

April 14, 2015

Southgate Solar LP

José De Armas, Manager, Project Development

2050 Derry Road West 2nd Floor

Mississauga ON L5N 0B9

RE: NHA Confirmation for Southgate Solar Project

Dear José De Armas:

In accordance with the Ministry of the Environment and Climate Change's (MOECC's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources and Forestry (MNRF) has reviewed the Southgate Solar Project Natural Heritage Assessment (Records Review, Site Investigation, Evaluation of Significance) and Environmental Impact Study, dated April 2015 for the Southgate Solar Project in the Township of Southgate, County of Grey, Ontario, submitted by José De Armas on April 13, 2015.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNRF provides the following confirmations following review of the natural heritage assessment:

1. The MNRF confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNRF.
2. The MNRF confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNRF, if no natural features were identified.
3. The MNRF confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNRF.
4. The MNRF confirms that the project location is not in a provincial park or conservation reserve.

5. The MNRF confirms that the environmental impact study report has been prepared in accordance with procedures established by the MNRF.

In accordance with Section 28(3)(c) and 38(2)(c), MNRF also offers the following comments in respect of the project.

Preconstruction Monitoring

In accordance with Appendix D of MNRF's NHA Guide, a commitment has been made to complete pre-construction assessment(s) of habitat use for the following candidate significant wildlife habitats:

- I. Turtle Wintering Areas – TWA1 and TWA2
- II. Turtle Nesting Areas – TNA1
- III. Amphibian Breeding Habitat (Wetlands) - ABHWE1, ABHWE2, ABHWE5, ABHWE6, ABHWE7, ABHWE8, ABHWE9, ABHWE11, ABHWE12, ABHWE13, ABHWE14
- IV. Amphibian Breeding Habitat (Woodlands) – ABHWO4
- V. Habitat of Species of Conservation Concern – Hill's Pondweed - HP1, HP3, HP4, HP5, HP6
- VI. Animal Movement Corridors

Note: The following wildlife habitat surveys were completed under alternative site investigation methodology and were treated as significant and carried forward to the EIS. No pre-construction surveys will be conducted for these habitats due to accessibility and access permissions:

- Habitat of Species of Conservation Concern – American Gromwell – AG2
- Habitat of Species of Conservation Concern – Soft-hairy False Gromwell – SHFG4, SHFG5
- Habitat of Species of Conservation Concern – Harlequin Darner – HD5, HD10

MNRF has reviewed and confirmed the assessment methods and the range of mitigative options. Pending completion of the assessments and determination of significance, the appropriate mitigation is expected to be implemented, as committed to in the environmental impact study.

Post-Construction Monitoring

A commitment has been made in the Environmental Impact Study and will be included in the Environmental Effects Monitoring Plan, part of the Design and Operations Report, to conduct post-construction monitoring should the pre-construction monitoring (as outlined above) deem the wildlife habitat to be significant. For the Southgate Solar Project this includes:

- I. All candidate significant wildlife habitat requiring pre-construction assessment listed above – Three years post-construction monitoring
- II. TNA1 – Three years post-construction monitoring to occur during the first three nesting seasons following the completion of construction to determine if turtles are isolated within feature

A commitment has been made in the Environmental Impact Study and will be included in the Environmental Effects Monitoring Plan, part of the Design and Operations Report, to conduct post-construction monitoring. For the Southgate Solar Project this includes:

- I. Amphibian Breeding Habitat (Woodland) - ABHWO1, ABHWO2, ABHWO3, ABHWO5 – Three years post-construction monitoring
- II. Woodland Area-sensitive Bird Breeding Habitat – ASBB1 – Three years post-construction monitoring
- III. Significant Redheaded Woodpecker Habitat – RHW1 – Three years post-construction monitoring

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNRF may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA/EIS with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNRF expects that these commitments will be considered in MOECC's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOECC for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resource and Forestry's *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Jim Beal, Renewable Energy Coordinator at 705-755-1362.

Sincerely,



Kazia Milian
Regional Land Use Planning Supervisor
Regional Resources Section, Southern Region

cc Jim Beal, Renewable Energy Coordinator, Regional Resources Section, MNR
Mohsen, Keyvani, Environmental Assessment and Approvals Branch, MOECC

RECORDS REVIEW REPORT

Southgate Solar Project

April 2015

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1. INTRODUCTION

Southgate Solar LP proposes to develop a solar facility with a maximum name plate capacity of 50 megawatts alternating current (MWac), located near Mount Forest, in the Township of Southgate, County of Grey, Ontario (**Figure 1**). The renewable energy facility will be known as the Southgate Solar Project (“the Project”).

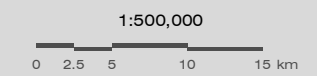
Southgate Solar LP has initiated the Project through a Power Purchase Agreement (PPA) with the Ontario Power Authority. The Project will require approval under Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Part V.0.1 of the *Ontario Environmental Protection Act*.

This *Natural Heritage Assessment (NHA) Records Review Report* was completed in partial fulfillment of the regulatory requirements for the REA process. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided, as required, in separate reports, including the *NHA Site Investigation*, *NHA Evaluation of Significance* and *NHA Environmental Impact Study Reports*. These reports will be submitted to the Ministry of Natural Resources and Forestry (MNRF) for review and comment, as required in O. Reg. 359/09. Discussion of Species at Risk, fish habitat and other information needs, as outlined in the MNRF’s *Approval and Permitting Requirements Document (APRD)* for Renewable Energy (MNRF 2009), are discussed in separate reports, under direction from the MNRF and in compliance with the REA and other applicable legislation.



SOUTHGATE SOLAR PROJECT

**FIGURE 1
GENERAL PROJECT LOCATION**



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 9/25/2014

2. THE PROPONENT

In the course of developing renewable energy projects, Southgate Solar LP strives to satisfy various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Southgate Solar LP aims to build long-term relationships with the communities that host its projects. Southgate Solar LP is committed to the health and welfare of the residents of the Township of Southgate, and to ensure that the Southgate Solar Project is successful for stakeholders.

Contact information for the Proponent is as follows:

Full Name of Company:	<u>Southgate Solar LP</u>
Prime Contacts:	<u>- Simon Kim, Project Manager</u> <u>- A. José De Armas, Manager, Project Development</u>
Address:	<u>2050 Derry Road West 2nd Floor, Mississauga, ON, L5N 0B9</u>
Telephone:	<u>(905) 501-5657</u>
Email:	<u>ssp@samsungrenewableenergy.ca</u>

Dillon Consulting Limited (Dillon) is the prime contractor for the preparation of this report. The contact at Dillon is:

Full Name of Company:	<u>Dillon Consulting Limited</u>
Prime Contact:	<u>Michael Enright, Project Manager</u>
Address:	<u>1155 North Service Road West, Unit 14, Oakville, Ontario, L6M 3E3</u>
Telephone:	<u>(905) 901-2912 ext. 3401</u>
Email:	<u>menright@dillon.ca</u>

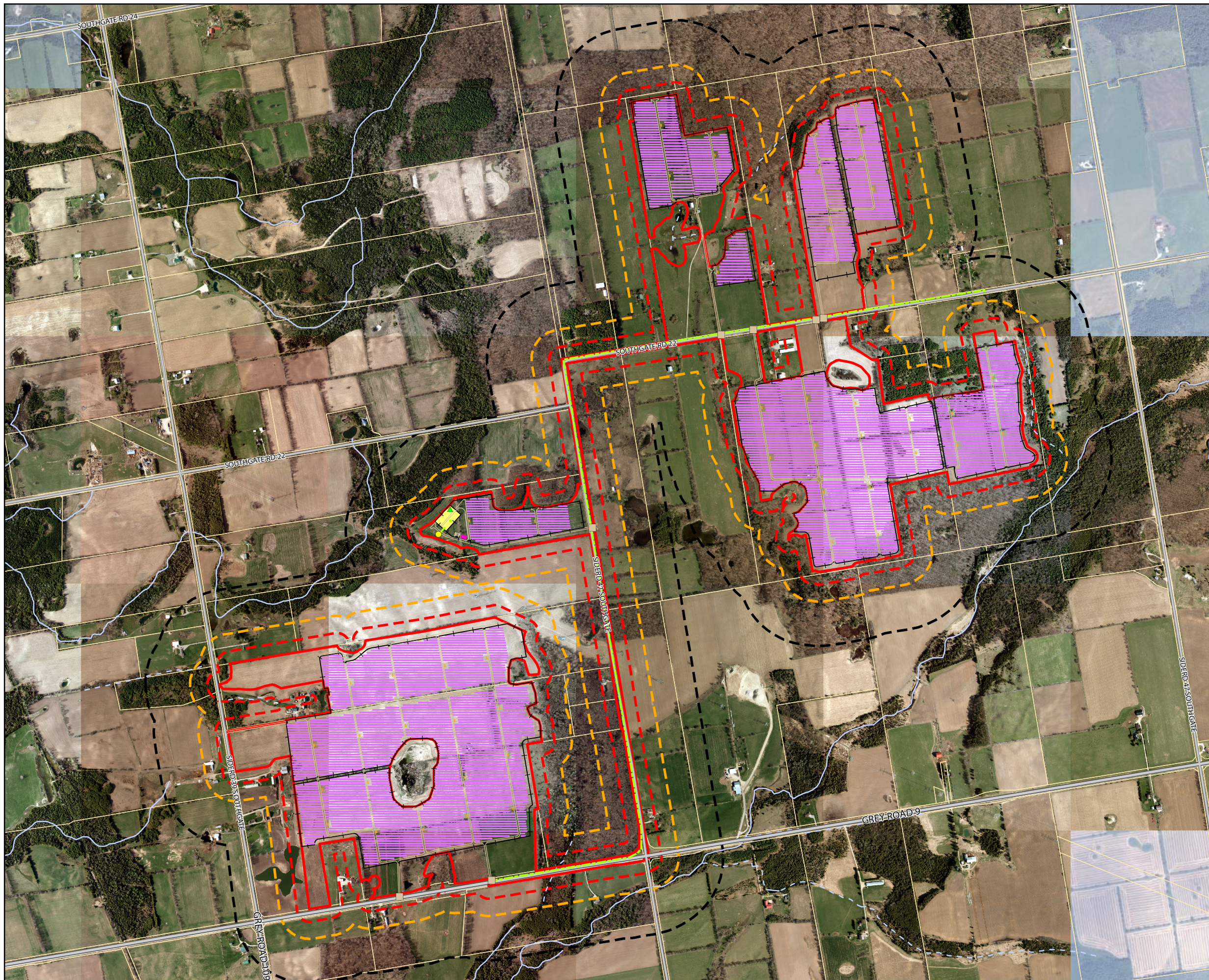
3. PROJECT LOCATION

The proposed Class 3 Solar Facility is to be located within the Township of Southgate, in the County of Grey, approximately 11 kilometres north of the community of Mount Forest. **Figure 1** shows the general location of the Project in Southwestern Ontario. The proposed Project Location consists of approximately 235 hectares (581 acres) and is contained within an area bounded on the north by Southgate Road 24, Southgate Road 14 to the south, Southgate Road 47 to the east, and Highway 6 to the west. The proposed Project Location, consisting of multiple privately-owned parcels, is to be leased by Southgate Solar LP. It has an approximate centroid at the following geographic coordinates:

