RE SMITHS FALLS 5 SOLAR PROJECT

Natural Heritage
Evaluation of Significance

April 15, 2011

RECURRENT ENERGY

RE Smiths Falls 5 ULC

Natural Heritage Evaluation of Significance

RE Smiths Falls 5 Solar Project

H334680-0000-07-124-0060
Rev. 1
April 15, 2011

Project Report

April 15, 2011

RE Smiths Falls 5 ULC
RE Smiths Falls 5 Solar Project

Natural Heritage Evaluation of Significance

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1. Introduction

1.1 Project Description

RE Smiths Falls 5 ULC is proposing to develop and operate a 10-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land, located approximately 8 km west northwest of Smiths Falls in the Township of Drummond/North Elmsley in Lanark County (Figure 1.1); herein referred to as "RE Smiths Falls 5" 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 nameplate capacity greater than 10 kilowatts (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 undertake 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 2 of Section 30 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

a) 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

b) whether any additional natural features exist, other than those that were identified in the (natural heritage records review) report prepared under Subsection 30(2)

c) 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

d) the distance from the project location to the boundaries determined under Clause (c).

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

1.2.3 Evaluation of Significance Report

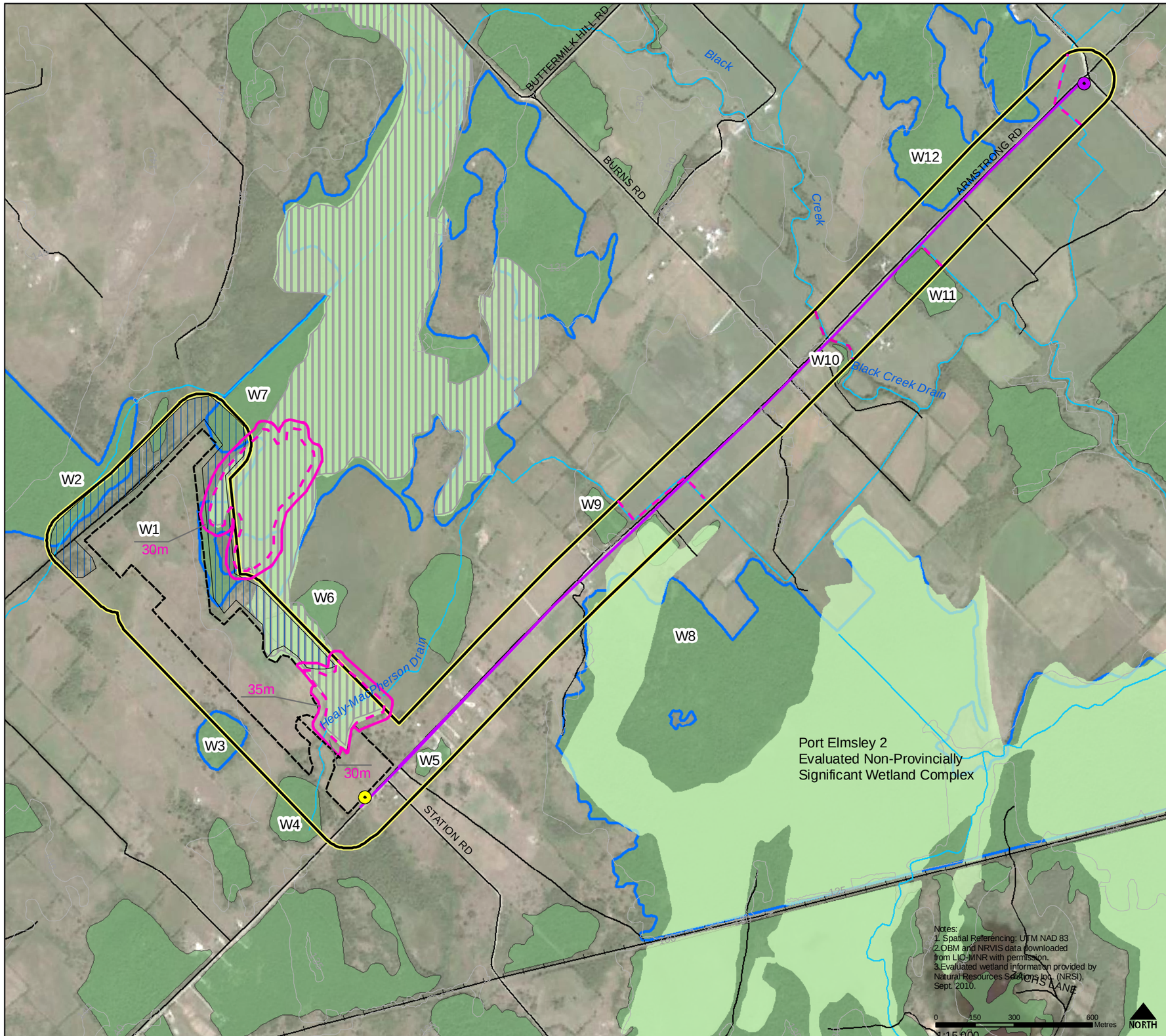
Section 27 of the REA Regulation requires proponents of Class 3 solar projects to undertake an evaluation of significance for natural heritage features identified during the records review and site investigation that sets out

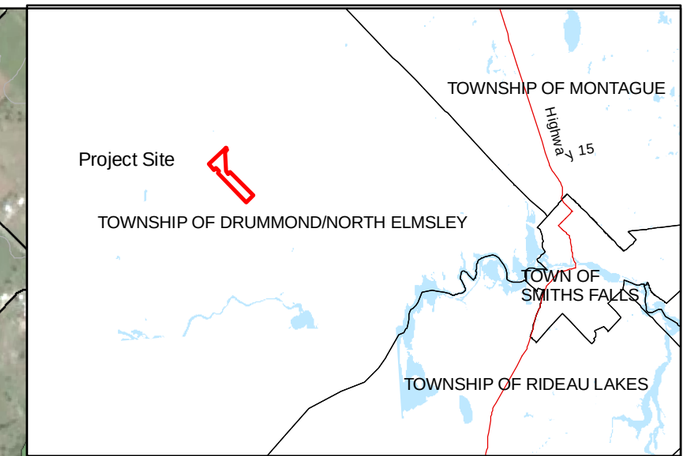
- a determination of whether the natural feature is
  - provincially significant
  - significant
  - not significant
  - not provincially significant
- a summary of the evaluation criteria or procedures used to make the determinations
- the name and qualifications of any person who applied to evaluation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

This Evaluation of Significance (EOS) Report for the natural features identified within 120 m of the Project has been prepared to meet these requirements.

