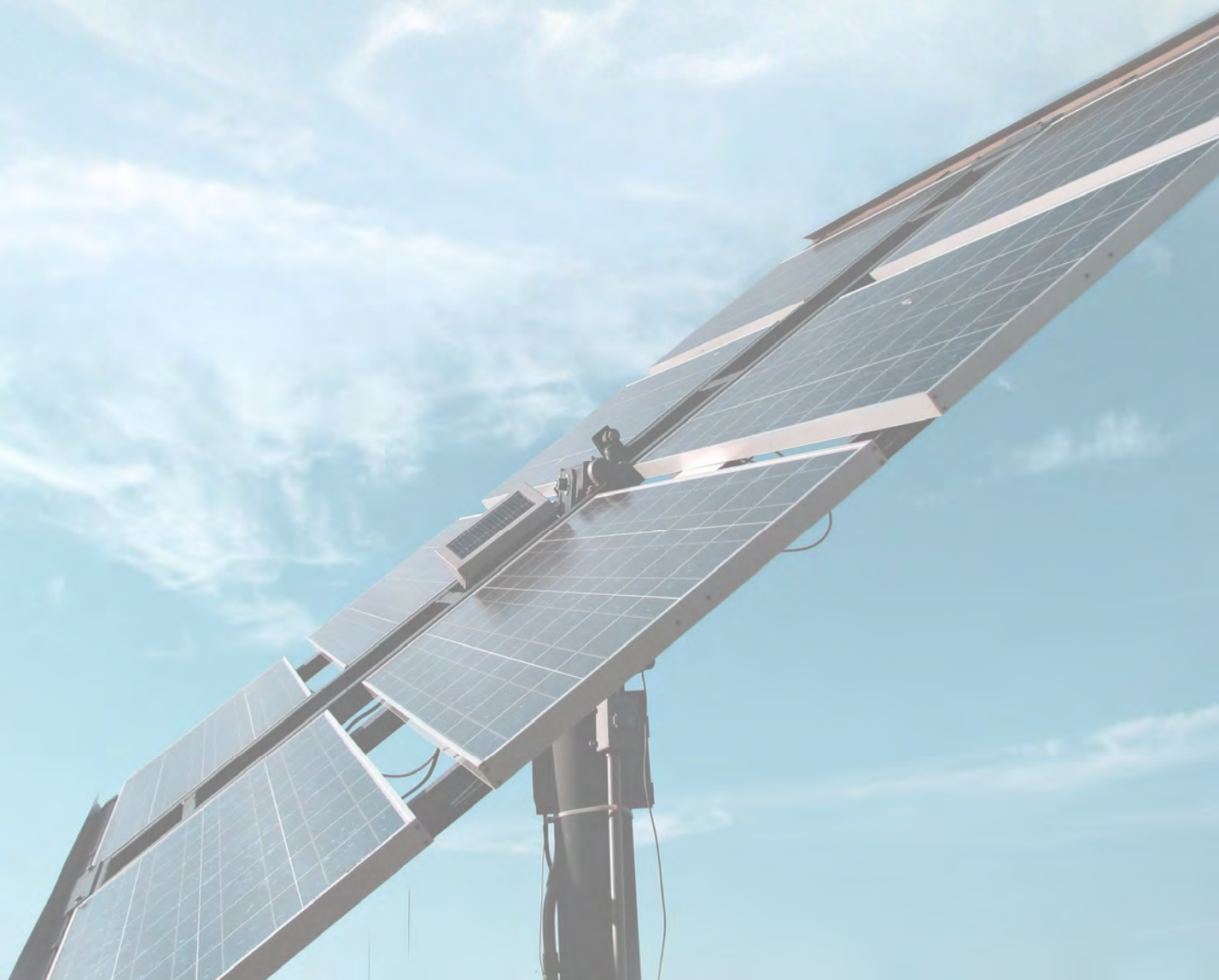
Other

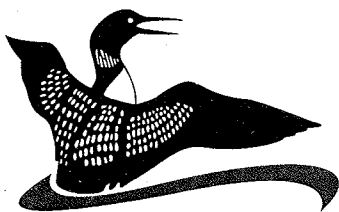
ELC_Wetland

Current Regulation Limit

APPENDIX D

D2: Kawartha Region Conservation Authority





KAWARTHA CONSERVATION

277 Kenrei Road
Lindsay, ON K9V 4R1

Tel: 705.328.2271
Fax: 705.328.2286

www.kawarthaconservation.com
geninfo@kawarthaconservation.com

Member of Conservation Ontario

*"Leading the
way to
abundant
clean water
within
a healthy
landscape"*

Proud to work in association with
our watershed municipalities:

City of Kawartha Lakes

Township of Scugog

Municipality of Clarington

Township of Brock

Township of Galway-Cavendish
-Harvey

Township of Cavan-Monaghan

August 10, 2010

KRCA File No. 11586

Ms. Jennifer Petruniak
Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto ON M2J 4V8

Regarding:

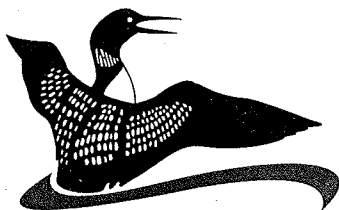
**Information Request
Lot 13, Concession 6
Geographic Township of Eldon
City of Kawartha Lakes
764 Sandringham Road**

Dear Ms. Petruniak:

We have now completed our review of the above-noted information request for the development of a solar farm on the above-noted property. Kawartha Conservation (KRCA) can provide the following environmental advisory comments for your consideration.

- The eastern half of the subject property is located within the KRCA's jurisdiction. The western half of the subject property is located within the Lake Simcoe Region Conservation Authority's (LSRCA's) jurisdiction.
- Portions of the eastern half of the subject property are located within an area regulated under this Authority's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 182/06). This regulation incorporates areas such as river and stream valleys, steep slopes, watercourses, floodplains and wetlands plus an allowance associated with each feature.
- Specific to this application, there are wetland areas on the subject property. Further, based on our mapping and as reflected on the KRCA map provided to your office on July 27, 2010 there appears to be an identified watercourse that traverses the eastern half of the subject property.