- Latitude: 44° 6' 7.78" N
- Longitude: 80° 44' 49.91" W




















Figure 1 shows the general location of the Project in Ontario. The Project Location is defined in O. Reg. 359/09 to be “a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project”. **Figure 2** shows the Project Location as defined by O. Reg. 359/09. Project components, including solar modules and electrical facilities such as inverters, transformers, substations and electrical lines, will be located on private land. Areas within the Project Location but outside of the perimeter fence are “Areas of Operational Flexibility”. These areas have been reserved to accommodate other Project requirements (ex. stormwater measures, temporary laydown areas, etc.). This is discussed in greater detail on Section 4 of the *Project Description Report*.

Figure 2 also includes the 50 m, 120 m and 300 m setbacks from the Project Location. Each setback distance is applicable to various components of the REA process. Setback development prohibitions for solar facilities are outlined in Part V, Sections 37 and 38 of O. Reg. 359/09 (revised in November 2012).

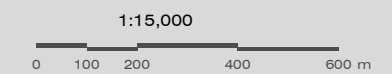


SOUTHGATE SOLAR PROJECT

**FIGURE 2
PROJECT LOCATION**

-  Site Entrance
-  Point of Common Coupling
-  Communications Tower
-  Overhead Cable
-  Fence
-  Access Road
-  Solar Panel
-  Permanent Watercourse
-  Intermittent Watercourse
-  Project Location
-  Project Location 50 m Setback
-  Project Location 120 m Setback
-  Project Location 300 m Setback
-  Inverter
-  Substation Transformer
-  Substation
-  Operations and Maintenance Building
-  Parking Lot
-  Parcel Boundary

The area between the fence line and the Project Location is the Area of Operational Flexibility.



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 12/2/2014

4. METHODOLOGY

A records review was completed, consistent with Section 25 of O. Reg. 359/09, for the Project Location (see **Figure 2**) using secondary source information.

For the purposes of the records review, Section 25 of O. Reg. 359/09 states a natural heritage assessment for a renewable energy facility includes a records review to search for and determine whether the Project Location is:

1. In or within 120 m of a provincial park or conservation reserve,
2. In a natural feature, as defined to be:
 - i. a wetland (coastal wetland, northern wetland or southern wetland)
 - ii. a wildlife habitat
 - iii. a woodland
 - iv. an Area of Natural and Scientific Interest (ANSI, life and earth science)
3. Within 50 m of an ANSI (earth science)
4. Within 50 m of a natural feature that is not an ANSI (earth science)

As best practice and to meet the requirements of the *Construction Plan Report*, the records review has searched for these features within 300 m of the Project Location.

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

Southgate Solar Project
Natural Heritage Assessment Records Review Report

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

Record Source		Records Requested and/or Reviewed
Ministry of Natural Resources		
District Office: Midhurst		Main Contact: Megan Eplett, A/ District Planner (April- August 2014)
Date of Request: May 26, 2014	Date of Data Receipt: June 4, 2014	<ul style="list-style-type: none"> ▪ Records received from MNRF Midhurst District relating to provincial parks, conservation reserves, natural features, wildlife species, and Species at Risk
Date of Request: September 19, 2014	Date of Data Receipt: September 25, 2014	Main Contact: Kim Benner, A/ District Planner (Current) <ul style="list-style-type: none"> ▪ Follow up email sent to Midhurst District to confirm no other records were available ▪ Received email from Jodi Benvenuti, Management Biologist, with Species at Risk and other wildlife species to consider
Manuals/Guidelines		Ecological Land Classification for Southern Ontario, First Approximation and its Application, 1998 Natural Heritage Reference Manual, Second Edition, March 2010 Natural Heritage Assessment Guide for Renewable Energy Projects, Second Edition, November 2012 Ontario Wetland Evaluation System, Southern Manual, Third Edition, November 2012 Significant Wildlife Habitat Technical Guide (2000), Appendices and Decision Support Tool Significant Wildlife Habitat Eco-regional Criteria Schedules, February 2012
Land Information Ontario (LIO), data requested/accessed January 2015		<ul style="list-style-type: none"> ▪ Interactive Online Mapping Tool ▪ Warehouse Data (see Appendix B for data layers obtained)
Ontario Wind Resource Atlas, online data accessed April 2014		<ul style="list-style-type: none"> ▪ Used to identify bat hibernacula locations within 10 km² grids
Ontario Crown Land Use Policy Atlas, online data accessed April 2014		<ul style="list-style-type: none"> ▪ Crown Land areas
Natural Heritage Information Centre (NHIC) 17NJ1769; 17NJ1789; 17NJ1799; 17NJ1851; 17NJ1852; 17NJ1853; 17NJ1860; 17NJ1861; 17NJ1862; 17NJ1863; 17NJ1864; 17NJ1865; 17NJ1870; 17NJ1871; 17NJ1872; 17NJ1873; 17NJ1874; 17NJ1875; 17NJ1876; 17NJ1880; 17NJ1881; 17NJ1882; 17NJ1883; 17NJ1884; 17NJ1885; 17NJ1886; 17NJ1890; 17NJ1891; 17NJ1892; 17NJ1893; 17NJ1894; 17NJ1895; 17NJ1896; 17NJ1897; 17NJ2709; 17NJ2719; 17NJ2800; 17NJ2801; 17NJ2802; 17NJ2803; 17NJ2804; 17NJ2805; 17NJ2806; 17NJ2807; 17NJ2808; 17NJ2810; 17NJ2811; 17NJ2812;		<ul style="list-style-type: none"> ▪ Biodiversity Explorer <ul style="list-style-type: none"> ▪ Rare species ▪ Rare plant communities ▪ Natural areas ▪ Invasive species ▪ Wildlife Concentration Areas ▪ Ontario Odonata Atlas

Southgate Solar Project
Natural Heritage Assessment Records Review Report

Record Source		Records Requested and/or Reviewed
17NJ2813; 17NJ2814; 17NJ2815; 17NJ2816; 17NJ2817; 17NJ2818; 17NJ2820; 17NJ2821; 17NJ2822; 17NJ2823; 17NJ2824; 17NJ2825; 17NJ2826; 17NJ2832; 17NJ2833; 17NJ2834; 17NJ2835; 17NJ2842; 17NJ2843; 17NJ2844; 17NJ2845		
MNR Species at Risk in Ontario (SARO) List, accessed July 2014		Accessed to determine status of plant and wildlife species (<i>Special Concern</i>)
Federal Government		
Canadian Wildlife Service/ Environment Canada		Contact: Denise Fell, Environmental Assessment Officer, via email <ul style="list-style-type: none"> ▪ Records relating to natural features and wildlife species
Date of Request: May 28, 2014	Date of Data Receipt: N/A. CWS has previously noted they do not have files of relevance	
Fisheries and Oceans Canada online mapping		Distribution of Fish Species at Risk mapping for Saugeen Valley Conservation Authority (valid May 2014- May 2015)
Conservation Authority		
Saugeen Valley Conservation Authority (SVCA)		Contact: Erik Downing, Manager, Environmental Planning and Regulations
Date of Meeting: July 4, 2014	Date of Data Receipt: May 22, 2014	
Municipality		
Upper-Tier Municipality: Grey County (2013)		<ul style="list-style-type: none"> ▪ Official Plan and mapping Schedules reviewed ▪ Woodland Significance Mapping and Criteria Reviewed
Lower-Tier Municipality: Township of Southgate (2009)		<ul style="list-style-type: none"> ▪ Official Plan and mapping Schedules reviewed
Planning Authorities and Local Boards		
Municipal Planning Authority		See Above
Local Planning Board		Not applicable in Project Location
Local Roads Board		Not applicable in Project Location
Local Services Board		Not applicable in Project Location
Other Resources		
Ontario Breeding Birds Atlas (OBBA) - online data accessed April 2014		Squares 17NJ18, 17NJ28
Christmas Bird Count (CBC) – online data accessed April 2014		No Count Circles within 14 km of the Project Location.
Important Bird Areas – online data accessed April 2014		None within >20 km of the Project Location.
Atlas of the Mammals of Ontario		Dobbyn 1994. Published by Federation of Ontario Naturalists

Southgate Solar Project
Natural Heritage Assessment Records Review Report

Record Source	Records Requested and/or Reviewed
Great Lakes Conservation Blueprint for Terrestrial Biodiversity. Volume 2: Ecodistrict Summaries Mount Forest Ecodistrict 6E-5 pp.75-80	Henson and Brodribb 2005. Produced by the Nature Conservancy of Canada <ul style="list-style-type: none"> ▪ Summary of statistics and land use relating to natural features and wildlife species in each Ecodistrict
Ontario Butterfly Atlas- online data accessed April 2014	Accessed to determine potential for Lepidoptera species to occur in the Southgate area
Species at Risk Public Registry, accessed July 2014	Accessed to determine status of plant and wildlife species as a Species of Conservation Concern
COSEWIC, accessed April 2014	Accessed to determine status of plant and wildlife species as a Species of Conservation Concern
Provincial Plan Area Records	
Niagara Escarpment Commission	Project Location does not fall within the Niagara Escarpment Plan Area
Oak Ridges Conservation Plan Area	Project Location does not fall within the Oak Ridges Conservation Plan Area
Greenbelt Plan Area	Project Location does not fall within the Greenbelt Plan Area
Lake Simcoe Protection Plan	Project Location does not fall within the Lake Simcoe Protection Plan Area

5. RESULTS

The project location falls within Ecodistrict 6E-5 (Mount Forest) and was summarized as part of the Great Lakes Conservation Blueprint for Terrestrial Biodiversity (Henson and Brodribb, 2005). The majority of land in this Ecodistrict is privately owned and approximately 27% of this land exists as natural cover, primarily forest. Of this natural cover, swamps comprise nearly 27%, followed by till plain deciduous forest complex (23%), and till moraine deciduous forest complex (13%).