1.3 Evaluation of Significance Report 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 discusses the evaluation of significance for the





Legend

- Road
- Railway
- Topographic Contour (5m Interval)
- Watercourse
- Wetland
- Woodland

W1 Woodland Identifier

Siginificant Natural Heritage Features

- Provincially Significant Wetland
- Significant Woodland

Significant Wildlife Habitat

- Northern Ribbonsnake Habitat
- Animal Movement Corridor
- Milksnake Habitat

Project Components

- Connection Point With Existing Distribution Line
- Potential Point of Common Coupling With Feeder Line
- Potential Upgraded Existing Distribution Line
- Project Location
- 120m from Project Location
- Setback from Northern Ribbonsnake Habitat

Figure 1.1
Recurrent Energy
RE Smiths Falls 5
Project Components and Significant Natural Heritage Features

HATCH™

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wetland, and Section 5 provides the evaluation of significance for the woodlands. 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)	Notes
ANSI – Earth Science	No	No	
ANSI – Life Science	No	No	
Valleyland	No	No	
Wetland	No	Yes	There is a wetland within 120 m of the Project location.
Woodland	Yes	Yes	There are woodlands on and within 120 m of the Project location.
Wildlife Habitat	Yes	Yes	Several candidate significant wildlife habitats were identified on and within 120 m of the Project location.

3. Wildlife Habitat

3.1 Description of Natural Feature

Six types of wildlife habitat were identified during the site investigation that have the potential for significance. These included

- raptor winter feeding and roosting
- waterfowl nesting
- woodlands supporting amphibian breeding habitat
- habitat for species of conservation concern, including Milksnake, Northern Ribbonsnake, Baltimore Oriole, and Eastern Kingbird
- animal movement corridors of and the woodlands within 120 m of the Project location.

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

The criteria and 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.

3.2.1 Seasonal Concentration Areas

Criteria for evaluation of seasonal concentration areas are identified within Table Q-1 of Appendix Q of the SWHTG. The criteria that were considered during this evaluation are discussed with respect of the various habitat types below.

3.2.1.1 Raptor Winter Feeding and Roosting Areas

The criteria for raptor winter feeding and roosting areas include the following:

- Relative importance of the site – Grassland communities are common within this portion of the province, and therefore this site is not of relative importance.
- Presence of species of conservation concern/Species diversity/abundance – Raptor species that may use the winter are currently unknown.
- Size of site – The size of the grassland is greater than 20 ha, which exceeds the criteria.
- Level of disturbance – There are nearby roadways, residential properties, and agricultural operations within close proximity of the area, therefore disturbance is moderate.
- Location of site – As previously discussed, grasslands are numerous within the area.
- Quality of habitat – Though abundance of prey is unknown, habitat is believed to be reflective of the quality of habitat available within the region.
- Historical Use – Historical use of the feature is unknown.

Based on the abundance of this habitat type within the region, lands on and within 120 m of the Project location are not considered to be a significant raptor winter feeding and roosting area.

3.2.1.2 Waterfowl Nesting

The criteria for waterfowl nesting areas include the following:

- Relative importance of the site to local waterfowl populations – The small size of the pond and low evidence of use indicates this feature is not of relative importance to waterfowl populations.
- Presence of species of conservation concern – No waterfowl species of conservation concern were noted within the nesting area.
- Species diversity/abundance – Only one Blue-winged Teal male was noted within the nesting area.
- Size of area – The size of the pond is small (<0.05 ha).

- Quality of habitat – The nature of the pond as a man-made feature has resulted in the creation of a relatively poor quality habitat when compared with naturally developed wetland communities within the greater area.
- Location of site – Safe movement from the nesting area to the water body is available.
- Nest predation – Levels of nest predation are unknown.
- Level of disturbance – There are nearby roadways, residential properties, and agricultural operations within close proximity of the area, therefore disturbance is moderate.

Based on the criteria above, this feature is determined to not be considered of significance. Primarily, the poor quality of habitat and demonstrated low use of the features contributed to this determination.

3.2.2 Specialized Habitat for Wildlife

Criteria for evaluation of specialized habitat for wildlife are identified within Table Q-2 of Appendix Q of the SWHTG. The criteria that were considered during this evaluation are discussed with respect of the various habitat types below.

3.2.2.1 Woodland Supporting Amphibian Breeding Ponds

The criteria for woodlands supporting amphibian breeding ponds include the following:

- Provision of significant wildlife habitats – No other significant wildlife habitat features were identified in association with the potential breeding habitat, though significant wildlife habitat features are associated with the nearby woodlands.
- Degree of permanence – The pond contains permanent water, therefore this criteria is met.
- Species diversity of pond – Only Green Frogs were noted during the site investigation, therefore diversity is considered to be poor.
- Presence of rare species – No rare amphibian species were recorded during the site investigations.
- Size and number of ponds – The pond is less than 0.05 ha, and only one pond was noted.
- Diversity of submergent and emergent vegetation – A diversity of submergent and emergent vegetation was not observed within the pond.
- Presence of shrubs, logs at edge of pond – Shrubs and logs are present along the edge of the pond.
- Adjacent forest habitat – The pond is located in adjacent to a small treed area, and within 125 m of a larger woodland.
- Water quality – Water quality is presumed to be moderate given that no pollution sources have been identified.
- Level of disturbance – Level of disturbance between the wetland and woodlands is moderate, given existing agricultural operations between these features.

