Appendix A: Site Photographs

Photograph No. 1: August 2012. View of project location LP 10; photograph facing north west.

Photograph No. 2: August 2012. View of project location (LP 10) in the foreground, and residential dwelling in the background; photograph facing east

Photograph No. 3: January 2012. View of project location LP 9; with small dugout quarry pond visible; photograph facing south

Photograph No. 4: January 2012. Dugout quarry pond; just north of LP 9

Photograph No. 5: August 2012. East end of property, facing north. View of MAS shallow marsh wetland located east of the residential dwelling surrounded by SWT thicket swamp and SWM1-1 White Cedar-Hardwood Mineral Mixed Swamp type in the background

Photograph No. 6: January 2012. East end of property, facing north. View of MAS shallow marsh wetland located east of the residential dwelling surrounded by SWT thicket swamp and SWM1-1 White Cedar-Hardwood Mineral Mixed Swamp type in the background.

Photograph No. 7: August 2012. View of emergent and submergent aquatic vegetation in the MAS shallow marsh wetland located east of the residential dwelling

Photograph No. 8: August 2012. Green frog (*Lithobates clamitans*) observed in MAS shallow marsh wetland.

Photograph No. 9: August 2012. On dirt road extending east from residential dwelling, facing south. Culvert connecting MAS shallow marsh north of the dirt road to SWT2 thicket swamp south of the dirt road.

Photograph No. 10: August 2012. View of metamorphosing green frogs in dugout quarry pond

Photograph No. 11: August 2012. Black and yellow garden spider (*Argiope aurantia*) observed in SWT thicket swamp located east of the residential dwelling.

Photograph No. 12: August 2012. View of SWT thicket swamp located northeast of residential dwelling.

Photograph No. 13: August 2012. View of other small pool in the MAS shallow marsh east of the residential dwelling

Photograph No. 14: August 2012. View of SWD deciduous swamp south of Story Road dominated by native deciduous trees.

Photograph No. 15: August 2012. In SWD deciduous swamp south of Story Road. Wood frog *(Rana sylvatica)*

Photograph No. 16: August 2012. At dugout pond north of project location (LP 9), facing south. View of honey bee hives sitting next to the dugout pond.

Photograph No. 17: January 2012. SWM1-1 White Cedar – Hardwood Mineral Mixed Swamp

Photograph No. 18: January 2012. Southern edge of property, facing south. CUP3-3 Scotch Pine plantation located along southern property boundary

Appendix B: Ontario Wetland Evaluation System

1 Introduction and Background

A Site Investigation to 1572 Story Road, Midhurst, Ontario was completed on August 15, 2012. The weather at the time of the investigation was sunny, and the temperature ranged from 15 to 20 ºC. The Site Investigation was conducted over the course of five (5) hours, between 7:30 am and 12:30 pm.

The purpose of the Site Investigation was to identify and evaluate any wetland communities located in or within 120 metres of the either of the proposed ground-mounted solar facility identified as LP 10 and LP 9 ("project locations"). Wetland evaluations were completed according to guidelines outlined in the Modified Southern Ontario Wetland Evaluation System (OMNR, 2011).

Wetlands are those areas that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface (Lee *et al.*, 1998). A significant wetland is an area identified as provincially significant by the OMNR using evaluation procedures established by the province, as amended from time to time (Lee *et al.,* 1998).

2 Methodology

The following approach was used to conduct the wetland evaluations:

- Review of background records and information on wetland-related natural features in the vicinity of the project location. This included review of records obtained from the Natural Heritage Information Center (NHIC) database, Ontario Ministry of Natural Resources (OMNR) and Nottawasaga Valley Conservation Authority (NVCA).

- Conduct Site Investigation to survey wetlands present in or within 120 metres of both project locations. This included identification of wetland types; delineation of wetland community boundaries; plant species identification; and, incidental observations of nearby wildlife. Identification of wetland communities were completed based on guidelines outlined in the Ecological Land Classification for Southern Ontario (Lee *et al.*, 1998) and the Modified Southern Ontario Wetland Evaluation System (OMNR, 2011).

3 Results

3.1 Record Review Results

The OMNR records review, NVCA, Simcoe County Geo Mapping and LIO indicated that wetlands occur within 120 metres of the LP 10 project location. Also NVCA records indicate that the LP 10 project location is within an area regulated by Ontario Regulation 172/06.