5.1 Natural Features

Based on our review and analysis of the records and resources outlined in **Table 1**, and in accordance with O. Reg. 359/09, the presence of natural features are documented below and determinations were made whether the Project Location is in or within the prescribed search area for a natural feature (as defined by Section 25 of O. Reg. 359/09). Natural features identified are outlined on **Figure 3**. The consideration of natural features 300 m from the Project Location is included to meet the requirements of the *Construction Plan Report*. The *Construction Plan Report* will be required as part of the REA Application.

5.1.1 Provincial Parks and Conservation Reserves

A search and analysis of the records and resources outlined in **Table 1** did not identify any provincial parks or conservation reserves in the Project Location or within the surrounding 120 m or 300 m.

5.1.2 ANSI, Life Science

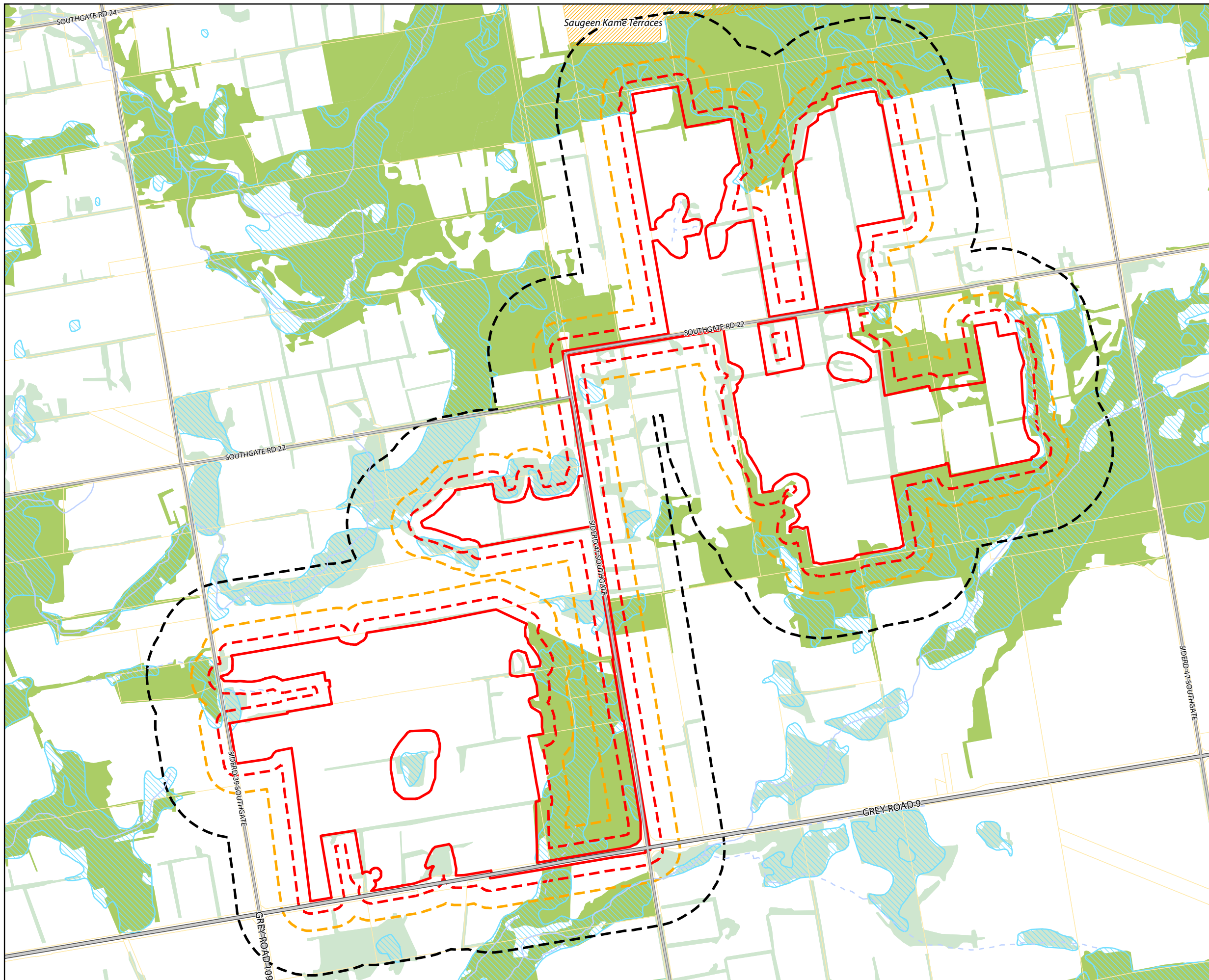
A search and analysis of the records and resources outlined in **Table 1** did not identify any Life Science ANSIs in the Project Location or within the surrounding 120 m or 300 m.

5.1.3 ANSI, Earth Science

A search and analysis of the records and resources outlined in **Table 1** identified one Earth Science ANSI approximately 200 m from the northern boundary of the Project Location. This Earth Science ANSI is identified as the Saugeen Kame Terraces Earth Sciences ANSI (**Figure 3**). No other Earth Science ANSI's were identified within 50 m, 120 m or 300 m of the Project Location.

5.1.4 Wetlands

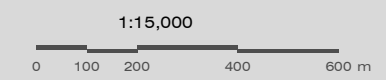
A search and analysis of the records and resources outlined in **Table 1** identified one unevaluated southern wetland within the Project Location. Several additional unevaluated southern wetlands, as defined by O. Reg. 359/09, mapped within 120 m of the Project Location (**Figure 3**). In **Appendix A, Figure A1**, unique identifiers have been added to each unevaluated southern wetland mapped for use when referencing the specific feature during the remainder of the *NHA*. No southern wetlands were mapped within the Project Location boundary. In the general landscape, several other unevaluated wetlands have been mapped. No provincially significant wetlands were identified in the Project Location or within the surrounding 120 m or 300 m.



SOUTHGATE SOLAR PROJECT

**FIGURE 3
RECORDS REVIEW**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- ANSI, Earth Science
- Unevaluated Wetland
- Grey County Significant Woodland
- Woodland



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 1/12/2015

5.1.5 Woodlands

A search and analysis of the records and resources outlined in **Table 1** identified several woodlands, as defined by O. Reg. 359/09, mapped both within the Project Location and within the 120 m setback area (see **Figure 3**). In **Appendix A, Figure A2**, unique identifiers have been added to each woodland mapped for use remainder of the *NHA*. In the general landscape, several other woodlands have been mapped.

5.1.6 Wildlife Habitat

A review of the records and resources outlined in **Table 1** was undertaken to identify if wildlife habitat applicable to Ecoregion 6E had been previously identified in the Project Location and/or surrounding 120 m. The types of wildlife habitat applicable to the *NHA* fall under four categories (MNRF 2002, MNRF 2012):

- Seasonal Concentration Areas of Animals;
- Rare Vegetation Communities or Specialized Habitat for Wildlife;
- Habitat for Species of Conservation Concern; and,
- Animal Movement Corridors.

Within these broad categories, the MNRF has defined which wildlife habitat is applicable to Ecoregion 6E in the Significant Wildlife Habitat (SWH) Ecoregion 6E Criterion Schedule (2012). Based on the available records (**Table 1**), no candidate or known significant wildlife habitats were identified within 120 m of the Project Location or within the surrounding 300 m (**Table 2**). Potential candidate wildlife habitat carried forward will be outlined and reviewed for relevance during the site investigation and included in the *NHA Site Investigation Report*.

To assist with the identification of Habitat for Species of Conservation Concern, a search and analysis of the records and resources outlined in **Table 1** was undertaken to determine which Species of Conservation Concern have been previously identified in the general area of the Project Location. These species are further discussed in **Section 5.2** and **Section 5.3** and outlined in detail with respect to their status in **Appendix C1**. As outlined above, no known habitat of Species of Conservation Concern has been previously mapped within the Project Location or within the surrounding 120 m or 300 m.