As a result, this feature is not considered to be of significance given the low species diversity present within the pond.

3.2.3 *Habitat for Species of Conservation Concern*

Criteria for evaluation habitat of conservation concern are identified within Table Q-3 of Appendix Q of the SWHTG. The criteria that were considered during this evaluation include

- degree of rarity of species found at site
- documented significant decline in a species and/or its critical habitat
- species whose range is solely or primarily found in Ontario
- condition of existing habitat at site (i.e., sites with minimal disturbance, non-invasive sp., etc)
- size of species population at site
- size and location of habitat
- potential for long-term protection of habitat
- evidence of use of the habitat.

The species of conservation concern with potential habitat on the Project location are discussed further in relation to these criteria below.

- Woodland Edge/Hedgerow Species – Confirmed breeding habitat for Baltimore Oriole and Eastern Kingbird was noted for these species within the woodland edges of the Project location. Neither of these species are considered to be rare species, however both are identified as undergoing declines within the province (Ontario Partners in Flight, 2005). Neither species range is solely or primarily found within Ontario. Habitat conditions within the woodland edges were considered to be of high quality (tall trees in proximity to suitable foraging habitat). A single breeding pair of each species was confirmed as occurring on or within 120 m of the Project location during the site investigation. Both Baltimore Orioles and Eastern Kingbird are described as exhibiting strong fidelity to breeding sites. Baltimore Orioles home ranges vary from 0.6 to 1.5 ha, with average distance between breeding locations in a given year determined to be 100 m (Rising and Flood, 1998). Eastern Kingbird home ranges average 8 ha, though no information on year-to-year separation of breeding locations is available (Murphy, 1996). The majority of the suitable habitat for these species is located off of the Project location. For areas that are disturbed, suitable alternate breeding habitat is found within the home ranges adjacent to where these individuals were observed. The site is located on private land, and therefore, long-term protection cannot be assured. Given the small size of populations on or within 120 m of the Project location and the abundance of suitable breeding habitat within the region, this habitat type is not considered to meet the criteria for significance.
- Northern Ribbonsnake – Potential habitat for Northern Ribbonsnake may occur within the wetland community within 120 m east of the Project location, as well as the waterbodies which cross beneath the proposed upgraded existing distribution line. Though Ribbonsnake were considered during site investigations, they were not detected. However, as snake species are difficult to detect, presence is assumed though the size of the population is uncertain. These

feature are located on private land, and therefore, long-term protection cannot be assured. Significant declines have been noted in Northern Ribbonsnake, given their designation as Special Concern on the ESA. Northern Ribbonsnake occur beyond the provincial boundary. Given that the species is listed on the Species at Risk in Ontario list, though use is unconfirmed, these areas area will be treated as significant wildlife habitat and carried forward in the Environmental Impact Study.

- Milksnake – Given that Milksnake are habitat generalists, the entire Project location and lands within 120 m of the Project location were considered to be suitable habitat for Milksnake. As Milksnake are difficult to detect, use of the area was unconfirmed, and the size of the population is uncertain. The site is located on private land, and therefore, long-term protection cannot be assured, though lands located on the Project location will be protected by RE Smiths Falls 5 ULC during the life of the Project. Milksnake are identified as a species of Special Concern on the ESA, and therefore, though use is unconfirmed, the area is treated as significant wildlife habitat and carried forward in the Environmental Impact Study.

3.2.4 Animal Movement Corridors

Potential animal movement corridors were identified in the woodlands within 120 m north and east of the Project location.

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
- importance of corridor to survival of target species
- dimensions of corridor
- continuity of corridor
- habitat and habitat structure of corridor
- species found in corridor or presumed to be using corridor
- risk of mortality for species using corridor
- opportunity for protection
- provision of other related values (such as erosion protection).

Woodlands within 120 m east and north of the Project location – This woodland likely provides animal movement corridors for mammals (such as deer and coyote), birds (such as Blue Jays, Cooper's Hawks, American Redstarts), and reptiles and amphibians (such as Gartersnakes) within the local area. Risk of mortality within this corridor is moderate given that several ATV/snowmobile trails are present within the woodland. Further, there is no opportunity for protection associated with this corridor given that the areas are all located on private land. These woodlands would provide linkages from the Black Creek PSW to significant woodlands, the non-provincially significant Port Elmsley 2 Wetland, and foraging areas within the agricultural lands. As a result of the connectivity

provided by the woodland to other features, they are considered to be significant animal movement corridors on or within 120 m of the Project location.

3.2.5 Overall Evaluation

Significant wildlife habitat was identified on and adjacent to the Project location in the following area:

- The woodlands north and east of the Project location are considered to be a significant animal movement corridor.
- All lands on and within 120 m of the Project location are considered to be significant general use habitat, though unconfirmed, for Milksnake.
- The wetland located to the east of the Project location, as well as waterbodies crossed by the proposed upgraded distribution line are considered to be significant general use habitat, though unconfirmed, for Northern Ribbonsnake.

3.3 Date of Beginning and Completion of Evaluation

The evaluation of wildlife habitat commenced with records reviews in June 2009 and was finalized with the completion of this report in November 2010. A site visit was completed in association with this evaluation on May 16, 2010.

3.4 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 (*Aegoius 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 Ltd. as a Terrestrial Ecologist in 2006. Since joining Hatch Ltd., 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, Ontario, 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

Section 1 of O. Reg. 359/09 defines "woodland" as land

(a) that is south and east of the Canadian Shield

(b) that has per hectare, at least

  (i) 1000 trees of any size

  (ii) 750 trees measuring over 5 cm in diameter

  (iii) 500 trees measuring over 12 cm in diameter

  (iv) 250 trees measuring over 20 cm in diameter

(c) that does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees.