Based on our review of the Ecological Land Classification (ELC) data provided by your office in conjunction with our mapping, we can confirm that there are two wetland areas on the subject property. One of which is located within the southwest corner of the property and therefore within the LSRCA's jurisdiction. The other wetland surrounds the northern reach of the watercourse identified on the aforementioned map, in the middle of the east half of the subject property. KRCA policies generally prohibit development in all wetlands. Further, a permit from this office would be required for development and or site alteration proposed within 30 metres of the wetland.



KAWARTHA CONSERVATION

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-Harvey

Township of Cavan-Monaghan

KRCA File No. 11586

August 10, 2010

Page 2 of 2

Based on a site visit that was conducted on July 27, 2010, we can advise that the watercourse identified on our mapping does not meet the Conservation Authorities Act (Section 28(25)) definition of a 'watercourse' given that no identifiable depression in the ground was observed. Therefore, the mapped watercourse is not regulated under this Authority's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 182/06). We would however note that this area may serve as potential headwaters for Staples Creek and we would expect that this be taken into consideration for detailed site planning. Further as your office has identified, the ponds with the connecting swale provide fish habitat. We anticipate that this would also be taken into consideration for detailed site planning.

The above comments reflect our understanding, at the time of writing of the best available data, applicable policies and regulations, and the proposal. Changes in one or more of the above factors may affect our position in the future.