Table 2: Summary of Wildlife Habitat Identified within the Project Location and 120 m Setback

Wildlife Habitat Type	Source of Information	Evaluation Status	Distance Relative to Project Location
Seasonal Concentration Areas			
Waterfowl Stopover and Staging Areas (Terrestrial)			
No known features identified within the Project Location or adjacent lands within 120 m			
Waterfowl Stopover and Staging Areas (Aquatic)			
No known features identified within the Project Location or adjacent lands within 120 m			
Shorebird Migratory Stopover Areas			
No known features identified within the Project Location or adjacent lands within 120 m			
Raptor Wintering Area			
No known features identified within the Project Location or adjacent lands within 120 m			
Bat Hibernacula			
No known features identified within the Project Location or adjacent lands within 120 m			
Bat Maternity Colonies			
No known features identified within the Project Location or adjacent lands within 120 m			
Bat Migratory Stopover Areas			
There are no MNRF identified Bat Migratory Stopover Areas within 120 m			
Turtle Wintering Areas			
No known features identified within the Project Location or adjacent lands within 120 m			
Snake Hibernaculum			
No known features identified within the Project Location or adjacent lands within 120 m			
Colonially- Nesting Bird Breeding Habitat (Bank and Cliff)			
No known features identified within the Project Location or adjacent lands within 120 m			
Colonially- Nesting Bird Breeding Habitat (Tree/ Shrubs)			
No known features identified within the Project Location or adjacent lands within 120 m			
Colonially- Nesting Bird Breeding Habitat (Ground)			
No known features identified within the Project Location or adjacent lands within 120 m			
Migratory Butterfly Stopover Areas			
The Project Location is not located within 5 km of Lake Ontario.			
Landbird Migratory Stopover Areas			
The Project Location is not located within 5 km of Lake Ontario.			
Deer Yarding Areas			
There are no Deer Yarding Areas (delineated by the MNRF) within 120 m			
Deer Winter Congregation Areas			
No known features identified within the Project Location or adjacent lands within 120 m			

Wildlife Habitat Type	Source of Information	Evaluation Status	Distance Relative to Project Location
<i>Rare Vegetation Communities</i>			
Cliffs and Talus Slopes			
No known features identified within the Project Location or adjacent lands within 120 m			
Alvar			
No known features identified within the Project Location or adjacent lands within 120 m			
Old Growth Forest			
No known features identified within the Project Location or adjacent lands within 120 m			
Savannah			
No known features identified within the Project Location or adjacent lands within 120 m			
Tallgrass Prairie			
No known features identified within the Project Location or adjacent lands within 120 m			
Other Rare Vegetation Communities			
No known features identified within the Project Location or adjacent lands within 120 m			
<i>Specialised Wildlife Habitat</i>			
Waterfowl Nesting Area			
No known features identified within the Project Location or adjacent lands within 120 m			
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat			
No known features identified within the Project Location or adjacent lands within 120 m			
Woodland Raptor Nesting Habitat			
No known features identified within the Project Location or adjacent lands within 120 m			
Turtle Nesting Areas			
No known features identified within the Project Location or adjacent lands within 120 m			
Seeps and Springs			
No known features identified within the Project Location or adjacent lands within 120 m			
Amphibian Breeding Habitat (Woodland)			
No known features identified within the Project Location or adjacent lands within 120 m			
Amphibian Breeding Habitat (Wetlands)			
No known features identified within the Project Location or adjacent lands within 120 m			
<i>Habitat of Species of Conservation Concern</i>			
Marsh Bird Breeding Habitat			
No known features identified within the Project Location or adjacent lands within 120 m			
Woodland Area- Sensitive Bird Breeding Habitat			
No known features identified within the Project Location or adjacent lands within 120 m			
Open Country Breeding Bird Habitat			
No known features identified within the Project Location or adjacent lands within 120 m			
Shrub/ Early Successional Bird Breeding Habitat			
No known features identified within the Project Location or adjacent lands within 120 m			

Wildlife Habitat Type	Source of Information	Evaluation Status	Distance Relative to Project Location
Terrestrial Crayfish			
No known features identified within the Project Location or adjacent lands within 120 m			
Special Concern and Rare Wildlife Species			
No known features identified within the Project Location or adjacent lands within 120 m; Species with the potential to occur in the general area are identified in Appendix C1			
Animal Movement Corridors			
Amphibian Movement Corridors			
No known features identified within the Project Location or adjacent lands within 120 m			
Deer Movement Corridors			
No known features identified within the Project Location or adjacent lands within 120 m			
Provincial Plan Areas			
None applicable to the Project Location or setback areas			

5.2 Supplementary Wildlife Habitat Information

The information presented in this section was collected to further inform the identification of wildlife habitat in the general area of the Project Location.

5.2.1 Vascular Plant and Bryophyte Diversity

Using readily available secondary source information, as outlined in **Table 1**, 11 plant Species of Conservation Concern have been determined as potentially occurring in or adjacent to the Project Location. These species will be further investigated during the site investigation to determine if habitat occurs. Records were requested from the MNRF and CWS. While species records were provided by the MNRF; to date, no information has been provided from CWS regarding records or data for vascular plants or bryophytes in the general area of the Project Location. CWS has previously stated they do not have records that can be accessed for use by renewable energy projects in Ontario (D. Fells, personal communication). Species are outlined in **Appendix C1, Table C1-1**. Please note, as stated in **Section 5.5** below, Species at Risk protected as *Endangered* or *Threatened* under the *Ontario Endangered Species Act, 2007* are not included.

5.2.2 Wildlife Species Diversity

Using the readily available secondary source databases and wildlife atlases outlined in **Table 1**, various wildlife species have the potential to occur in or adjacent to the Project Location. These species are discussed below and in **Appendix C1**. Each species has been assessed according to occurrence records as well as their provincial and federal conservation status.

5.2.3 Birds

After reviewing records in the OBBA (Cadman *et al.*, 2005; OBBA Mapping Squares 17NJ18 and 17NJ28; see **Appendix A2**), 162 avian species have been identified in the general area of the Project Location (i.e., 200 square km). A search of the MNR's NHIC database revealed an occurrence record for one additional avian species. These birds depend on a wide range of habitats from agricultural areas to woodlands to wetlands. The majority of the bird species that have the potential to occur in the general area of the Project Location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). Of the 163 species found in the area of the Project Location, 18 are Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs. A complete list of species is available in **Appendix C1, Table C1-2**.

5.2.4 Mammals

After reviewing records in the Atlas of Mammals of Ontario (Dobbyn, 1994), 38 mammalian species have been identified in the general area of the Project Location. Most of the mammals that have the potential to occur in the general area of the Project Location are considered *Secure* (SRank of S5). Of the 38 species found in the area of the Project Location, one is a Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs. A complete list of species is available in **Appendix C1, Table C1-2**.

5.2.5 Herpetozoa

The Ontario Herpetofaunal Atlas (Oldham and Weller, 2000) and the Ontario Reptile and Amphibian Atlas (Ontario Nature, 2010) were used to determine the potential for various herpetozoa species to occur within or adjacent to the Project Location. A total of 23 herpetozoa species were identified with occurrence records in the general area of the Project Location. Of the 23 species found in the area of the Project Location, five are Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs. A complete list of species is available in **Appendix C1, Table C1-2**.

5.2.6 Invertebrates

The Ontario Butterfly Atlas Online (2013) was reviewed to determine the potential for butterflies and moths to occur in the general area of the Project Location. One additional species was flagged by the MNRF to occur within the Project Location. Of the three species belonging to the Lepidoptera taxon, two are identified as considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4) and one is a Species of Conservation Concern. This species will be further investigated during the site investigation to determine if habitat occurs.

The Ontario Odonata Atlas was reviewed to determine the potential for dragonflies and damselflies to occur in the general area of the Project Location. A total of 12 species from the Odonata family had occurrence records in the general vicinity of the Project Location. A search of the MNRF’s NHIC database revealed an occurrence record for two additional Odonata species. The majority of the Odonata species that have the potential to occur in the general area of the Project Location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). Of the 14 species found in the area of the Project Location, 3 are Species of Conservation Concern. These species will be further investigated during the site investigation to determine if habitat occurs. A complete list of species is available in **Appendix C1, Table C1-2**.

5.3 Provincial Plan Areas

Under O. Reg. 359/09, if any part of the Project Location falls within a provincial plan area, the Project Location may be subject to different criterion to evaluate the applicable natural features. In addition, should development occur within the REA setback area of a natural feature, it may be subject to a different set of prohibitions beyond those prescribed under O. Reg. 359/09. **Table 2** outlines the provincial plan areas that should be considered when planning a renewable energy project and identifies which, if any, are applicable to the Project Location.

Table 3: Summary of Provincial Plan Areas and Applicability to the Project Location

Provincial Plan Area	Applicability to Project
Oak Ridges Moraine Conservation Plan Area	None
Niagara Escarpment Plan Area	None
Greenbelt - Natural Heritage System	None
Greenbelt – Protected Countryside	None
Lake Simcoe Protection Plan	None

5.4 Species at Risk

Species at Risk listed under the federal *Species at Risk Act* and provincial *Endangered Species Act, 2007*, with the potential to interact with the Project Location and/or adjacent lands, are being considered in consultation with the appropriate agency. Reporting related to the protection of species listed as *Endangered* or *Threatened* on the Species at Risk in Ontario list (*O. Reg. 230/08*) is being provided to the appropriate agency under separate cover. This reporting format meets the *NHA* requirements, as set out in *O. Reg. 359/09*, and is consistent with the direction provided by the MNRF.

5.5 Other Required Approvals and Permitting

In addition to the natural features included in this records review, the MNRF is responsible for administering approvals and permits related to the following resources and land uses:

- Mineral Aggregate Resources
- Harvesting Crown-owned Forest Resources
- Natural Hazard Lands (unless designated to a local Conservation Authority)
- Furbearing Mammals
- Fish and Fish Habitat
- Species at Risk
- Areas under Forest Resource License or Sustainable Forest License
- Petroleum Resources
- Far North Applicability
- Forest Resource Processing Facility Licensing
- Wildfire Prevention and Preparedness Requirements

The applicability of these resources and land uses within the Project Location and adjacent areas will be outlined in a separate APRD report that will be submitted to the MNRF for parallel consideration with this *NHA*. Species at Risk under the provincial *Endangered Species Act, 2007* will be submitted to the MNRF under separate cover.