3.2 Site Investigation Results

Site Investigations confirmed that much of the vegetation east and south of the LP 10 project location is dominated by wetland plant species. No wetland communities were observed near the LP 9 project location. A total of five (5) distinct wetland communities were identified during the Site Investigation. These communities were:

reM_1 [ELC: Shallow Marsh Community Series (MAS)]
tsS_1 [ELC: Thicket Swamp Ecosite (SWT)]
tsS_2 [ELC: Mineral Thicket Swamp Ecosite (SWT2)]
cS_3 [ELC: White Cedar – Hardwood Mineral Mixed Swamp Type (SWM1-1)]
hS_4 [ELC: Deciduous Swamp Community Series (SWD)]

Code	Forms	Dominant Species
M1	re, ne, gc, ls, ts, h	re, *Typha latifolia*, *Scirpus acutus*, *Phragmites australis*; ne, *Carex crinita*, *Carex viridula*, *Juncus canadensis*, *Equisetum fluviatile*; gc, *Asclepias incarnate*, *Eupatorium maculatum*, *Eupatorium perfoliatum*, *Lythrum salicaria*, *Spiranthes romanzoffiana*; ls, *Cornus sericea*; ts, *Alnus incana*, *Salix* sp.; h, *Acer freemanii*
S1	ts, h, c, gc, ne	ts, *Salix* sp., *Cornus sericea*, *Aronia melanocarpa*; h, *Acer freemannii*, *Populus balsamifera*, *Ulmus americana*; c, *Pinus strobus*, *Thuja occidentalis*; gc, *Eupatorium maculatum*, *Lythrum salicaria*, *Lycopus uniflorus*;, ne, *Calamagrostis canadensis*, *Equisetum fluviatile*.
S2	ts, h, c, gc, re, ne	ts, *Salix* sp.; h, *Acer freemanii*; c, *Thuja occidentalis*; gc, *Lythrum salicaria*, *Spiranthes romanzoffiana*, *Aster* sp.; re, *Typha latifolia*; ne, *Eriophorum* sp., *Carex crinita*, *Carex brunnescens*
S3	c, ts, ls, gc, ne	c, *Thuja occidentalis*; ts, *Salix* sp.; ls, *Cornus sericea*;, gc, *Spiranthes romanzoffiana*; ne, *Equisetum fluviatile*, *Eriophorum* sp.
S4	h, c, gc, ne	h, *Acer rubrum*, *Acer freemanii*, *Fraxinus nigra*; c, *Thuja occidentalis*; gc, *Onoclea sensibilis*, Boehmeria cylindrica, *Onoclea sensibilis*, *Rubus* sp., *Sium suave*, *Sphagnum* sp.; ne, *Carex crinita*, *Carex intumescens*

No significant species of flora were observed during the Site Investigation. One (1) Monarch butterfly *(Danaus plexippus)*, a species of Special Concern, was observed in reM_1. Given the location of the wetland communities (within 120 metre buffer zone of LP10) and their characteristics, these natural features will require an evaluation of significance.

I trust this information is adequate. I would be pleased to provide additional information, to clarify any questions that arise following the review of this report.

Sincerely,

exp Services Inc.

Melissa Torchia M.A.Sc.
Environmental Scientist
Certified Ontario Wetland Evaluator
Environmental Division

References:

Lee, H., Bakowsky, W., Riley, J., Bowles, J., Puddister, M., Uhlig, P., and McMurray, S. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources. SCSS, Science Development and Transfer Branch, Field Guide FG-02

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Appendix C: Amphibian Survey

1 Introduction & Background

Amphibian surveys were conducted at 1572 Story Road, Midhurst Ontario. The purpose of the surveys was to identify and evaluate any amphibian communities located in or within 120 metres of the proposed ground-mounted solar facilities set for plot LP 9 and LP 10 (herein referred to as "project locations"). Amphibian surveys were completed according to guidelines outlined in the Marsh Monitoring Program protocol (MMP) (Konze & McLaren, 1997).

1.1 Site Investigation

Two (2) surveys were conducted on May 7, 2012 and June 28, 2012. The Marsh Monitoring Protocols were followed as closely as possible with the surveys occurring early and late in the season. A summary of the weather characteristics for the surveys is provided in **Table 1**.

Table 1: Summary of Survey Identification & Weather Characteristics

Date (2012)	Time (PM)	Temperature (˚C)	Wind (Km/h)	Conditions
May 7	6:45 – 7:30	13	7	Light rain, calm
June 28	10:00 – 10:45	22	13	Calm

2 Methodology

Amphibian surveys were conducted using the MMP. Rain was observed within the previous 24 hours prior to each survey. Winds were light during each survey. Surveys were conducted using an unlimited distance point count. All frogs and toads within a 180° arc sampling area in front of an observer were counted (Konze & McLaren, 1997). The counts were conducted across nine (9) stations that represented the different habitat features of the project location and those areas within 120 metres.