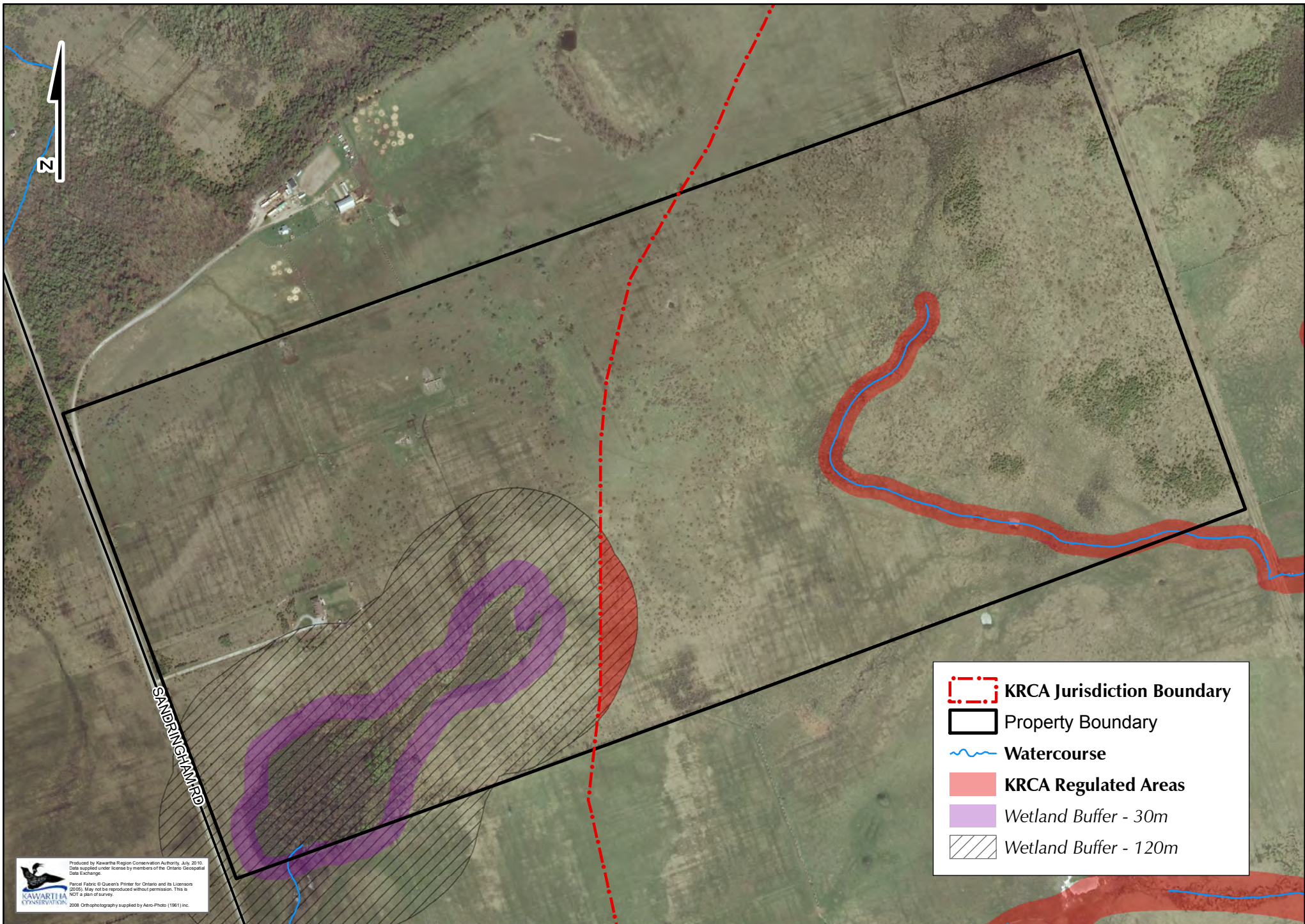
I trust this meets your information requirements at this time. Should you require any additional information, please do not hesitate to contact this office.