6. CONCLUSIONS

This *NHA Records Review Report* was completed in partial fulfillment of the regulatory requirements for the REA process. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided in separate reports as required, including the *NHA Site Investigation*, *NHA Evaluation of Significance* and *NHA Environmental Impact Study* reports, where applicable. These reports will be submitted to the MNRF for review and comment, as required in O. Reg. 359/09, and will provide for the protection of significant natural features within and adjacent to the Project Location.

The determinations made in this records review will form the baseline knowledge for the Project Location. Fieldwork, in addition to consultation with the MNRF and other relevant stakeholders, will be used to determine the accuracy and applicability of this records review during the site investigation. **Table 3** summarizes the determinations made during this records review. All applicable natural features within the Project Location and surrounding 300 m are outlined on **Figure 3**.

Table 4: Summary of the Natural Heritage Assessment Records Review

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
Provincial Parks and Conservation Reserves				
No known features identified within the Project Location or adjacent lands within 120 m				N
ANSI, Life Science				
No known features identified within the Project Location or adjacent lands within 120 m				N
ANSI, Earth Science				
Saugeen Kame Terraces Earth Science ANSI	LIO Mapping	Evaluated	Greater than 120 m from the Project Location	N
Wetlands				
Unevaluated Southern Wetlands	LIO Mapping	Unevaluated	One within the Project Location. Several within 120 m of the Project Location	Y
Woodlands				
Unevaluated Southern Woodlands	LIO Mapping	Unevaluated	Three within the Project Location. Several within 120 m of the Project Location.	Y
Southern Woodlands (previously evaluated as significant by Grey County)	Grey County Mapping	Evaluated	Four within the Project Location. Three within 120 m of the Project Location.	Y

Southgate Solar Project
Natural Heritage Assessment Records Review Report

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
Wildlife Habitat				
Seasonal Concentration Areas				
Waterfowl Stopover and Staging Areas (Terrestrial)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Waterfowl Stopover and Staging Areas (Aquatic)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Shorebird Migratory Stopover Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Raptor Wintering Area				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bat Hibernacula				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bat Maternity Colonies				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bat Migratory Stopover Areas				
There are no MNRF identified Bat Migratory Stopover Areas within 120 m				N
Turtle Wintering Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Snake Hibernaculum				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Colonially- Nesting Bird Breeding Habitat (Bank and Cliff)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Colonially- Nesting Bird Breeding Habitat (Tree/ Shrubs)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Colonially- Nesting Bird Breeding Habitat (Ground)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Migratory Butterfly Stopover Areas				
The Project Location is not located within 5 km of Lake Ontario.				N
Landbird Migratory Stopover Areas				
The Project Location is not located within 5 km of Lake Ontario.				N
Deer Yarding Areas				
There are no Deer Yarding Areas (delineated by the MNRF) within 120 m				N
Deer Winter Congregation Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y

Southgate Solar Project
Natural Heritage Assessment Records Review Report

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
<i>Rare Vegetation Communities</i>				
Cliffs and Talus Slopes				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Alvar				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Old Growth Forest				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Savannah				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Tallgrass Prairie				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Other Rare Vegetation Communities				
No known features identified within the Project Location or adjacent lands within 120 m				Y
<i>Specialised Wildlife Habitat</i>				
Waterfowl Nesting Area				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Woodland Raptor Nesting Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Turtle Nesting Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Seeps and Springs				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Amphibian Breeding Habitat (Woodland)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Amphibian Breeding Habitat (Wetlands)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
<i>Habitat of Species of Conservation Concern</i>				
Marsh Bird Breeding Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Woodland Area- Sensitive Bird Breeding Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y

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Natural Heritage Assessment Records Review Report

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
Open Country Breeding Bird Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Shrub/ Early Successional Bird Breeding Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Terrestrial Crayfish				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Special Concern and Rare Wildlife Species				
No known features identified within the Project Location or adjacent lands within 120 m; Species with the potential to occur in the general area are identified in Appendix C1				Y
Animal Movement Corridors				
Amphibian Movement Corridors				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Deer Movement Corridors				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Provincial Plan Areas				
None applicable to the Project Location or setback areas				N

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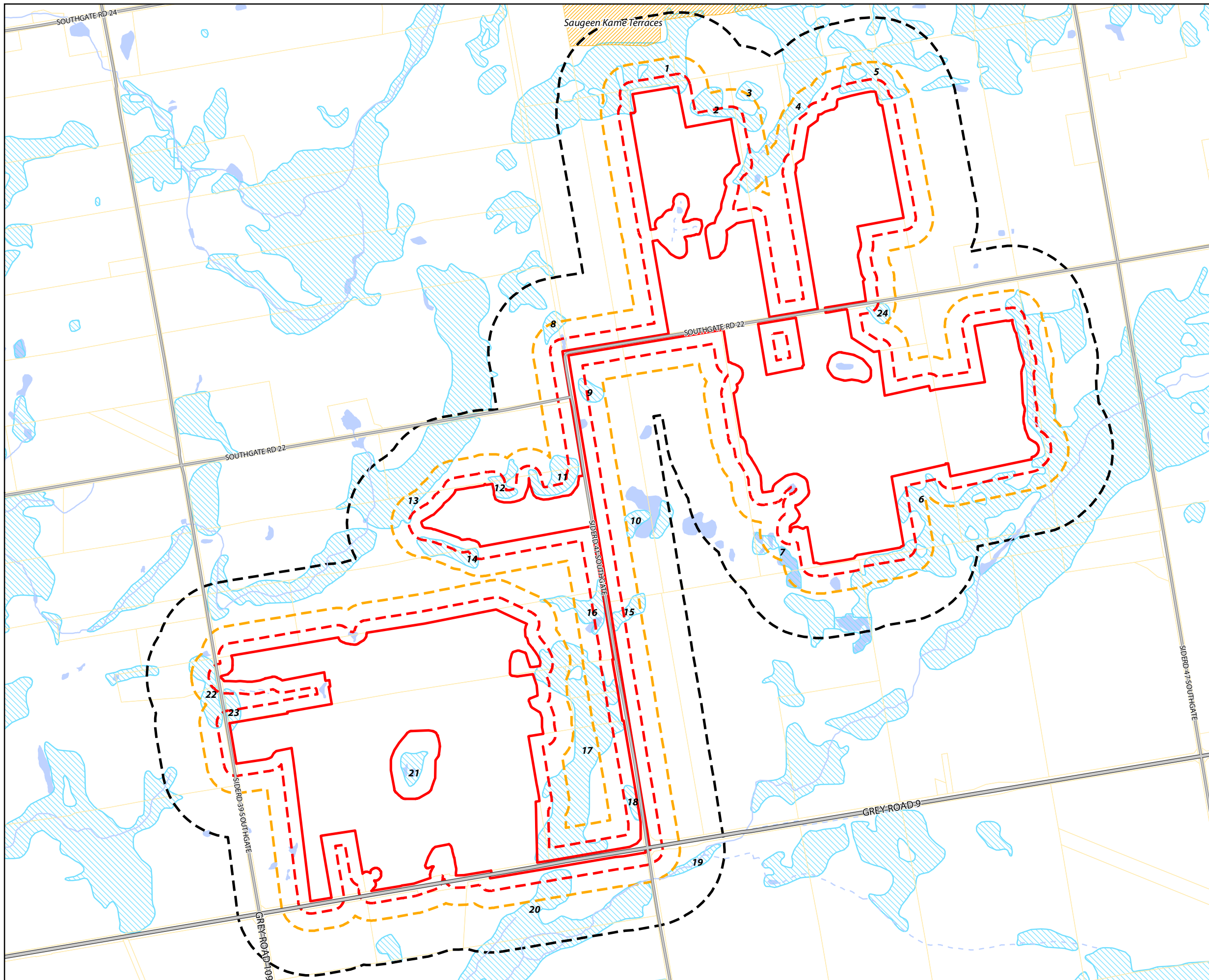
APPENDIX A

Supplementary Materials



APPENDIX A1

Wetlands



SOUTHGATE SOLAR PROJECT

**FIGURE A1
RECORDS REVIEW: WETLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- ANSI, Earth Science
- Unevaluated Wetland
- Water Body