4.2 Evaluation Criteria and Guidelines for Woodlands

The EOS was completed in consideration of the Evaluation Approach outlined in Section 7 of the NHRM (MNR, 2010a). The evaluation criteria recommended in the NHRM to assess significance of a woodland are as follows:

- Woodlots greater than 50 ha in size in this region are considered significant. This size recommendation is for this area where woodlots represent approximately 30% to 60% of the land cover.
- Ecological Functions
  - Woodland Interior – Woodlands with 8 ha or more of interior habitat.
  - Proximity to Other Woodlands or Other Habitats – Woodlands within 30 m of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland.
  - Linkages – Woodlands providing a connecting link between two other significant features within 120 m of the woodland.
  - Water Protection – Woodlands located within a sensitive or threatened watershed or within 50 m of various water features (such as watercourses or sensitive recharge areas).
  - Woodland Diversity – Woodlands with i) a naturally-occurring composition of forest species that have declined, or ii) with a high native diversity through a combination of composition and terrain.
- Uncommon Characteristics – Woodlands with i) a unique species composition or site; ii) a vegetation community with a provincial ranking of S1, S2, or S3; iii) important habitat or a rare,

uncommon, or restricted woodland plant species; or iv) characteristics of older woodlands or woodlands with larger tree size structure in native species.

- Economic and Social Functional Values – Woodlands with i) a high productivity in terms of economic value products together with continuous native natural attributes; ii) a high value in special services, such as air quality improvement or recreation at a sustainable level that is compatible with long-term retention; or iii) important identified appreciation, education, cultural or historical value.

Many of the evaluation criteria also have minimum size requirements associated with them. In this area, this is established at 1 ha.

4.3 Date of Beginning and Completion of Evaluation

The evaluation of woodlands commenced with records reviews in June 2009 and was finalized with the completion of this report in November 2010. A site visit was completed in association with this evaluation on May 16, 2010.

4.4 Determination of Significance

There are several woodlands identified on and within 120 m of the Project location and the distribution line that may potentially require upgrading. These woodlands, shown in Figure 1.1, are evaluated individually below. Section 4.4.1 assesses woodlands on and within 120 m of the Project location and Section 4.4.2 assesses woodlands within 120 m of the potentially upgraded distribution line. Woodland sizes were calculated using the MNR Land Information Ontario wooded area layer in ArcMap 9.3.

4.4.1 Woodlands On and Within 120 m of the Project Location

4.4.1.1 Woodland 1

Woodland size was estimated to be 1.0 ha. As a result, it does not meet the minimum size requirement for the various criteria.

4.4.1.2 Woodland 2

Woodland size was estimated to be 44.5 ha in size with a forest interior of approximately 11.93 ha. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse, the woodland does contain a watercourse, and does not provide linkage habitat.

Therefore, this woodland is considered to be significant as it meets the criteria for forest interior habitat and proximity to a watercourse.

4.4.1.3 Woodland 3

Woodland size was estimated to be 2.9 ha with no forest interior habitat. Though not identified during the site investigation as an old growth community, the MNR considers this woodland to be significant for old growth forest characteristics (MNR, 2010b). As a result, this feature is considered to be significant.

4.4.1.4 Woodland 4

Woodland size was estimated to be 4.05 ha with no forest interior habitat. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse, the woodland is not proximal to other water or natural features, and does not provide linkage habitat.

Therefore, this woodland is not considered to be significant as it meets none of the criteria of significance.

4.4.1.5 Woodland 5

Woodland size was estimated to be 1.1 ha with no forest interior habitat. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse, the woodland is not proximal to other water or natural features, and does not provide linkage habitat.

Therefore, this woodland is not considered to be significant as it meets none of the criteria of significance.

4.4.1.6 Woodland 6

Woodland size was estimated to be 6.31 ha with no forest interior habitat. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse, the woodland is not proximal to other water or natural features, and does not provide linkage habitat.

Therefore, this woodland is not considered to be significant as it meets none of the criteria of significance.

4.4.1.7 Woodland 7

Woodland size was estimated to be 135.4 ha with a forest interior habitat of 46.13 ha. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse.

The woodland is in proximity to the Healy–MacPherson Drain and the Black Creek Drain. The woodland also provides animal corridor movement.

The MNR considers this woodland significant for size and forest interior (MNR, 2010b).

Therefore, this woodland is considered to be significant as it meets the criteria of significance for forest size, interior habitat size, proximity to watercourses and linkages.

4.4.2 Woodlands Within 120 m of the Potentially Upgraded Distribution Line

There are also several wooded areas located along the existing distribution line route that may potentially require upgrading. These wooded areas are discussed individually below.

4.4.2.1 Woodland 8

Woodland size was estimated to be 222 ha with a forest interior of 128.28 ha. The vegetation community was not considered to be uncommon or to contain economic or social functional values. The woodland community was not considered to be diverse. The woodland is in proximity to a

watercourse and the Port Elmsley 2 Evaluated Non-Provincially Significant Wetland (PSW), and it does provide linkage habitat.

The MNR considers this woodland significant for size, forest interior and linkage characteristics.

Therefore, this woodland is considered to be significant as it meets the criteria of significance for forest size, interior habitat, proximity to a watercourse and linkage habitat.

4.4.2.2 Woodland 9

Woodland size was estimated to be 1.9 ha with no forest interior habitat. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse, the woodland is not proximal to other water or natural features, and does not provide linkage habitat.

Therefore, this woodland is not considered to be significant as it meets none of the criteria of significance.

