



## **Future Solar Developments Inc.**

**3400 Pharmacy Avenue, Unit 8  
Scarborough, Ontario  
M1W 3J8**

Water Assessment Site Investigation Report  
Proposed Groundmount Solar Facility LP 7  
9274 Union Drive  
Strathroy, ON

**Project Number**  
WSL-00002250-00

**Prepared By:**

**exp**  
1595 Clark Boulevard  
Brampton, ON L6T 4V1  
Canada

**Date Submitted**  
July 2012



## Legal Notification

This report has been prepared by **exp** Services Inc. on behalf of Mr. Sam Qin of Future Solar Developments Inc. for the submission to the Ontario Ministry of the Environment as part of the Renewable Energy Approval process.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. **Exp** Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.



# 1 Introduction & Background

Exp Services Inc. (**exp**) was retained by Mr. Sam Qin of Future Solar Developments Inc. to conduct a records review of waterbodies located on, and/or in the surrounding areas of the proposed ground-mounted solar facility set for plot LP 7 located at 9274 Union Dr, Strathroy-Caradoc, Ontario. For the purpose of this report the entire Site including the 120 metre buffer from the solar panel will be identified as “subject property”, those areas including the panel and construction limits will be identified as “Site”. The project involves the design and construction of one (1) 100 kW solar farm. It is estimated that the size of the 100 kW plot is approximately 0.24 hectares.

The purpose of this investigation was to confirm the presence or absence of waterbodies outlined in the records review as completed by **exp** (2012).

## 1.1 Legislative Requirements

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

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to undertake a water body records review for to identify whether the project location is:

- a. In a water body.
- b. 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.
- c. Within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity.
- d. Within 120 m of the average annual high water mark of a permanent or intermittent stream.
- e. Within 120 m of a seepage area.

Subsection 30 (2) of the REA Regulation requires the proponent to prepare a report “setting out a summary of the records searched and the results of the analysis” (O. Reg. 359/09). This water assessment records review report has been prepared to meet these requirements.

Section 31 of the REA Regulation requires proponents of Class 3 solar projects to undertake a waterbody site investigation for the purpose of determining:

- a) whether the results of the analysis summarized in the (waterbody records review) report prepared under Subsection 30 (2) are correct or require correction, and identifying any required corrections;
- b) whether any additional waterbodies exist, other than those that were identified in the (Water Body Records Review) report prepared under Subsection 30 (2);
- c) 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,
- d) the distance from the Project location to the boundaries determined under Clause (c).

The REA Regulation has specific requirements if designated lake trout lakes occur within 300 m of the Project area. These requirements were not applicable to this particular Project as no lake trout lakes of any status were identified during the waterbody records review (**exp** 2012).

In Section 1(1) of the REA Regulation, a waterbody is defined as a lake, a permanent stream, an intermittent stream or a seepage area, but does not include:

- a) grassed waterways;
- b) temporary channels for surface drainage, such as furrows, or shallow channels that can be tilled or driven through;
- c) rock chutes and spillways;
- d) roadside ditches that do not contain a permanent or intermittent stream;
- e) temporarily ponded areas that are normally farmed;
- f) dugout ponds; and, or,
- g) artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas.

Also within Section 4.1 of Water Assessment Requirements in the REA Technical Guide, an intermittent stream is defined as “a natural or artificial channel, other than a dam, that carries water intermittently and does not have established vegetation within the bed of the channel, except vegetation dominated by plant communities that require or prefer the continuous presence of water or continuously saturated soils for their survival” (O. Reg. 359/09).

Seepage areas are defined as “a site of emergence of groundwater where the water table is present at the ground surface, including a spring” (O. Reg. 359/09).

Subsection 3 of Section 31 of the REA Regulation requires the proponent to prepare a report setting out the following:

1. A summary of any corrections to the report prepared under Subsection 30 (2) and the determinations made as a result of conducting the site investigations under Subsection (1);

2. Information relating to each water body identified in the records review and in the site investigations, including the type of water body, plant and animal composition and the ecosystem of the land and water investigated;
3. A map showing
  - i. the boundaries mentioned in Clause (1) (c);
  - ii. the location and type of each water body identified in relation to the Project location; and,
  - iii. the distance mentioned in Clause (1) (d).
4. A summary of methods used to make observations for the purposes of the site investigation;
5. The name and qualifications of any person conducting the site investigation;
6. If an investigation was conducted by visiting the site:
  - a. The dates and times of the beginning and completion of the site investigation.
  - b. The duration of the site investigation.
  - c. The weather conditions during the site investigation.
  - d. Field notes kept by the person conducting the site investigation.
7. If an alternative investigation of the site was conducted:
  - a. The dates of the generation of the data used in the site investigation.
  - b. An explanation of why the person who conducted the alternative investigation determined that it was not reasonable to conduct the site investigation by visiting the site. O. Reg. 521/10, s. 18(2).

