

RE MIDHURST 4 SOLAR PROJECT

Natural Heritage
Evaluation of Significance

August 3, 2011

RECURRENT
ENERGY





RE Midhurst 4 ULC

Natural Heritage
Evaluation of Significance

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Project Report

August 3, 2011

RE Midhurst 4 ULC
RE Midhurst 4 Solar Project

Natural Heritage Evaluation of Significance

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1. Introduction

1.1 Project Description

RE Midhurst 4 ULC is proposing to develop operate a 6.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 20-hectare (ha) parcel of land, located about 14 km northeast of Barrie, in the Township of Oro-Medonte in Simcoe County (Figure 1.1); herein referred to as “RE Midhurst 4” or the “Project”.

1.2 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* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. Ground-mounted solar facilities with a name plate capacity greater than 10 kW are classified as Class 3 solar facilities and require an REA in accordance with Section 4 of O. Reg. 359/09.

Section 24 (1) of O. Reg. 359/09 requires proponents of Class 3 solar projects to prepare a natural heritage assessment consisting of a records review report, site investigation report and an evaluation of significance report for each natural feature identified during the records review and site investigation.

Natural Features are defined in Section 1 (1) of O. Reg. 359/09 to be all or part of

- a) an area of natural and scientific interest (ANSI) (earth science)
- b) an ANSI (life science)
- c) a coastal wetland
- d) a northern wetland
- e) a southern wetland
- f) a valleyland
- g) a wildlife habitat, or
- h) a woodland.

1.2.1 Records Review Report

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to undertake a natural heritage records review to identify “whether the project is

- a) in a natural feature
- b) within 50 m of an area of natural and scientific interest (earth science)
- c) within 120 m of a natural feature that is not an area of natural or scientific interest (earth science).” (O. Reg. 359/09, s. 25, Table).

Subsection 3 of Section 25 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). The Natural Heritage Records Review Report (Hatch Ltd., 2010a) was prepared to meet these requirements.

1.2.2 Site Investigation Report

Section 26 of the REA Regulation requires proponents of Class 3 solar projects to undertake a natural heritage site investigation for the purpose of determining

- whether the results of the analysis summarized in the (natural heritage records review) report prepared under subsection 25 (3) are correct or require correction, and identifying any required corrections
- whether any additional natural features exist, other than those that were identified in the (natural heritage records review) report prepared under subsection 25 (3)
- the boundaries, located within 120 m of the Project location, of any natural feature that was identified in the records review or the site investigation
- the distance from the Project location to the boundaries determined under clause (c).

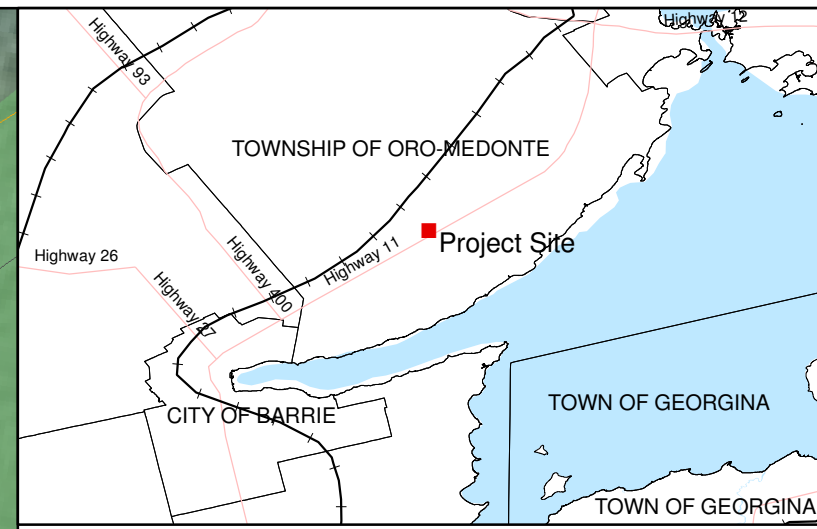
The Natural Heritage Site Investigation Report (Hatch Ltd., 2010b) was prepared to meet these requirements.

1.2.3 Evaluation of Significance Report

Section 27 of the REA Regulation requires proponents of Class 3 solar projects to undertake an evaluation of significance (EOS) for natural heritage features identified during the records review and site investigation that sets out

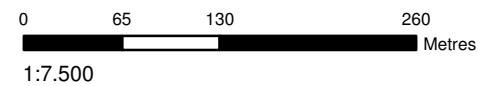
- a determination of whether the natural feature is
 - ◆ provincially significant
 - ◆ significant
 - ◆ not significant
 - ◆ not provincially significant
- a summary of the evaluation criteria or procedures used to make the determinations
- the name and qualifications of any person who applied to evaluation criteria or procedures
- the dates of the beginning and completion of this evaluation.