4.4.2.3 Woodland 10

Woodland size was estimated to be less than 1.0 ha with no forest interior habitat. As a result, it does not meet the minimum size requirement for the various criteria.

4.4.2.4 Woodland 11

Woodland size was estimated to be 3.6 ha with no forest interior habitat. The vegetation community was not considered to be uncommon and is not known to contain economic or social functional values. The woodland community was not considered to be diverse, the woodland is not proximal to other water or natural features, and does not provide linkage habitat.

Therefore, this woodland is not considered to be significant as it meets none of the criteria of significance.

4.4.2.5 Woodland 12

Woodland size was estimated to be 41.9 ha with a forest interior of approximately 5.02 ha.

The MNR considers this woodland to be significant as it contains and supports old growth forest characteristics and is located in proximity to a significant natural feature.

Therefore, this woodland is considered to be significant as it meets the criteria for old growth forest characteristics.

4.5 Port Elmsley 2 Wetland

4.5.1 Description of Natural Feature

The Port Elmsley 2 Evaluated Non-provincially Significant Wetland Complex is located within 120 m south of distribution line portion of the Project location.

4.5.2 Evaluation Criteria and Guidelines for Wetlands

The Ontario Wetland Evaluation System (OWES; see http://www.mnr.gov.on.ca/en/Business/Biodiversity/2ColumnSubPage/STEL02_176756.html) was developed by the MNR to determine the significance of wetlands.

4.5.3 Date of Beginning and Completion of Evaluation

The date of the beginning and completion of the evaluation are unknown.

4.5.4 Determination of Significance

The Port Elmsley 2 wetland is recognized as an Evaluated Non-Provincially Significant Wetland Complex.

4.5.5 Name and Qualifications of Evaluator

The names and qualifications of the evaluator are unknown.

4.6 Wetland Within 120 m East of the Project Location

The evaluation of the wetland within 120 m east of the Project location was completed separately by Natural Resources Solutions Inc. (NRSI). The information relating to this wetland evaluation is provided in Appendix A. The results of the wetland evaluation concluded that this feature should be complexed with the Black Creek Provincially Significant Wetland, and is therefore considered to be a provincially significant wetland complex.

5. Conclusions

Results of the evaluation of significance are summarized in Table 5.1. Based on the evaluation of significance outlined above, there are several significant woodlands, a provincially significant wetland, and significant wildlife habitat features present on and within 120 m of the Project location. 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)	Notes
SIGNIFICANT	Woodland	Yes	Yes	Woodlands 2, 3, 7, 8, and 12 (see Figure 1.1) are significant woodlands
	Wildlife Habitat	Yes	Yes	Habitat for species of conservation concern and animal movement corridors were identified on and within 120 m of the Project location
	Valleyland	No	No	
PROVINCIALLY SIGNIFICANT	Wetland	No	Yes	Wetlands east of the Project location were identified as
	Earth Science ANSI	No	No	
	Life Science ANSI	No	No	

6. References

Eastern Ontario Natural Heritage Working Group. 2003. Woodland Valuation System. Version 2.0. Available on-line at http://woodlandvaluation.eomf.on.ca/index.htm.

Hatch Ltd. 2010a. RE Smiths Falls 5 Solar Project – Natural Heritage Records Review Report. Prepared for RE Smiths Falls 5 ULC. July 2010.

Hatch Ltd. 2010b. RE Smiths Falls 5 Solar Project – Natural Heritage Site Investigations Report. Prepared for RE Smiths Falls 5 ULC. July 2010.

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

MNR. 2000. Significant Wildlife Habitat Technical Guide. 151 p.

Ontario Partners in Flight. 2005. Ontario Landbird Conservation Plan: Lower Great Lakes/ St. Lawrence Plain (North American Bird Conservation Region 13), *Priorities, Objectives and Recommended Actions*. Environment Canada/Ministry of Natural Resources.

Appendix A

Natural Resource Solutions Inc.
Wetland Evaluations

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

1163

November 16, 2010

Mr. Sean Male
Hatch Energy
4342 Queen Street, Suite 500,
Niagara Falls, ON L2E 7J7

Dear Mr. Male:

Re: RE Smiths Falls 5 Solar Project Wetland Evaluations

On behalf of Natural Resource Solutions Inc., I am pleased to provide the following which documents the work completed relative to wetland evaluation at the above noted solar project being proposed by RE Smiths Falls 5 ULC. This letter incorporates revisions that result from the review comments provided by the Ontario Ministry of Natural Resources staff during the conference call on November 8, 2010.

The objectives of this assignment were to provide project-specific assessments and possibly evaluations of wetlands found on or within 120m of proposed project components as per Renewable Energy Approval Regulation 359/09. Review of Land Information Ontario (LIO) and aerial photography indicated that potential wetlands are found immediately to the east of the site (within 120m), and that these wetlands are part of a fairly large unevaluated wetland that extends to the northeast. The Provincially Significant Black Creek Wetland Complex is found to the northeast of this area, and the Non- Provincially Significant Port Elmsley 2 Wetland is found to the south of the project site.

Study Approach
This work included the following:

- Collection and review of background information on wetland-related natural features in the vicinity of the project site.

- Identification of all wetlands, evaluated and non-evaluated, within approximately 750m of the subject wetlands to assess the extent of wetland mapping that would be required to address whether wetlands in the vicinity of the project site would be complexed with other wetlands (i.e. to identify whether a ‘string’ of unevaluated wetlands occur between the subject wetlands and the nearest evaluated wetland)

- Conduct field surveys of subject wetlands on the project site as well as on neighbouring lands. This included mapping of wetland vegetation communities based on Ontario Wetland Evaluation System (OWES), as well as Ecological Land Classification (ELC), and recording all species of flora and fauna within the wetlands.