This waterbody site investigations report has been prepared with the guidance of the Ministry of Environment's DRAFT Technical Bulletin – Guidance for Preparing the Water Assessment and Water Body Reports (dated January 28, 2011).

## 1.2 Summary of Results of Records Review

The Site has been identified to contain natural features, as presented in **Table 1-1** (exp Services Inc., 2012). The following site investigation will delineate the boundaries of those waterbodies identified.

**Table 1-1:** Summary of Records Review for LP7

Project Location	Yes/No/Unknown	Project Description
Is the Project within a waterbody?	No	The Site is not located within a waterbody
Is the Project within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity?	No	The Site is not located within 120 metres of an average annual high water mark Lake that is at or above development capacity.

Project Location	Yes/No/Unknown	Project Description
Is the Project within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity?	No	The Site is not located within 300m of a lake trout lake of any status.
Is the Project within 120 m of the average annual high water mark of a permanent or intermittent stream?	No	The Site is not located within 120 m of the annual high water mark of permanent or intermittent stream.
Is the Project within 120 m of a seepage area?	Unknown	No known seepages were identified during the Records Review

### 1.3 Site Visit

A visit to the Site was completed on January 12, 2012. Weather at the time of the visit was cloudy and raining. Temperature at the time of visit ranged from -2 to 2 °C. The Site visit was conducted over the course of two (2) hours, between 8:30 am and 10:30 am.

#### 1.3.1 Name and Qualifications of Person Conducting Site Investigation

Ms. Melissa Torchia, M.A.Sc., is a junior ecologist with **exp** Services Inc., that specializes in ecological inventories for sites across the province of Ontario. In this regard she is familiar with methods required for natural heritage assessments that help quantify the natural environment in support of environmental assessments, environmental impact studies and endangered species screening. She is a certified Ontario Wetland Evaluator; in addition she has also completed natural heritage data sensitivity training provided by the Ontario Ministry of Natural Resources (OMNR). Examples of past studies include riparian habitats and forest investigations in cities such as, Brantford, Welland, Ivy Lea, Algonquin Park and Picton. These assessments were guided by the *Ontario Environmental Protection Act*, *Ontario Environmental Assessment Act*, *Ontario Endangered Species Act*, and the *Ontario Planning Act*. Melissa has also been involved with the preparation of a planting plan for the endangered species of butternut, in addition to planting plans for creek restoration projects. Melissa Torchia received her Honours Bachelor of Science degree in environmental science at York University. She then received her Master's in Applied Science degree, specializing in urban forestry from Ryerson University. Her Master's thesis focused on the use of trees to cool the urban microclimate, which was conducted in the downtown core of Toronto on the University of Toronto Campus.

Mr. David Praskey, B.Sc., is an aquatic ecologist with **exp** Services Inc. He has over ten years of experience in the aquatic ecology field across Ontario, northern Labrador and British Columbia. David's professional experience includes projects in the fields of municipal and private development; baseline ecological studies and Environmental Effects Monitoring for metal mines; B.C. stream classification for forestry projects; and various MNR and CWS fisheries programs. He has also been responsible for monitoring MTO construction projects as an approved Fisheries Compliance During Contracts Specialist in RAQS, as well as other

culvert replacement projects. He has also conducted several fish removal operations. David has a wide range of experience conducting fish, invertebrate, water and sediment sampling using various methods and gear types in lakes, streams, ponds, rivers and wetlands. He has also been involved in Species at Risk mussel relocation projects and has participated in the Mussel Species at Risk Workshop.

#### 1.4 Site Description

This Site is located in Strathroy-Caradoc, Ontario, and is proposed to contain one (1) 100 kW solar farm plot LP 7. It is estimated that the size of the 100 kW plot is approximately 0.24 hectares. A general land classification for the Site is noted as agricultural land. At the time the Site visit was conducted the ground was barren, with patches of small grasses.