At each station on each sampling date, we conducted three (3) listening sessions per station. Each session lasted three (3) minutes. The calls heard were classified into five (5) levels:

- Level (1) – No calls heard;
- Level (2) – Frog(s) or toad(s) seen or heard
- Level (3) – Frog(s) or toad(s) can be counted, calls do not overlap;
- Level (4) – Frog(s) or toads can be counted, while others are overlapping; or
- Level (5) – Full chorus, continuous and overlapping; cannot distinguish frogs or toads

A summary of habitat characteristics for each station is as follows as mapped on Figure 1:

- Station (1) – At south edge of the shallow marsh
- Station (2) – At north west edge of the thicket swamp
- Station (3) – At north edge of the property; just north of LP 10
- Station (4) – At the north edge of the property

- Station (5) – At the north west edge of the property; north of LP 9
- Station (6) – At the dugout quarry pond; just north of LP9
- Station (7) – At the north west edge of the southern woodland/deciduous swamp
- Station (8) – At the mid-section edge of the southern woodland/deciduous swamp
- Station (9) – At the north east edge of the southern woodland/deciduous swamp

3 Results

A number of frogs were observed during both surveys, however, more species were recorded during the May survey as summarized in **Table 2** and **Table 3**. Those species observed during the May survey included Spring peepers (*Pseudacris crucifer*), American toad (*Anaxyrus americanus*), Green frog (*Lithobates clamitans*) and Mink frog (*Lithobates septentrionalis*). The dominant species observed was Spring peepers, who displayed full chorus at multiple stations (1, 7, 8 and 9).

Species observed during the June survey were associated with those species that are known to breed later in the season. These species included Green frog, Leopard frog (*Lithobates pipiens*) and Mink frog.

Table 2: Summary of May 7, 2012 Amphibian Survey

Survey	Station	Species	Abundance Code
May 7th, 2012	1	Chorus of Spring peepers in the shallow marsh	5
	2	One (1) Green frog heard at the edge of the thicket swamp	3
	3	NA	1
	4	NA	1
	5	NA	1
	6	Five (5) Mink frogs visually observed in dugout quarry pond and one (1) American toad heard	2
	7	Full chorus of Spring peepers with faint calls of American toad in south woodland	5
	8	Full chorus of Spring peepers with faint calls of American toad in south woodland	5
	9	Full chorus of Spring peepers with faint calls of American toad in south woodland	5

Table 3: Summary of June 28, 2012 Amphibian Survey

Survey	Station	Species	Abundance Code
June 28th, 2012	1	Visually observed seven (7) Green frogs and heard two (2) of them; visually observed four (4) Mink frogs	2 & 3
	2	NA	1
	3	NA	1
	4	NA	1
	5	NA	1
	6	Visually observed six (6) Mink frogs and seven (7) Green frogs	2
	7	Faint calls of a Leopard frog and a Mink frog within southern woodland	3
	8	Faint calls of a Leopard frog and a Mink frog within southern woodland	3
	9	Faint calls of a Leopard frog and a Mink frog within southern woodland	3

4 Summary

There were a number of individuals observed during the surveys conducted; with the majority of observations occurring in May. Dominant species, Spring peeper, displayed full chorus at four (4) of the nine (9) stations set along the property. The habitat present inside the wetland area east of the LP 10 project location does display suitable characteristics for woodland breeding. The dugout quarry pond just north of the LP 9 project location also contained a large number of frogs during both surveys. This pond is isolated from any other wetland communities. This feature may serve as breeding habitat for frogs that occur within the woodland north of the subject property.

Overall, it was concluded that woodland breeding habitat occurs within 120 metres of both project locations. In addition, amphibian corridors may be present within 120 metres of the LP 10 project location. The evaluation of significance of each of these natural features is required.

We trust this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

Yours truly,

Exp Services Inc.