The above tasks feed into a determination of whether the wetlands on or within 120m of the project site are a portion of the existing Provincially Significant Wetland (PSW), are of insufficient size or ecological/hydrologic character to be considered stand alone wetlands under OWES, and/or are not part of the wetland complex when reviewed under the OWES complexing criteria.

Summary

Wetland communities are found to overlap a small portion of the eastern boundary of the project site. These wetlands are contiguous with the fairly large cluster of wetland communities (approximately 112ha) found to the northeast of the project site. The extent of the areas that were assessed was determined based on delineating the catchment basin of the unevaluated wetlands. Based on this delineation, all wetlands were described under the OWES as well as using ELC based on field surveys completed on August 10 and 11, 2010. Copies of field data forms are also appended that summarize field information including weather and time of field surveys. The wetland evaluation also includes results of field surveys undertaken by staff of Hatch on May 16, 2010. As part of the Records Review completed by Hatch, a number of Species at Risk were recorded from the vicinity. These species included ribbonsnake (*Thamnophis sauritus*), blanding's turtle (*Emydoidea blandingii*), eastern musk turtle (*Sternotherus odoratus*), northern map turtle (*Graptemys geographica*), and snapping turtle (*Chelydra serpentina*). No significant species of flora or fauna were observed during the field survey.

Based on the November 8, 2010 conference call with staff of the OMNR, it was determined that the wetlands are to be added to the Black Creek PSW. The boundaries of the field-mapped wetlands do not correspond to wetland areas shown on the mapping provided in LIO.

Portions of two wetland communities are found on the project site. These areas are described as:

hS_3 [ELC: Silver Maple Mineral Deciduous Swamp Type (SWDM3-2)]
tsS_6 [ELC: Mixed Willow Mineral Deciduous Thicket Swamp Type (SWTM3-6)]

Portions of a third community type are found within 120m of the eastern property boundary:

hS_7 [ELC: White Cedar-Hardwood Mineral Mixed Swamp Type (SWMM1-1)]

The wetland communities that comprise the remainder of the wetlands are described as:

lsS_1 [ELC: White Cedar-Hardwood Mineral Mixed Swamp Type (SWMM1-1)]
hS_2 [ELC: Ash Mineral Deciduous Swamp Ecosite (SWDM2)]
tsS_4 [ELC: Mixed Willow Mineral Deciduous Thicket Swamp Type (SWTM3-6)]
hS_5 [ELC: Green Ash Mineral Deciduous Swamp Type (SWDM2-2)]

I trust that this information is adequate. Please contact me if you have any questions.

Yours sincerely,
Natural Resource Solutions Inc.

David Stephenson, M.Sc.,
Senior Biologist

Wetland Vegetation Communities:

lsS_1 [ELC: White Cedar-Hardwood Mineral Mixed Swamp Type (SWMM1-1)]
ts: *Filipendula ulmaria ssp. Ulmaria, Salix nigra, Salix lucida, Rhamnus cathartica*
ls*: *Filipendula ulmaria ssp. Ulmaria, Thuja occidentalis, Salix eriocephala*
gc: *Lythrum salicaria, Scirpus cyperinus, Bidens tripartita, Cicuta virosa, Apocynum androsaemifolium ssp. Androsaemifolium, Onoclea sensibilis*
ne*: Phalaris arundinacea, Carex lupulina*

hS_2 [ELC: Ash Mineral Deciduous Swamp Ecosite (SWDM2)]
h*: *Fraxinus pennsylvanica, Fraxinus nigra, Ulmus americana*
gc: *Lycopus uniflorus, Onoclea sensibilis, Impatiens capensis, Eupatorium maculatum ssp. Maculatum, Lythrum salicaria, Cicuta virosa, Chelone glabra*
ne*: Phalaris arundinacea, Carex lupulina, Carex bebbii, Leersia oryzoides*

hS_3 [ELC: Silver Maple Mineral Deciduous Swamp Type (SWDM3-2)]
h*: *Acer saccharinum, Fraxinus pennsylvanica, Fraxinus nigra*
gc*: Bidens tripartite, Impatiens capensis, Laportea canadensis, Onoclea sensibilis, Equisetum arvense, Cardamine concatenate*

tsS_4 [ELC: Mixed Willow Mineral Deciduous Thicket Swamp Type (SWTM3-6)]
ts*: *Salix eriocephala, Salix nigra, Acer saccharinum*
ls: *Filipendula ulmaria ssp. Ulmaria, Cornus stolonifera*
gc: *Lythrum salicaria, Eupatorium perfoliatum, Equisetum palustre, Eupatorium maculatum ssp. Maculatum*
ne*: Phalaris arundinacea*

hS_5 [ELC: Green Ash Mineral Deciduous Swamp Type (SWDM2-2)]
h*: *Fraxinus pennsylvanica, Acer saccharinum, Populus tremuloides, Ulmus americana*
ts*: Acer saccharinum, Fraxinus pennsylvanica, Salix sp., Rhamnus cathartica*
ls: Salix sp., Cornus stolonifera, Ulmus americana
gc*: Lythrum salicaria, Impatiens capensis, Symphyotrichum lateriflorum var. lateriflorum, Eupatorium maculatum ssp. Maculatum*

tsS_6 [ELC: Mixed Willow Mineral Deciduous Thicket Swamp Type (SWTM3-6)]
ts*: *Salix fragilis, Salix eriocephala, Populus tremuloides, Thuja occidentalis*
ls: *Salix exigua, Filipendula ulmaria ssp. Ulmaria, Cornus stolonifera, Salix lucida, Thuja occidentalis*

hS_7 [ELC: White Cedar-Hardwood Mineral Mixed Swamp Type (SWMM1-1)]
h*: *Populus tremuloides, Ulmus americana, Populus grandidentata*
c: *Thuja occidentalis*
ts*: Rhamnus cathartica, Fraxinus pennsylvanica, Vitis riparia*
gc: *Dryopteris carthusiana, Cystopteris bulbifera, Onoclea sensibilis, Toxicodendron radicans ssp. Negundo, Lycopus uniflorus, Laportea canadensis*