This Evaluation of Significance Report for the natural features identified on and within 120 m of the Project location has been prepared to meet these requirements. It has also been prepared in accordance with the Ministry of Natural Resources Natural Heritage Assessment Guide for Renewable Energy Projects (December 2010).



Legend

- Roads
 - Rail
 - Topographic Contour (5m interval)
 - Watercourse
 - ▭ Parcels
 - ▭ Wetland
 - ▭ Woodland
- Significant Natural Heritage Features**
- Stick Nest
 - ▭ Raptor Nesting Habitat
 - ▭ Significant Woodland
 - ▭ Forest Providing a High Diversity of Habitat / Woodland Supporting Amphibian Breeding Pond / Animal Movement Corridor
- Project Components**
- Connection Point With Existing Distribution Line
 - ▭ Project Location
 - ▭ Temporary Construction Laydown Area
 - ▭ 120 m from Project Location



Notes: Base data downloaded from www.geographynetwork.ca, other environmental data from LIO, UTM NAD83, Dec 2010.

Figure 1.1
 Recurrent Energy
 RE Midhurst 4
 Project Location and Significant Natural Heritage Features **HATCH**

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1.3 Evaluation of Significance Format

Section 1 of this EOS has identified the legislative requirements for an EOS under the REA Regulation and identified the reasons why an EOS is required for the Project. Section 2 provides a summary of the results of the records review and site investigation. Section 3 provides the evaluation of significance for wildlife habitat, while Section 4 provides the evaluation of significance for the woodland, and Section 5 provides the evaluation of significance for the wetland. Section 6 identifies the conclusions of the evaluation of significance, and the references are provided in Section 7.

2. Summary of Results of Records Review and Site Investigation

As stated above, natural features requiring an evaluation of significance are identified through the records review (Hatch Ltd., 2010a) and site investigation (Hatch Ltd., 2010b) required under Sections 25 and 26 of the REA Regulation, respectively. These studies have already been completed, and the results are summarized in Table 2.1. This report provides the evaluations for the features identified in Table 2.1.

Table 2.1 Natural Features on and within 120 m of the Project Location

Natural Feature	Project Location	Adjacent Lands (within 120 m)
ANSI – Earth Science	No	No
ANSI – Life Science	No	No
Valleyland	No	No
Wetland	Yes	Yes
Woodland	No	Yes
Wildlife Habitat	Yes	Yes

3. Wildlife Habitat

Several types of candidate significant wildlife habitats were identified during the site investigation:

- raptor nesting habitat
- forest providing a high diversity of habitat
- woodland amphibian breeding ponds
- animal movement corridors in the woodland and hedgerows.

3.1 Evaluation Criteria and Guidelines for Wildlife Habitat, and Determination of Significance

The criteria processes outlined in the Ministry of Natural Resources (MNR) Natural Heritage Reference Manual (NHRM) (MNR, 2010) and Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000) are used to evaluate the significance of wildlife habitat. The specific criteria used in the evaluation from these sources are discussed by habitat type below.

3.1.1 *Specialized Habitat for Wildlife*

Criteria for evaluation of specialized habitat for wildlife are identified within the Significant Wildlife Habitat Ecoregion Criteria Schedules Addendum to Significant Wildlife Habitat Technical Guide (MNR 2009).

3.1.1.1 *Raptor Nesting Habitat*

Raptor nesting habitat was identified within the woodland community more than 120 m from the Project location, however the lands surrounding the stick nest are candidate significant habitats for support of the stick nest.

Neither Section 8 nor Table Q-2 of Appendix Q of the SWHTG provides criteria for significance of raptor nesting habitat. As a result, criteria for evaluation for raptor nesting habitat is determined from Table 1.2.2 of the Significant Wildlife Habitat Ecoregion Criteria Schedules (MNR, 2009).

- Overall area of site – The woodland is greater than 10 ha, therefore this criteria is met
- Species present within habitat – A stick nest was observed and a Red-tailed Hawk was observed within the general vicinity of the nest location displaying alarm behaviour, therefore this criteria is met.

Therefore as the criteria have been met, an area of 200 m around the nest location is determined to provide significant wildlife habitat.

3.1.1.2 *Forests Providing a High Diversity of Habitat*

The criteria that were considered during this evaluation include

- provision of significant wildlife habitat – woodlands also identified as significant woodlands supporting amphibian breeding ponds and animal movement corridor
- size of site – the woodland is greater than 30 ha in size, therefore this criteria is met
- vegetation composition and diversity – as both upland and lowland habitats are contained within the woodland, this criteria is met
- cavity size, abundance and location – cavity support trees were not recorded within the woodland
- location of site – the woodland encompasses a waterbody, and therefore this criteria is met
- history of forest management – there is no known history of management associated with this woodland.