Yours truly,

Leah Breivik
Acting Resources Planner

Cc. Ms. Donna Villemaire, KRCA Chair
Mr. Dave Marsh, KRCA Director
Mr. Lloyd Robertson, KRCA Director





Lot 13 ,Concession 6, Eldon Township

Petruniak, Jennifer

From: Peter Waring [pwaring@kawarthaconservation.com]
Sent: Thursday, August 26, 2010 7:51 AM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting

Hi Jennifer,

By way of follow-up to your previous email, I had a discussion with some folks here at KRCA. Staff are correct, isolated ponds are not a concern from a fish habitat standpoint. So, long story short, if the proposed solar development excluded the wetland and the 30 meter buffer you would not require a permit from us. We would ask however that you mark the wetland boundary and buffer on your site plan and share it with us at your earliest convenience.

I hope this clears up any confusion.

Regards

Peter

Peter Waring
 Kawartha Conservation
 Manager of Planning and Regulations
 277 Kenrei Road
 Lindsay, ON K9V 4R1

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-25-10 8:41 AM
To: pwaring@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; 103523; Restivo, David; btregunno@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting

Hi Peter,

Regarding the ponds, while on site on July 27 with Leah and Brett we discussed these. Leah and Brett advised that the ponds were not regulated by the CA. I spoke with Brett about development in and around the ponds and the potential relocation of any fish/frogs. He identified the ponds as isolated dug farm ponds used for watering cattle. They are not connected to the greater system. Leah and Brett identified no issues with infilling these ponds if necessary and discouraged against relocation of any species due to the potential for introducing unwanted species into a new system.

For the REA applications, these dug farm ponds do not meet the definition of a "water body" as defined by the Act (Ontario Regulation 359/09). This is outlined in the Water Report submitted with the application package to the MOE.

If you have any questions, please don't hesitate to contact me.

Thanks,
 Jen



Jennifer Petruniak, M.Sc., LEED AP
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JPetruniak@dillon.ca
www.dillon.ca

Please consider the environment before printing this email

From: Peter Waring [mailto:pwarining@kawarthaconservation.com]
Sent: Tuesday, August 24, 2010 4:56 PM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com; 103523; Restivo, David
Subject: RE: Sandringham Solar Meeting

Hi Jennifer,

While KRCA would prefer that you took a systems approach on the site, looking at the hydrologic linkages between wetland, the ponds and down stream, it is only the wetland that would fall within our regulatory authority. The "stream" does not have defined channel and therefore doesn't meet the meet definition under the legislation. However, there is still the question of the ponds and therefore the fish habitat. While we have a level 3 agreement with the federal DFO to address these matters, it is not clear to us who has the responsibility under Green Energy Act applications. So I would suggest you may wish to contact MNR or MOE to get their advice.

Cheers

Peter

Peter Waring
Kawartha Conservation
Manager of Planning and Regulations
277 Kenrei Road
Lindsay, ON K9V 4R1

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-24-10 12:47 PM
To: pwarining@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; 103523; Restivo, David
Subject: RE: Sandringham Solar Meeting

Hi Peter,

Quick question - as indicated in Leah's letter to us on August 10, 2010 she indicated that the regulated area surrounding the wetland is 30 m. So long as our development stays outside of this, therefore eliminating the need for any permitting, will we need to correspond any further with KRCA on this property?

Thanks,
Jen

From: Peter Waring [mailto:pwarining@kawarthaconservation.com]
Sent: Tuesday, August 24, 2010 12:15 PM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting

Hi Jennifer,

Thank you for the update regarding your plans for this project. We understand and look forward to seeing the proposed site plans for the project as soon as you are in a position to share them with us.

3/7/2011

Regards,

Peter

Peter Waring
Kawartha Conservation
Manager of Planning and Regulations
277 Kenrei Road
Lindsay, ON K9V 4R1

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-24-10 11:14 AM
To: pwaring@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; Restivo, David; 103523
Subject: RE: Sandringham Solar Meeting

Hi Peter,

Thanks for your email. At this time we're investigating other options to try and avoid developing in the wetland. With this being considered, we'd like to cancel the meeting set-up for this week. Should it be determined that it's technically not feasible/efficient/desirable to work with a solar layout that avoids this wetland feature, we'll move ahead with the pre-consultation for the permit application.