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



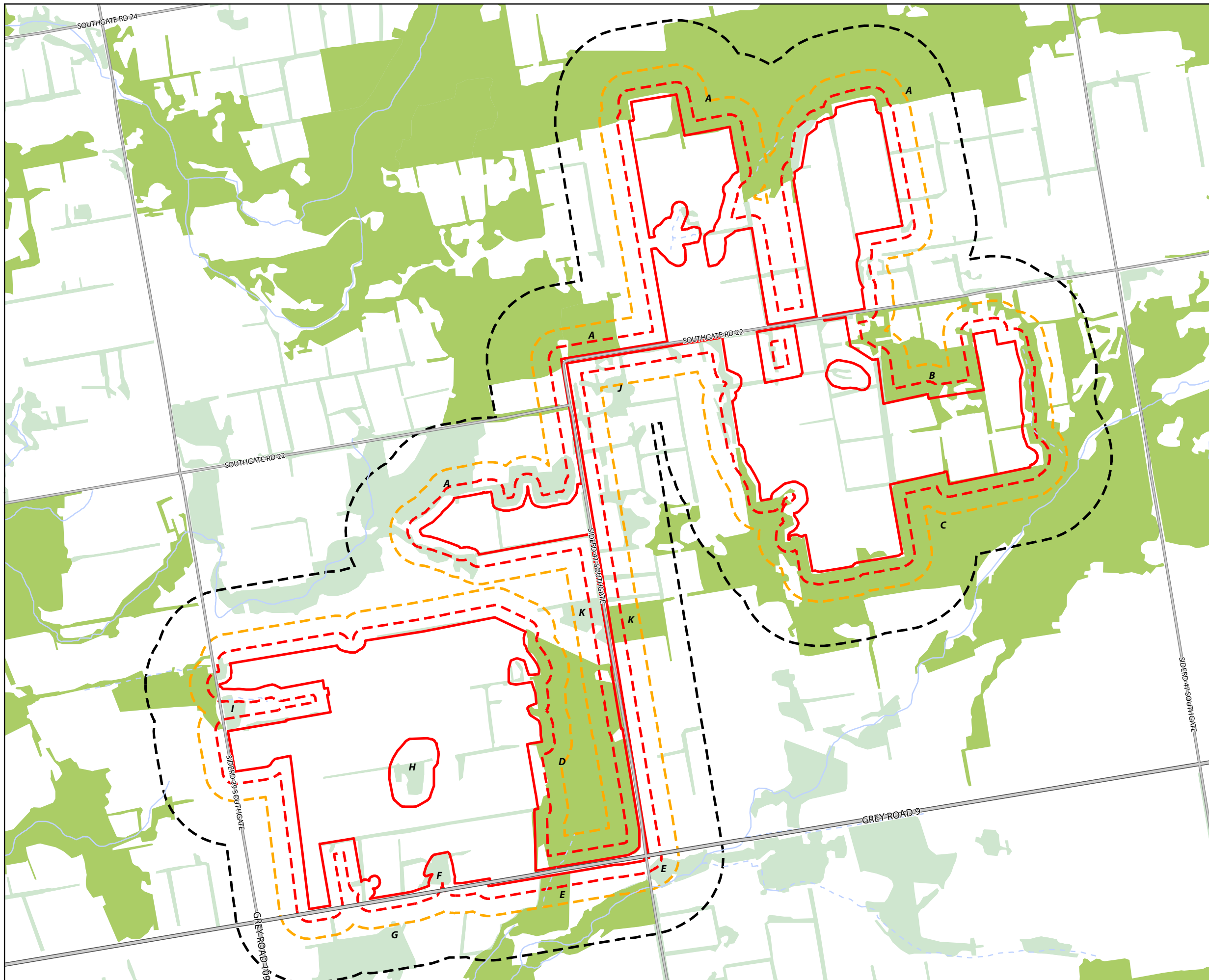
PROJECT: 149154
STATUS: DRAFT
DATE: 10/10/2014

Table A1: Wetland Locations Relative to Project Location

Wetland ID	Distance Relative to Project Location	
	Within	Within 120 m
1	✓	✓
2		✓
3		✓
4		✓
5		✓
6		✓
7		✓
8		✓
9		✓
10		✓
11		✓
12		✓
13		✓
14		✓
15		✓
16		✓
17	✓	✓
18		✓
19		✓
20		✓
21		✓
22		✓
23	✓	✓
24		✓

APPENDIX A2

Woodlands



SOUTHGATE SOLAR PROJECT

**FIGURE A2
RECORDS REVIEW: WOODLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Grey County Significant Woodland
- Woodland



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 1/9/2015

Table A2: Woodland Locations Relative to Project Location

Woodland ID	Distance Relative to Project Location	
	Within	Within 120 m
A	✓	✓
B	✓	✓
C	✓	✓
D	✓	✓
E		✓
F	✓	✓
G	✓	✓
H	✓	✓
I		✓
J		✓
K		✓



APPENDIX B


GIS Data Layers

Table B: GIS Data Layer Information for the Southgate Solar Project

Title of Data Set	Data Layers	Vintage of Data or Date Info/Searched/Collected	Ownership of Information	Project Site
Wetland	Wetlands	2014	MNRF	Southgate
LRO16_selected_PINs_14-9154	Parcel Boundaries	2014	First Base Solutions	Southgate
Woodland	Woodlands	2015	MNRF	Southgate
Watercourse	Watercourse Features Note: This information has been updated to reflect the results of the water assessment field investigations.	2014	MNRF	Southgate
5mContour	5 m Contour Intervals	2014	MNRF	Southgate
Lots_Concessions	Lot and Concessions	2014	MNRF	Southgate
Railway	Railway centrelines	2014	MNRF	Southgate
Roads	Hwy/Local/Secondary/Primary Roads	2014	MNRF	Southgate
Utility_Line	Utility Lines	2014	MNRF	Southgate
Water_Body	Ontario Water Bodies Note: This information has been updated to reflect the results of the water assessment field investigations.	2014	MNRF	Southgate
Airport	Ontario Airports and Airfields	2014	MNRF	Southgate
Ansi	Area of Natural and Scientific Interest	2104	MNRF	Southgate
County of Grey Official Plan	Appendix B Constraint Mapping	2015	County of Grey	Southgate

APPENDIX C

Species



APPENDIX C1

Species Tables

Table C1: Vascular Plant and Bryopyhte Species Identified as Potentially Occurring in the General Area of the Project Location

Scientific Name	Common Name	Conservation Status					Information Source	
		National	Provincial		Coefficient of Conservation	Coefficient of Wetness	NHIC ⁴	MNRF ⁵
		SARA ¹	ESA, 2007 ²	SRank ³				
VASCULAR PLANTS & BRYOPYHTES								
<i>Lithospermum latifolium</i>	American Gromwell*	---	---	S3	9	5	•	
<i>Asplenium scolopendrium americanum</i>	American Hart's Tongue Fern*	SC	SC	S3	10	5		•
<i>Polystichum braunii</i>	Braun's Holly Fern*	---	---	S3	9	5	•	
<i>Arisaema dracontium</i>	Green Dragon*	SC	SC	S3	9	-3	•	
<i>Erigenia bulbosa</i>	Harbinger-of-Spring*	---	---	S3	9	5	•	
<i>Asplenium scolopendrium var. americanum</i>	Hart's Tongue Fern*	SC	SC	S3	10	5	•	
<i>Potamogeton hillii</i>	Hill's Pondweed*	SC	SC	S2	8	-5	•	
<i>Botrychium rugulosum</i>	Rugalose Grapefern*	---	---	S2	6	5	•	
<i>Monarda didyma</i>	Scarlet Beebalm*	---	---	S3	8	8	•	
<i>Sphenopholis nitida</i>	Shiny Wedge Grass*	---	---	S1	10	5	•	
<i>Lithospermum parviflorum</i>	Soft-hairy Gromwell* False	---	---	S2	---	---	•	
<i>Arnoglossum plantagineum</i>	Tuberous Plantain* Indian-	---	SC	---	---	---	•	

¹Species at Risk Act; ²Endangered Species Act; ³SRank Code (see below); ⁴MNRF NHIC Database; ⁵MNRF District Office. For all codes, please see **Appendix C2**. • denotes occurrence record; --- denotes no information, no status or not applicable; * denotes Species of Conservation Concern.

Table C2: Wildlife Species Identified as Potentially Occurring in the General Area of the Project Location

Scientific Name	Common Name	Conservation Status			Information Source						
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³							
BIRDS											
<i>Empidonax alnorum</i>	Alder Flycatcher	---	---	S5B		•					
<i>Botaurus lentiginosus</i>	American Bittern	---	---	S4B		•					
<i>Anas rubripes</i>	American Black Duck	---	---	S4		•					
<i>Fulica americana</i>	American Coot	---	---	S4B		•					
<i>Corvus brachyrhynchos</i>	American Crow	---	---	S5B		•					
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B		•					
<i>Falco sparverius</i>	American Kestrel	---	---	S4		•					
<i>Setophaga ruticilla</i>	American Redstart	---	---	S5B		•					
<i>Turdus migratorius</i>	American Robin	---	---	S5B		•					
<i>Anas americana</i>	American Wigeon	---	---	S4		•					
<i>Scolopax minor</i>	American Woodcock	---	---	S4B		•					
<i>Haliaeetus leucocephalus</i>	Bald Eagle*	---	SC	S4B, SZN							
<i>Icterus galbula</i>	Baltimore Oriole	---	---	S4B		•					
<i>Ceryle alcyon</i>	Belted Kingfisher	---	---	S4B		•					