* dominant form

Project Team:

Member	Qualifications	Role
David Stephenson, MSc	Certified Wetland Evaluator Certified ELC Certified Arborist	Project Management Field Survey Data Analysis, Evaluation, Reporting
Jessica Grealey, BSc	Certified ELC	Field Survey Data Analysis, Evaluation
Cheryl Ann Paquet, FWT	Certified Wetland Evaluator	Field Survey Data Analysis, Evaluation
Shawn MacDonald, BSc	GIS Mapping	Mapping

Field Data Forms

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163
Observer(s): CAP, JEG
Date: AUG 11/2010 **Time (24h):** 8:30
Field #: W1 **Weather:** Precipitation: NONE Temp (°C): 30
Map Code: hS. Wind Speed & Direction: 1-W Cloud %: 5
Wetland Type: S **Site Type:** R **Dominant Form:** hs
% Open Water: 0 **ELC Code:** SWTM3-6
Photos: 330

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	5% salix eraguia, trembling aspen, tamarack, green ash
c	10% white cedar
dc,dh,ds	10% deciduous, white cedar, white birch
ts	30% meadowsweet, salix nigra, shining willow, common buckthorn
ls	50% meadowsweet, white cedar, salix eriocephala
gc	95% purple loosestrife, beaver moss, water hemlock, spreading dogbane, sensitive fern, wool grass
ne	80% reed canary grass, carex lupulina
be	5% water plantain
re	10% common cattail, dark green bulrush
ff	0
f	5% nymphoides cordata
su	0
m	2% moss sp.

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
	WHITE-FACED MEADOW HAWK

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163
Observer(s): JEG, CAP
Date: AUG 11/2010 **Time (24h):** 8:50
Field #: W2 **Weather:** Precipitation: none Temp (°C): 30
Map Code: hS2 Wind Speed & Direction: 2-W Cloud %: 5
Wetland Type: S **Site Type:** R **Dominant Form:** h
% Open Water: 0 **ELC Code:** SWDM2
Photos: 333

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	35% green ash, black ash, white elm
c	0
dc,dh,ds	5% green ash
ts	2% green ash
ls	5% red currant
gc	90% water horehound, jewelweed, joe pye weed, purple loosestrife, sensitive fern, water hemlock, turtle head
ne	75% reed canary grass, carex lupulina, broad sedge, rice cut grass
be	0
re	2% dark green bulrush
ff	0
f	0
su	0
m	0

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163
Observer(s): JEG, CAP
Date: AUG 11/2010 **Time (24h):** 9:10
Field #: W3 **Weather:** Precipitation: none Temp (°C): 30
Map Code: hS3 Wind Speed & Direction: 2-W Cloud %: 5
Wetland Type: S **Site Type:** R **Dominant Form:** h
% Open Water: 10-15% **ELC Code:** SWDM8-2
Photos: 334, 335

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h) 90%	silver maple
c 0	
dc,dh,ds 5%	deciduous sp.
ts 10%	silver maple
ls 5%	silver maple, white elm, white cedar, buckthorn, swamp red currant
(gc) 30%	bramble-thick, jewelweed, wood nettle, sensitive fern
ne 10%	bladder sedge, sedge sp., field horsetail, tall bur-reed
be 0	
re 0	
ff 0	
f 0	
su 0	
m 5%	moss sp.

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163
Observer(s): CAP, JEG
Date: AUG 11/2010 **Time (24h):** 9:30
Field #: W4 **Weather:** Precipitation: none Temp (°C): 30
Map Code: tsS4 Wind Speed & Direction: 2-W Cloud %: 5
Wetland Type: S **Site Type:** R **Dominant Form:** ts
% Open Water: **ELC Code:** SWTM3-6
Photos: 336, 337

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h 5%	white elm, green ash, trembling aspen, silver maple
c 2%	white cedar
dc,dh,ds 1%	deciduous sp.
(ts) 95%	salix eriocephala, salix nigra, silver maple
(ls) 80%	meadowsweet, red osier dogwood
(gc) 80%	purple loosestrife, bracken, marsh horsetail, joe pye weed
(ne) 50%	reed canary grass
be 0	
re 20%	common cattail, arrow arum, pickerel
ff 0	
f 2%	nymphoides cordata
su 0	
m 0	

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163

Observer(s): CAD, JEG

Date: AUG 11, 2010 **Time (24h):** 10:45

Field #: W5 **Weather:** Precipitation: none Temp (°C): 30

Map Code: h35 Wind Speed & Direction: 2-W Cloud %: 5

Wetland Type: S **Site Type:** R **Dominant Form:** h

% Open Water: **ELC Code:** SWDM2-2

Photos: 338, 339

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h) 90%	green ash, silver maple, trembling aspen, white elm
c 5%	white cedar
dc,dh,ds	green ash
(ts) 80%	silver maple, green ash, salix sp., common buckthorn
(ls) 25%	salix sp., red osier dogwood, white elm
(gc) 95%	pucoia impatiens, jewelweed, calico aster, [illegible]
ne 10%	reed canary grass
be 0	
re 5%	common [illegible]
ff 0	
f 0	
su 0	
m 0	

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: **Project #:**

Observer(s):

Date: **Time (24h):**

Field #: **Weather:** Precipitation: Temp (°C):

Map Code: Wind Speed & Direction: Cloud %:

Wetland Type: **Site Type:** **Dominant Form:**

% Open Water: **ELC Code:**

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163

Observer(s): CAP JEG

Date: AUG 11/10 **Time (24h):** 9:50

Field #: W6 **Weather:** Precipitation: none Temp (°C): 30

Map Code: +SS6 Wind Speed & Direction: 2-W Cloud %: 5

Wetland Type: S **Site Type:** R **Dominant Form:** +S

% Open Water: 25% **ELC Code:** SWTM3-6

Photos: 308

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	5% crack willow, trembling aspen white cedar
c	1% white cedar
dc,dh,ds	0
ts	85% crack willow, salix eriocephala, trembling aspen white cedar
ls	50% common willow, meadowsweet, red osier dogwood, [illegible] willow, white cedar
gc	purple loosestrife, marsh bedstraw, grass leaved goldenrod, wool grass
ne	awl-fruited sedge
be	water plantain
re	10% crack, green, [illegible] common cattail
ff	0
f	0
su	0
m	2% moss sp.