Therefore as several of the criteria have been met, this feature is determined to be significant.

3.1.1.3 *Woodlands Supporting Amphibian Breeding Ponds*

The criteria that were considered during this evaluation include

- provision of significant wildlife habitat – woodlands also identified as significant forest providing a high diversity of habitats and animal movement corridor
- degree of permanence – water is present throughout the year in most summers

- species diversity of pond/presence of rare species – species diversity of the pond is unknown and the presence of rare species is unconfirmed
- size and number of ponds – the large size of the wetland community providing suitable habitat meets the criteria of significance
- diversity of submergent and emergent vegetation – emergent and submergent aquatic vegetation was identified within the wetlands
- presence of shrubs, logs at edge of pond – shrubs and logs are present throughout the wetland
- adjacent forest habitat – forest habitat encompasses the wetland
- water quality – water quality is unknown, though presumed to be high
- level of disturbance – there would be some disturbance due to the close proximity of an agricultural field and roadway.

As several of the criteria are met, this habitat type is considered to be significant.

3.1.2 Animal Movement Corridors

The SWHTG defines animal movement corridors as “elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another”. To qualify as significant wildlife habitat, these corridors should include “habitats that links two or more wildlife habitats that are critical to the maintenance of a population of a particular species or group of species; and habitat with a key ecological function to enable wildlife habitat to move, with minimum mortality, between areas of significant wildlife habitat or core natural areas” (MNR, 2010).

Evaluation methodology of animal movement corridors is identified within Section 8.7 of the SWHTG. The criteria for significance are outlined in Table Q-4 of Appendix Q in the SWHTG, and include

- importance of areas to be linked by corridor – areas linking critical habitats/significant areas
- importance of corridor to survival of target species – corridors linking significant or critical habitat for a target species
- dimensions of corridor – most significant corridors should be at least 200 m wide
- continuity of corridor – corridor should be unbroken
- habitat and habitat structure of corridor – corridor with several layers of vegetation and other structures, such as watercourses
- species found in corridor or presumed to be using corridor – corridors with high species diversity are significant
- risk of mortality for species using corridor – corridors with low risk of road kills or adjacent to residential areas
- opportunity for protection – corridors within areas that may be protected, such as undeveloped shorelines or borders of conservation areas

- provision of other related values (such as erosion protection).

Such features were found to be present within the hedgerows and woodlands on and within 120 m of the Project location. These features are discussed separately below.

- Hedgerows – Section 8.7 of the SWHTG states that “fence and hedgerows should not be considered significant unless they provide the only animal movement corridors in the planning areas”. Given that there is a large animal movement corridor present in the local area (represented by the woodlands surrounding Shelswell’s Creek), that the hedgerows are generally restricted to a depth of a single tree width, these features are not considered to be animal movement corridors.
- Woodland – The woodland likely represents animal movement corridor for deer, birds, other mammals, and specifically reptiles and amphibians that may be breeding within the wetland community. The woodland is likely of critical importance for reptiles and amphibians as it provides a sheltered movement corridor from suitable breeding habitats to deeper water over-wintering areas. The corridor is unbroken and, in most cases, wide. The corridor contains low risk of road kills or adjacent to residential areas. The corridor also provides erosion protection for the tributary of Shelswell’s Creek. Therefore, the woodland is considered to be an animal movement corridor.

3.1.3 Overall Conclusion

Several significant wildlife habitats were identified on and within 120 m of the Project location:

- forest providing a high diversity of habitats
- woodlands supporting amphibian breeding pond
- raptor nesting habitat
- Animal Movement Corridor associated with the woodland.

3.2 Date of Beginning and Completion of Evaluation

The evaluation of wildlife habitat commenced with records reviews (i.e., search of existing sources, review of satellite imagery) in June 2009. Site visits were completed in association with this evaluation on June 18, 2009 and June 6, 2010. Notes from the site investigation as well as information gathered through the records review were compared to criteria for significance periodically from July through November of 2010. The evaluation of significance is completed with the completion of this Report in December 2010.

3.3 Name and Qualifications of Evaluator

Evaluations of wildlife habitat were completed by Sean K. Male of Hatch Ltd.

Sean K. Male, M.Sc. is a Terrestrial Ecologist specializing in assessments of terrestrial habitat, flora and fauna. Sean received his Bachelors of Science (Honours) in Biology from Queen’s University, where he completed his Honour’s thesis under Dr. Raleigh J. Robertson, studying the impacts of nestbox density in Tree Swallows (*Tachycineta bicolor*) on nest-building behaviour. He then completed a Master’s of Science degree in the Watershed Ecosystem Graduate Program at Trent

University under Dr. Erica Nol. Sean's thesis focussed on examining the impacts of a Canadian diamond mine on a population of breeding passerines. For his thesis, Sean spent two summers in the Canadian arctic studying populations of Lapland Longspurs (*Calcarius lapponicus*) around the Ekati Diamond Mine, located 300 km northeast of Yellowknife. While at Trent, Sean participated in the Northern Saw-whet Owl (*Aegolius acadicus*) Migration Banding Project at the Oliver Centre. Following his time at Trent, Sean participated in the Landscape Monitoring Program, participating in a study of the impacts of woodlot size on breeding birds.