Scientific Name	Common Name	Conservation Status			Information Source						
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Chlidonias niger</i>	Black Tern*	---	SC	S3B	•	•					
<i>Mniotilta varia</i>	Black-and-white Warbler	---	---	S5B		•					
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	---	---	S5B		•					
<i>Dendroica fusca</i>	Blackburnian Warbler	---	---	S5B		•					
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5		•					
<i>Nycticorax nycticorax</i>	Black-Crowned Night Heron*	---	---	S3B, S3N		•					
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	---	---	S5B		•					
<i>Dendroica virens</i>	Black-throated Green Warbler	---	---	S5B		•					
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher	---	---	S4B		•					
<i>Vireo solitarius</i>	Blue-headed Vireo	---	---	S5B		•					
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5		•					
<i>Anas discors</i>	Blue-winged Teal	---	---	S4		•					
<i>Vermivora pinus</i>	Blue-winged Warbler	---	---	S4B		•					
<i>Buteo platypterus</i>	Broad-winged Hawk	---	---	S5B		•					
<i>Certhia americana</i>	Brown Creeper	---	---	S5B		•					
<i>Toxostoma rufum</i>	Brown Thrasher	---	---	S4B		•					
<i>Molothrus ater</i>	Brown-headed Cowbird	---	---	S4B		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Branta canadensis</i>	Canada Goose	---	---	S5		•					
<i>Cardellina canadensis</i>	Canada Warbler*	THR	SC	S4B		•					
<i>Aythya valisineria</i>	Canvasback*	---	---	S1B, S4N		•					
<i>Thryothorus ludovicianus</i>	Carolina Wren	---	---	S4		•					
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B		•					
<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	---	---	S5B		•					
<i>Spizella passerina</i>	Chipping Sparrow	---	---	S5B		•					
<i>Spizella pallida</i>	Clay-coloured Sparrow	---	---	S4B		•					
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	---	---	S4B		•					
<i>Quiscalus quiscula</i>	Common Grackle	---	---	S5B		•					
<i>Gavia immer</i>	Common Loon	---	---	S5B, S5N		•					
<i>Mergus merganser</i>	Common Merganser	---	---	S5B, S5N		•					
<i>Gallinula chloropus</i>	Common Moorhen	---	---	S4B, SZN		•					
<i>Chordeiles minor</i>	Common Nighthawk*	THR	SC	S4B		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Corvus corax</i>	Common Raven	---	---	S5		•					
<i>Gallinago gallinago</i>	Common Snipe (Wilson's Snipe)	---	---	S5B, SZN		•					
<i>Geothlypis trichas</i>	Common Yellowthroat	---	---	S5B		•					
<i>Accipiter cooperii</i>	Cooper's Hawk	---	---	S4B, SZN		•					
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	---	---	S5B		•					
<i>Picoides pubescens</i>	Downy Woodpecker	---	---	S5		•					
<i>Sialia sialis</i>	Eastern Bluebird	---	---	S5B		•					
<i>Tyrannus tyrannus</i>	Eastern Kingbird	---	---	S4B		•					
<i>Sayornis phoebe</i>	Eastern Phoebe	---	---	S5B		•					
<i>Otus asio</i>	Eastern Screech-owl	---	---	S4		•					
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	---	---	S4B		•					
<i>Contopus virens</i>	Eastern Wood-pewee*	---	SC	S4B		•					
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA		•					
<i>Spizella pusilla</i>	Field Sparrow	---	---	S4B		•					
<i>Anas strepera</i>	Gadwall	---	---	S4B		•					
<i>Regulus satrapa</i>	Golden-crowned Kinglet	---	---	S5B		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	---	---	S4B, SZN		•					
<i>Dumetella carolinensis</i>	Gray Catbird	---	---	S4B		•					
<i>Ardea herodias</i>	Great Blue Heron	---	---	S4		•					
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	---	---	S4B		•					
<i>Casmerodius albus</i>	Great Egret*	---	---	S2B		•					
<i>Bubo virginianus</i>	Great Horned Owl	---	---	S4		•					
<i>Butorides virescens</i>	Green Heron	---	---	S4B		•					
<i>Anas crecca</i>	Green-winged Teal	---	---	S4		•					
<i>Picoides villosus</i>	Hairy Woodpecker	---	---	S5		•					
<i>Catharus guttatus</i>	Hermit Thrush	---	---	S5B		•					
<i>Larus argentatus</i>	Herring Gull	---	---	S5B, S5N		•					
<i>Lophodytes cucullatus</i>	Hooded Merganser	---	---	S5B, S5N		•					
<i>Wilsonia citrina</i>	Hooded Warbler*	THR	SC	S3B	•						
<i>Eremophila alpestris</i>	Horned Lark	---	---	S5B, SZN		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Carpodacus mexicanus</i>	House Finch	---	---	SNA		•					
<i>Passer domesticus</i>	House Sparrow	---	---	SNA		•					
<i>Troglodytes aedon</i>	House Wren	---	---	S5B		•					
<i>Passerina cyanea</i>	Indigo Bunting	---	---	S4B		•					
<i>Charadrius vociferus</i>	Killdeer	---	---	S5B, S5N		•					
<i>Empidonax minimus</i>	Least Flycatcher	---	---	S4B		•					
<i>Aythya affinis</i>	Lesser Scaup	---	---	S4		•					
<i>Melospiza lincolnii</i>	Lincoln's Sparrow	---	---	S5B		•					
<i>Asio otus</i>	Long-eared Owl	---	---	S4		•					
<i>Dendroica magnolia</i>	Magnolia Warbler	---	---	S5B		•					
<i>Anas platyrhynchos</i>	Mallard	---	---	S5		•					
<i>Cistothorus palustris</i>	Marsh Wren	---	---	S4B		•					
<i>Falco columbarius</i>	Merlin	---	---	S5B		•					
<i>Zenaida macroura</i>	Mourning Dove	---	---	S5		•					
<i>Oporornis philadelphia</i>	Mourning Warbler	---	---	S4B		•					
<i>Cygnus olor</i>	Mute Swan	---	---	SNA		•					
<i>Vermivora ruficapilla</i>	Nashville Warbler	---	---	S5B		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Cardinalis cardinalis</i>	Northern Cardinal	---	---	S5		•					
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B		•					
<i>Accipiter gentilis</i>	Northern Goshawk	---	---	S4		•					
<i>Circus cyaneus</i>	Northern Harrier	---	---	S4B		•					
<i>Mimus polyglottos</i>	Northern Mockingbird	---	---	S4		•					
<i>Anas acuta</i>	Northern Pintail	---	---	S5		•					
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	---	---	S4B		•					
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	---	---	S4		•					
<i>Anas clypeata</i>	Northern Shoveler	---	---	S4		•					
<i>Seiurus noveboracensis</i>	Northern Waterthrush	---	---	S5B		•					
<i>Contopus cooperi</i>	Olive-sided Flycatcher*	THR	SC	S4B		•					
<i>Icterus spurius</i>	Orchard Oriole	---	---	S4B		•					
<i>Pandion haliaetus</i>	Osprey	---	---	S5B		•					
<i>Seiurus aurocapillus</i>	Ovenbird	---	---	S4B		•					
<i>Podilymbus podiceps</i>	Pied-billed Grebe	---	---	S4B, S4N		•					
<i>Dryocopus pileatus</i>	Pileated Woodpecker	---	---	S5		•					
<i>Carduelis pinus</i>	Pine Siskin	---	---	S4B		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Dendroica pinus</i>	Pine Warbler	---	---	S5B		•					
<i>Carpodacus purpureus</i>	Purple Finch	---	---	S4B		•					
<i>Progne subis</i>	Purple Martin	---	---	S4B		•					
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	---	---	S4		•					
<i>Mergus serrator</i>	Red-breasted Merganser	---	---	S4B, S5N		•					
<i>Sitta canadensis</i>	Red-breasted Nuthatch	---	---	S5		•					
<i>Vireo olivaceus</i>	Red-eyed Vireo	---	---	S5B		•					
<i>Aythya americana</i>	Redhead*	---	---	S2B, S4N		•					
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker*	THR	SC	S4B		•					
<i>Podiceps grisegena</i>	Red-necked Grebe*	---	---	S3B, S4N		•					
<i>Buteo lineatus</i>	Red-shouldered Hawk*	SC	---	S4B		•					
<i>Buteo jamaicensis</i>	Red-tailed Hawk	---	---	S5		•					
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	---	---	S4		•					
<i>Larus delawarensis</i>	Ring-billed Gull	---	---	S5B, S4N		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Aythya collaris</i>	Ring-necked Duck	---	---	S5		•					
<i>Phasianus colchicus</i>	Ring-necked Pheasant	---	---	SNA		•					
<i>Columba livia</i>	Rock Dove	---	---	SNA		•					
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	---	---	S4B		•					
<i>Regulus calendula</i>	Ruby-crowned Kinglet	---	---	S4B		•					
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	---	---	S5B		•					
<i>Oxyura jamaicensis</i>	Ruddy Duck	---	---	S4B, S4N		•					
<i>Bonasa umbellus</i>	Ruffed Grouse	---	---	S4		•					
<i>Grus canadensis</i>	Sandhill Crane	---	---	S5B		•					
<i>Passerculus sandwichensis</i>	Savannah Sparrow	---	---	S4B		•					
<i>Piranga olivacea</i>	Scarlet Tanager	---	---	S4B		•					
<i>Cistothorus platensis</i>	Sedge Wren	---	---	S4B		•					
<i>Accipiter striatus</i>	Sharp-shinned Hawk	---	---	S5B, SZN		•					
<i>Asio flammeus</i>	Short-eared Owl*	SC	SC	S2N, S4B	•	•					
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B		•					

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<i>Porzana carolina</i>	Sora	---	---	S4B, SZN		•					
<i>Actitis macularia</i>	Spotted Sandpiper	---	---	S5		•					
<i>Melospiza georgiana</i>	Swamp Sparrow	---	---	S5B		•					
<i>Tachycineta bicolor</i>	Tree Swallow	---	---	S4B		•					
<i>Cygnus buccinator</i>	Trumpeter Swan	---	---	S4		•					
<i>Cathartes aura</i>	Turkey Vulture	---	---	S5B		•					
<i>Bartamia longicauda</i>	Upland Sandpiper	---	---	S4B		•					
<i>Catharus fuscenscens</i>	Veery	---	---	S4B		•					
<i>Pooecetes gramineus</i>	Vesper Sparrow	---	---	S4B		•					
<i>Rallus limicola</i>	Virginia Rail	---	---	S5B		•					
<i>Vireo gilvus</i>	Warbling Vireo	---	---	S5B		•					
<i>Sturnella neglecta</i>	Western Meadowlark*	---	---	S3B		•					
<i>Sitta carolinensis</i>	White-breasted Nuthatch	---	---	S5		•					
<i>Zonotrichia albicollis</i>	White-throated Sparrow	---	---	S5B		•					
<i>Meleagris gallopavo</i>	Wild Turkey	---	---	S5		•					
<i>Empidonax traillii</i>	Willow Flycatcher	---	---	S5B, SZN		•					

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Phalaropus tricolor</i>	Wilson's Phalarope*	---	---	S3B		•					
<i>Troglodytes troglodytes</i>	Winter Wren	---	---	S5B		•					
<i>Aix sponsa</i>	Wood Duck	---	---	S5		•					
<i>Hylocichla mustelina</i>	Wood Thrush*	---	SC	S4B		•					
<i>Dendroica petechia</i>	Yellow Warbler	---	---	S5B		•					
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	---	---	S5B		•					
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	---	---	S4B, SZN		•					
<i>Dendroica coronata</i>	Yellow-rumped Warbler	---	---	S5B		•					
<i>Vireo flavifrons</i>	Yellow-throated Vireo	---	---	S4B		•					
MAMMALS											
<i>Castor canadensis</i>	American Beaver	---	---	S5			•				
<i>Ursus americanus</i>	American Black Bear	---	---	S5			•				
<i>Mustela vison</i>	American Mink	---	---	S5			•				
<i>Sorex hoyi</i>	American Pygmy Shrew	---	---	S4			•				
<i>Eptesicus fuscus</i>	Big Brown Bat	---	---	S5			•				
<i>Lynx rufus</i>	Bobcat	---	---	S4			•				
<i>Sorex cinereus</i>	Cinereus (Masked) Shrew	---	---	S5			•				