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Environmental Division

Lindsay Wolfenberg, B.Sc.
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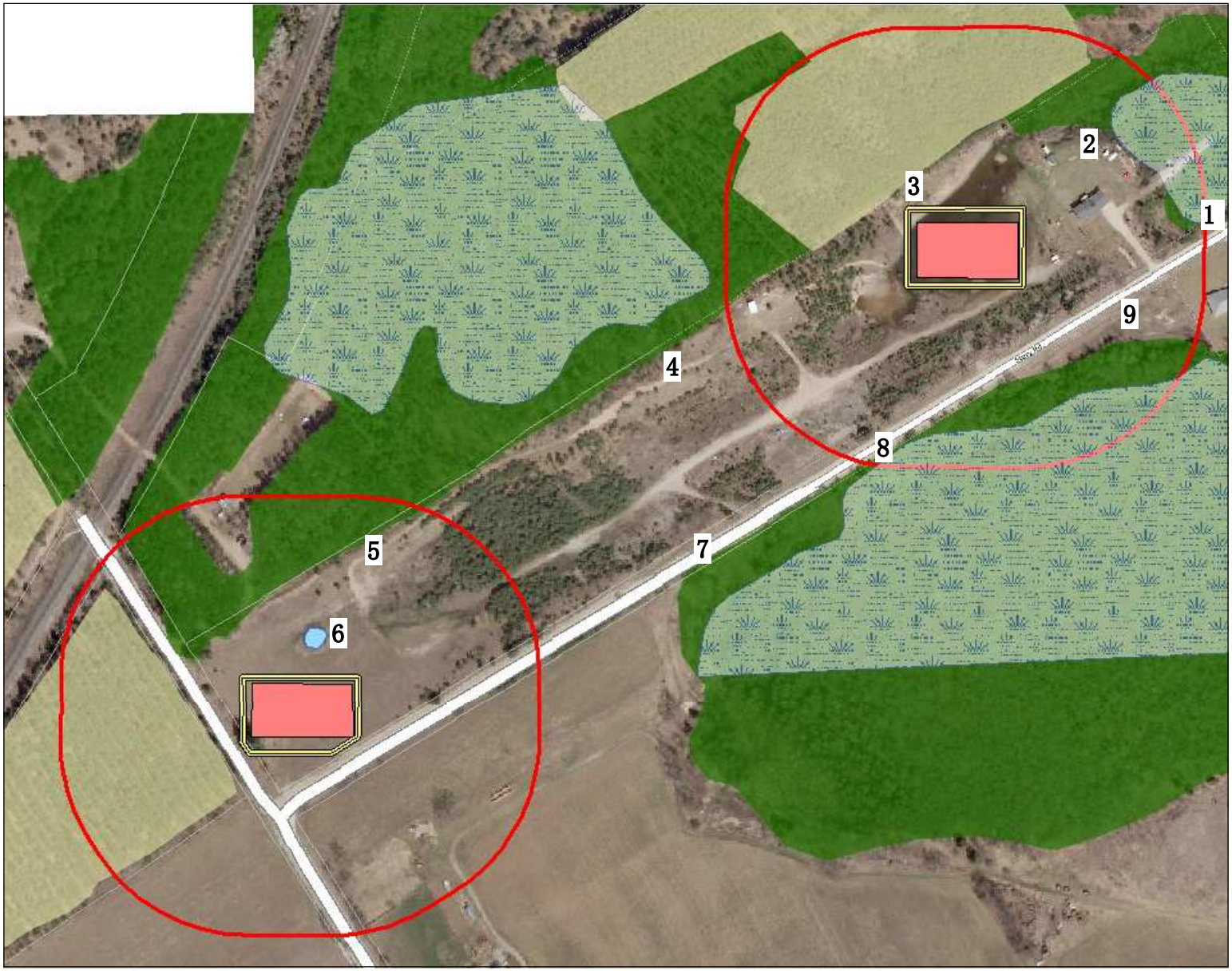
References

Konze, Karl and McLaren, Margaret. 1997. Wildlife Monitoring Programs and Inventory Techniques for Ontario. Ontario Ministry of Natural Resources. Northeast Science and Technology. Technical Manual TM-009. 139 pp.



N

Legend

- Proposed Solar Panel
- Construction Limit
- 120 m Buffer
- Pond
- MNR Unevaluated Wetland
- Forest
- Plantation

Source: County of Simcoe GIS Mapping, basd on 2008 Aerial Photography

0 20 40 80 120 160 200 Meters

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PROJECT TITLE:
FUTURE SOLAR DEVELOPMENTS INC. LP10
304 PHASE NATURAL HERITAGE STUDY
1572 STORY ROAD
MIDHURST, ONTARIO

DRAWING TITLE:
Amphibian Survey Station Locations

PROJECT No.: WSL-00002250-00	DWN: EE
SCALE: AS NOTED	CHKD: DF
DATE: MAY 2012	FIG. No.: 1