We really appreciate all the advice and guidance Leah and yourself have provided.

Thanks,
Jen

From: Peter Waring [mailto:pwaring@kawarthaconservation.com]
Sent: Tuesday, August 24, 2010 10:23 AM
To: Petruniak, Jennifer
Cc: lbreivik@kawarthaconservation.com
Subject: RE: Sandringham Solar Meeting
Importance: High

Hi Jennifer,

Unfortunately April 26 doesn't work. We could do a teleconference this Friday at 9:00 a.m. Leah is away the following week and I would like her to be involved. Trust this can work.

Thanks
Peter

Peter Waring
Kawartha Conservation
Manager of Planning and Regulations
277 Kenrei Road
Lindsay, ON K9V 4R1

3/7/2011

(705) 328-2271 Ext. 213

From: Petruniak, Jennifer [mailto:JPetruniak@dillon.ca]
Sent: August-20-10 3:50 PM
To: pwaring@kawarthaconservation.com
Cc: lbreivik@kawarthaconservation.com; Restivo, David; 103523
Subject: Sandringham Solar Meeting

Hi Peter,

Thanks for taking the time to discuss this project with us today. We really appreciate the input and advice from you and Leah to date. We'd like to schedule a meeting for Thursday, August 26 at 1PM to review the draft permit application and draft Terms of Reference for a Scoped EIS that we will submit early next week. As discussed, we'd like to proceed under the guidelines of an approved ToR for the Scoped EIS by the end of next week.

If the time of this meeting doesn't work with your schedule, please let us know.

Thanks again and have a great weekend.