The Site area for the proposed new solar panel is located north west of an existing house. The area was relatively flat at the time of investigation. Further west of the agricultural field, outside the subject property is a large woodland area that was fairly dense, with abundant new growth of deciduous trees. Inside the woodland are various natural pools of water, and a man-made drainage system that runs north-south and east-west at the back end of the woodlot. The drainage ditch contained approximately 0.5 meters of water at the time the Site visit was conducted. Another woodlot is located along the west side of the Site, again outside the subject property. This woodlot contained a similar composition to the northern woodlot; dominated by deciduous tree species, with evidence of flooding. No drainage system was evident in the west woodlot at the time the Site visit was conducted.

No water features were observed during the site investigation to occur within the subject property.

For surface water feature boundaries refer to **Figure 1**; photos of the Site and surrounding areas are found in Appendix A.

## 2 Methodology

Waterbodies were identified within the records review prepared by **exp** (2012), whereby, unknown and known features were further investigated to identify their presence or absence within the subject property, as well as to delineate boundary limits.

The entire project location and lands within 120 m were investigated by the observer on foot in order to document and identify the presence of waterbody features present. Boundaries outside 120 metres were also investigated in order to determine connectivity of other water features in surrounding areas to those that may have been found within the subject property.

Photographs of the Site were taken in addition to those that pertained to any known or documented water feature.



### 3 Site Investigation Results

This section identifies the results of the site investigation and discusses the water features observed and noted in the records review as presented in **Table 1-1**. Features documented in relation to the proposed project location are illustrated on **Figure 1**.

#### 3.1 Seepage Areas

No seepage areas were identified in the records review, and were therefore identified as unknown. During the site investigation, this water feature was assessed in order to confirm the presence or absence of these areas. The site investigation confirmed the absence of seepage areas within the subject property.

### 4 Summary

Based on the results of this Site investigation it can be confirmed that no water features exist within the subject property. Therefore, a waterbody impact study will not be prepared for this Site.

## 5 Closure

We trust this report is satisfactory for your purposes. We would be pleased to provide additional information, to clarify any questions that arise following the review of this report.

Sincerely,

**exp** Services Inc.

DRAFT

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Melissa Torchia M.A.Sc.  
Environmental Scientist  
Environmental Sciences Division

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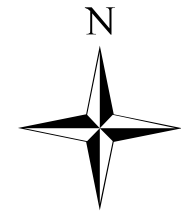
Dean Fitzgerald, Ph.D.  
Team Leader – Ecological Services  
Environmental Sciences Division

## 6 References

Exp Services Inc. (2012). Waterbody Assessment Records Review Report LP1. Prepared July 2012.

Government of Ontario. Ontario Regulation 359/09: Renewable Energy Approvals under Part V.0.1 of the Act. (Environmental Protection Act).  
[http://www.e-laws.gov.on.ca/html/regs/english/elaws\\_regs\\_090359\\_e.htm](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090359_e.htm)

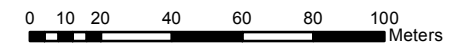
## Figures



### Legend

- Proposed Solar Panel
- Construction Limit
- 120 m Buffer

Source: Google Maps, accessed 2012



#### PROJECT TITLE:

FUTURE SOLAR DEVELOPMENTS INC. LP7  
 WATER ASSESSMENT SITE INVESTIGATION  
 9274 UNION DRIVE  
 STRATHROY, ONTARIO

#### DRAWING TITLE:

WATER ASSESSMENT  
 SITE MAP

#### PROJECT No.:

WSL-00002250-00

#### SCALE:

AS NOTED

#### DATE:

JULY 2012

#### DWN:

EE

#### CHKD:

DF

#### FIG. No.:

1

## **Appendix A – Site Photographs**



**Photograph No. 1:** Edge of the Site facing northwest; view of north and western woodlot



**Photograph No. 2:** North western corner of property facing south east; site consists of agricultural property





**Photograph No. 3:** Southern edge of property facing north; large sugar maples present along roadside



**Photograph No. 4:** Edge of proposed site, central on the property facing west; western woodlot present





**Photograph No. 5:** Edge of proposed site, central on the property facing north; Northern woodlot present



**Photograph No. 6:** Manmade drainage channels present in the northern woodlot; outside the subject property