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
	FISH IN CREEK

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

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Wetland Vegetation Communities

Project Name: SMITHS FALLS 3,4,5 **Project #:** 1163

Observer(s): CAP, JEG

Date: AUG 11/2010 **Time (24h):** 10:15

Field #: W7 **Weather:** Precipitation: none Temp (°C): 30

Map Code: hS7 Wind Speed & Direction: 2-W Cloud %: 5

Wetland Type: S **Site Type:** R **Dominant Form:** h

% Open Water: **ELC Code:** SWMM1-4

Photos: 311

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	98% trembling aspen white elm, large toothed aspen
c	40% white cedar
dc,dh,ds	2% white cedar
ts	30% black-horn green ash riverbank grape
ls	5% virginia creeper
gc	90% spinulose wood fern bulblet fern sensitive fern, poison ivy northern ~~dogwood~~, wood nettle
ne	0
be	0
re	0
ff	0
f	0
su	0
m	50% moss sp.

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

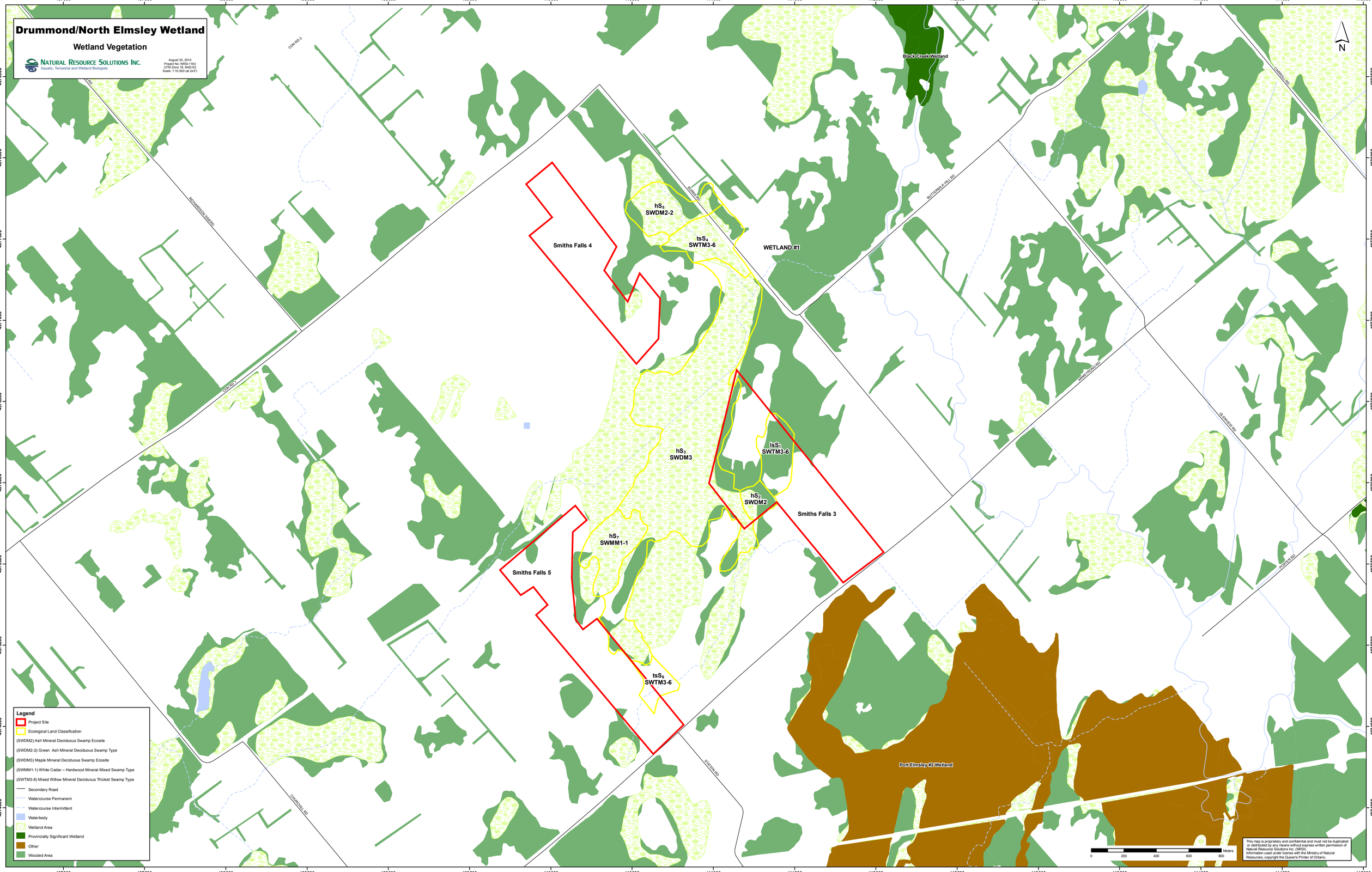
Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Drummond/North Elmsley Wetland

Wetland Vegetation

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

August 30, 2010
Project No. NRSI-1163
UTM Zone 18, NAD 83
Scale: 1:10,000 (at 2x3")



NRSI_1163_SmithFalls345_Vegetation_10K_2010_08_30_SWM