Regards,
 Jen



Jennifer Petruniak, M.Sc., LEED AP
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 235 Yorkland Blvd., Suite 800
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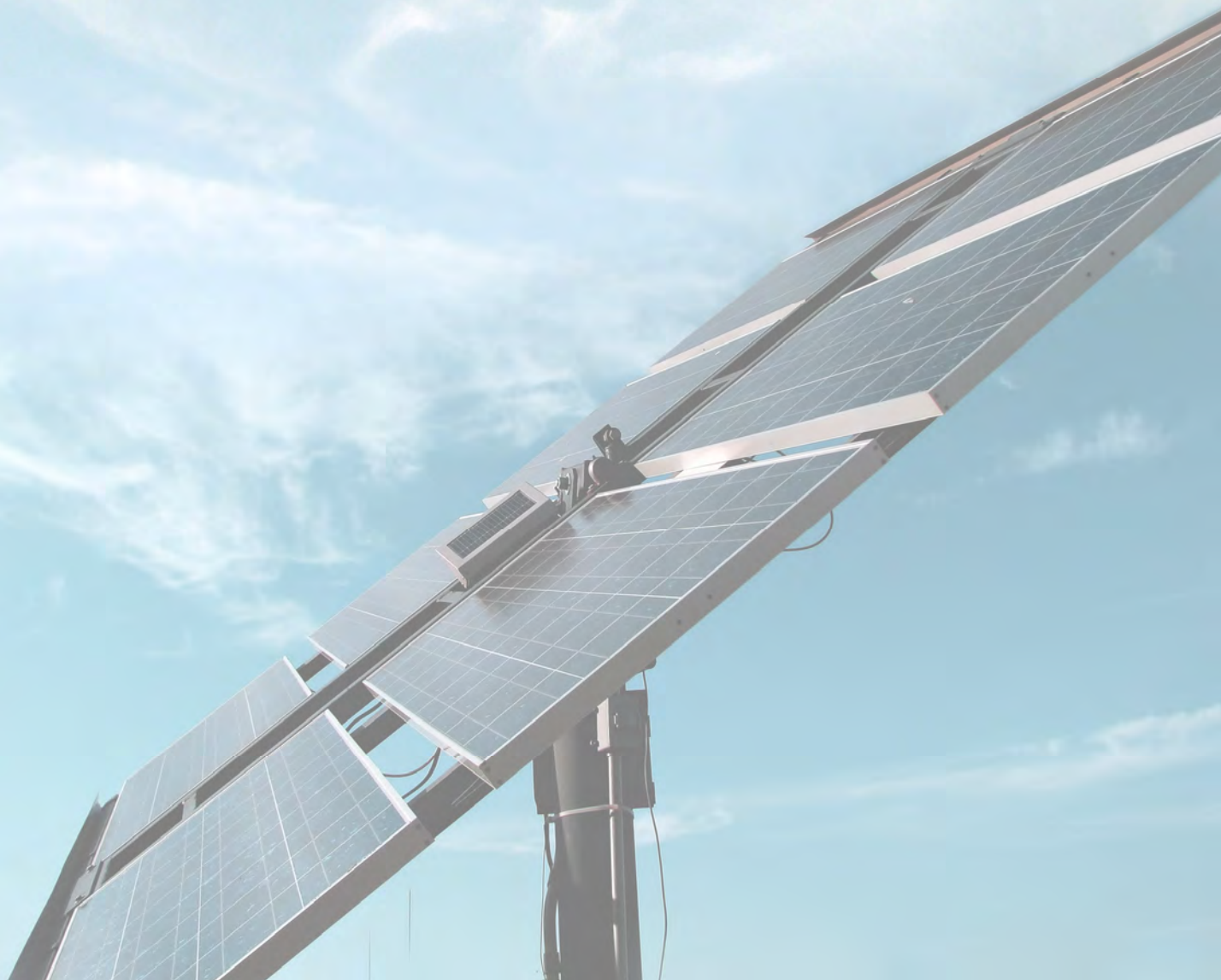
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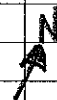
APPENDIX E

Field Notes and Site Photographs



General Notes

- Sunny; air temp 27°C + humidity.
- Lack of defined channel; could not locate mapped watercourse on property
- Small channel (braided) defined between 2 farm ponds
- Land extremely dry.
- Drove along Moor Rd - little to no water in crossings.



SANDRINGHAM ROAD

MOOR ROAD



ruins of
previous
dwelling

mapped watercourse

property line

Pond #1

- approx. 10m diameter
- centre full of emergent aquatic vegetation
- Red-wing blackbird + green frogs / tadpoles obs.
- Leech swimming
- no fish obs.

Pond #2

- approx. 10m diameter
- open water with some emerg. veg along perimeter
- Submergent + floating vegetation
- small bullfish + gr. frogs obs.

*NOT TO SCALE

By Jennifer Petrucci, MSc Date May 26, 2010

Checked _____ Date _____

Page 1 of 1

Project Name

Sandringham Solar
Energy Centre - Invenegy

Project No

10-3523

DILLON
CONSULTING

Photo 1

Sandringham
Solar Farm

Aquatic
Resources

July 27, 2010

View southeast
at the
southeastern-
most dug farm
pond in the
project location.
Note no inflow
or discharge
channel was
observed.



Photo 2

Sandringham
Solar Farm

Aquatic
Resources

July 27, 2010

View northwest
from the Photo
1 site. View is of
the other small
dug farm pond
and shows lack
of channel
between them.



Photo 3

Sandringham
Solar Farm

Aquatic
Resources

July 27, 2010

View north of
grassy swale on
west side of
Moor Road
where stream
was mapped in
Records Review.



Photo 4

Sandringham
Solar Farm

Aquatic
Resources

July 27, 2010

View east of
adjacent lands.
No defined
channel was
observed where
stream was
mapped during
records review.