Sean joined Hatch as a Terrestrial Ecologist in 2006. Since joining Hatch, Sean has participated in several environmental assessments, REAs and other regulatory approvals for hydro, wind and solar power developments as the terrestrial biologist specializing in field investigations identifying flora and fauna species, including species of significance. He has developed and implemented baseline monitoring and impact assessment programs for both terrestrial wildlife and plant communities, including detailed bird and bat studies for several wind power developments, including the proposed 100-MW Coldwell Wind Power Development near Marathon, Ontario, a proposed 20-MW facility near Port Dover, ON, and a proposed 110-MW wind facility in southwestern Ontario. Sean has also conducted terrestrial and wetland vegetation surveys for several proposed hydropower projects totalling over 40 MW in southern and northern Ontario and has participated in fisheries surveys for several of these projects.

4. Woodlands

4.1 Description of Natural Feature

There is one woodland identified during the site investigation. It is located within 120 m north and west of the Project location (Figure 1.1).

4.2 Evaluation Criteria and Guidelines for Woodlands, and Determination of Significance

The criteria for establishing woodland significance identified within Section 7 of the Natural Heritage Reference Manual (MNR, 2010). Many of the criteria rely on the amount of existing forest cover within a given region; the forest cover within the subwatershed of the Project location has been determined to have greater than or equal to 30% forest cover (LSRCA, 2007).

Therefore, the criteria used to assess the woodlands within 120 m of the Project location are

- woodland size (woodlands greater than 50 ha are significant)
- ecological function
 - ◆ woodland interior (woodlands with greater than 8 ha of forest interior)
 - ◆ proximity to other woodlands or other habitats (woodlands within 30 m of a significant natural feature receiving ecological benefit from the woodland)
 - ◆ linkages (woodlands providing a connecting link between two other significant features)
 - ◆ water protection (Woodlands within 50 m of water features)
 - ◆ woodland diversity (a high native diversity through a combination of composition and terrain)

- uncommon characteristics (i.e., old-growth, rare vegetation communities)
- economic and social functional values (high economic or special services value).

Characteristics of this woodland in relation to the previously identified criteria are discussed below.

- The woodland is 43.1 ha in size.
- The woodland has 9.1 ha of interior forest habitat.
- This woodland encompasses the Evaluated Non-Provincially Significant Shelswell's Creek Wetland Complex and a tributary of Shelswell's Creek.
- The woodland is located within 120 m of a significant natural heritage feature, amphibian breeding ponds (see Section 3 above)
- The woodland does not provide a linkage between significant features.
- The woodland does have variation in composition or terrain.
- The woodland does not have uncommon characteristics.
- The woodland is not known to provide significant ecological or social benefit.

Therefore, this woodland is considered significant as it meets the requirements for size, interior habitat and proximity to watercourses.

4.3 Date of Beginning and Completion of Evaluation

The evaluation of woodlands commenced with records reviews (i.e., search of existing sources, review of satellite imagery) in June 2009. Site visits were completed in association with this evaluation on June 18, 2009 and June 6, 2010. Notes from the site investigation as well as information gathered through the records review were compared to criteria for significance periodically from July through November of 2010. The evaluation of significance is completed with the completion of this Report in December 2010.

4.4 Name and Qualifications of Evaluator

Evaluations of woodlands were completed by Sean K. Male of Hatch Ltd. His qualifications are provided within Section 3.4.

5. Conclusions

Results of the evaluation of significance are summarized in Table 5.1. Based on the evaluation of significance outlined above, there are significant woodlands present within 120 m of the Project location, and significant wildlife habitat on and within 120 m of Project components. The locations of these features are shown in Figure 1.1.

An environmental impact study conducted according to the requirements of Section 38(2) of O.Reg. 359/09 will be required in order to construct Project components within 120 m of these significant natural features.

Table 5.1 Significant Natural Features on and within 120 m of the Project Location

Natural Feature		Project Location	Adjacent Lands (within 120 m)
SIGNIFICANT	Woodland	No	Yes
	Wildlife Habitat	Yes	Yes
	Valleyland	No	No
PROVINCIALY SIGNIFICANT	Wetland	No	No
	Earth Science ANSI	No	No
	Life Science ANSI	No	No

6. References

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