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<i>Ondatra zibethicus</i>	Common Muskrat	---	---	S5			•				
<i>Canis latrans</i>	Coyote	---	---	S5			•				
<i>Peromyscus maniculatus</i>	Deer Mouse	---	---	S5			•				
<i>Tamias striatus</i>	Eastern Chipmunk	---	---	S5			•				
<i>Sylvilagus floridanus</i>	Eastern Cottontail	---	---	S5			•				
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	---	---	S5			•				
<i>Mustela erminea</i>	Ermine	---	---	S5			•				
<i>Parascalops breweri</i>	Hairy-tailed Mole	---	---	S4			•				
<i>Lasiurus cinereus</i>	Hoary Bat	---	---	S4			•				
<i>Mustela nivalis</i>	Least Weasel	---	---	SU			•				
<i>Mustela frenata</i>	Long-tailed Weasel	---	---	S4			•				
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	---	---	S5			•				
<i>Microtus pennsylvanicus</i>	Meadow Vole	---	---	S5			•				
<i>Erethizon dorsatum</i>	North American Porcupine	---	---	S5			•				
<i>Lontra canadensis</i>	Northern River Otter	---	---	S5			•				
<i>Blarina brevicauda</i>	Northern Short-tailed Shrew	---	---	S5			•				
<i>Procyon lotor</i>	Raccoon	---	---	S5			•				
<i>Vulpes vulpes</i>	Red Fox	---	---	S5			•				


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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	---	---	S5			•				
<i>Lasionycteris noctivagans</i>	Silver Haired Bat	---	---	S4			•				
<i>Sorex fumeus</i>	Smoky Shrew	---	---	S5			•				
<i>Lepus americanus</i>	Snowshoe Hare	---	---	S5			•				
<i>Glaucomys volans</i>	Southern Flying Squirrel	---	---	S4			•				
<i>Clethrionomys gapperi</i>	Southern Red-backed Vole	---	---	S5			•				
<i>Condylura cristata</i>	Star-nosed Mole	---	---	S5			•				
<i>Mephitis mephitis</i>	Striped Skunk	---	---	S5			•				
<i>Perimyotis subflavus</i>	Tri-Coloured Bat*	END	---	S3?			•				
<i>Peromyscus leucopus</i>	White-footed Mouse	---	---	S5			•				
<i>Odocoileus virginianus</i>	White-tailed Deer	---	---	S5			•				
<i>Marmota monax</i>	Woodchuck	---	---	S5			•				
<i>Napaeozapus insignis</i>	Woodland Jumping Mouse	---	---	S5			•				
HERPETOFAUNA											
<i>Rana catesbeiana</i>	American Bullfrog	---	---	S4				•			
<i>Bufo americanus</i>	American Toad	---	---	S5				•			
<i>Necturus maculosus</i>	Common Mudpuppy	---	---	S4				•			
<i>Chelydra serpentina</i>	Common Snapping Turtle*	SC	SC	S4	•			•			

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		SARA ¹	ESA, 2007 ²	SRank ³							
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake	---	---	S5				•			
<i>Lampropeltis triangulum</i>	Eastern Milksnake*	SC	SC	S3				•			•
<i>Notophthalmus viridescens louisianensis</i>	Eastern (Central) Newt	---	---	S4?				•			
<i>Thamnophis sauritus septentrionalis</i>	Eastern Ribbonsnake*	SC	SC	S3				•			•
<i>Hyla versicolor</i>	Gray Treefrog	---	---	S5				•			
<i>Rana clamitans</i>	Green Frog	---	---	S5				•			
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	---	---	S5				•			
<i>Rana septentrionalis</i>	Mink Frog	---	---	S5				•			
<i>Storeria dekayi</i>	Northern Brown Snake	---	---	S5				•			
<i>Rana pipiens</i>	Northern Leopard Frog	---	---	S5				•			
<i>Graptemys geographica</i>	Northern Map Turtle*	SC	SC	S3				•			
<i>Plethodon cinereus</i>	Northern (Eastern) Redback Salamander	---	---	S5				•			
<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake	---	---	S5				•			
<i>Nerodia sipedon sipedon</i>	Northern Watersnake	---	---	S5				•			

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<i>Rana palustris</i>	Pickerel Frog	---	---	S4				•			
<i>Ambystoma maculatum</i>	Spotted Salamander	---	---	S4				•			
<i>Pseudacris crucifer</i>	Spring Peeper	---	---	S5				•			
<i>Pseudacris triseriata</i>	Western Chorus Frog* (Great Lakes-St. Lawrence Population)	THR	---	S3				•			
<i>Rana sylvatica</i>	Wood Frog	---	---	S5				•			
INSECTS											
<i>Epitheca canis</i>	Beaverpond Baskettail	---	---	S5					•		
<i>Ladona julia</i>	Chalk-fronted Corporal	---	---	S5					•		
<i>Somatochlora tenebrosa</i>	Clamp-tipped Emerald*	---	---	S2S3	•						
<i>Plathemis lydia</i>	Common Whitetail	---	---	S5					•		
<i>Cordulegaster diastatops</i>	Delta-spotted Spiketail	---	---	S4					•		
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	---	---	S5					•		
<i>Calopteryx maculata</i>	Ebony Jewelwing	---	---	S5					•		
<i>Somatochlora forcipata</i>	Forcipate Emerald*	---	---	S3					•		
<i>Libellula quadrimaculata</i>	Four-spotted Skimmer	---	---	S5					•		
<i>Gomphaeschna furcillata</i>	Harlequin Darner*	---	---	S3	•						
<i>Danaus plexippus</i>	Monarch*	---	SC	S2N,							•

Scientific Name	Common Name	Conservation Status			Information Source						
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNRF ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³							
				S4B							
<i>Pieris oleracea</i>	Mustard White	---	---	S4						•	
<i>Calopteryx aequabilis</i>	River Jewelwing	---	---	S5					•		
<i>Aeshna umbrosa</i>	Shadow Darner	---	---	S5					•		
<i>Satyrrium liparops</i>	Striped Hairstreak	---	---	S5						•	
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	---	---	S5					•		
<i>Sympetrum obtrusum</i>	White-faced Meadowhawk	---	---	S5					•		

¹Species at Risk Act; ²Endangered Species Act; ³SRank Code (see below); ⁴MNRF NHIC Database; ⁵Ontario Breeding Bird Atlas; ⁶Dobbyn (1994); ⁷Ontario Nature (2010) Ontario Reptile and Amphibian Atlas; ⁸Ontario Odonata Atlas; ⁹Toronto Entomologists Association (2013) Ontario Butterfly Atlas Online. For all codes, please see **Appendix C2**. • denotes occurrence record and/or project location includes species range; --- denotes no information, no status or not applicable; * denotes Species of Conservation Concern.



APPENDIX C2

Species Codes

Overview of Codes for the Conservation Status of Species

Federal Conservation Status

Federal Status: Status assigned by the Committee on the Status of Endangered Wildlife in Canada. (COSEWIC, 2007) and listed under the *Species at Risk Act*

- EXT Extinct. A wildlife species that no longer exists.
- EXP Extirpated. A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
- END Endangered. A wildlife species facing imminent extirpation or extinction.
- THR Threatened. A wildlife species likely to become endangered if limiting factors are not reversed.
- SC Special Concern. A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
- DD Data Deficient - A wildlife species for which there is inadequate information to make a direct, or indirect, assessment of its risk of extinction.
- NAR Not At Risk. A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Provincial Conservation Status

Provincial Status: Status assigned by the Ontario Ministry of Natural Resources (OMNR, 2006) under the *Endangered Species Act, 2007*

- EXT Extinct. A species that no longer exists anywhere.
- EXP Extirpated. A species that no longer exists in the wild in Ontario but still occurs elsewhere.
- END Endangered. A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.
- THR Threatened. A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
- SC Special Concern. A species with characteristics that make it sensitive to human activities or natural events.

- DD Data Deficient. A species for which there is insufficient information for a provincial status recommendation.
- NAR Not At Risk. A species that is currently not listed as risk.

Provincial (S) Rank

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (2007) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.

- S1 *Critically Imperiled.* Extremely rare in Ontario; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.
- S2 *Imperiled.* Very rare in Ontario; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.
- S3 *Vulnerable.* Rare to uncommon in Ontario; usually between 20 & 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.
- S4 *Apparently Secure.* Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.
- S5 *Secure.* Very common and demonstrably secure in Ontario.
- SH Historically known from Ontario, but not verified recently (typically not recorded in the province in the last 20 years); however suitable habitat is thought to be still present in the province and there is reasonable expectation that the species may be rediscovered.

- SR Reported for Ontario, but without persuasive documentation which would provide a basis for either accepting or rejecting the report.
- SRF Reported falsely from Ontario.
- SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.
- SE Exotic; not believed to be a native component of Ontario's flora.
- S? Not Ranked Yet, or if following a ranking, Rank Uncertain (e.g. S3?). S? Species have not had a rank assigned.
- SU Unrankable, often because of low search effort or cryptic nature of the species, there is insufficient information available to assign a more accurate rank; more data is needed.

Coefficient of Conservatism (CC) Definition (Plants)

Each native taxon was assigned a rank of 0 to 10 ("coefficient of conservatism") based on its degree of fidelity to a range of synecological parameters. Plants found in a wide variety of plant communities, including disturbed sites, were assigned ranks of 0 to 3. Taxa that typically are associated with a specific plant community, but tolerate moderate disturbance, were assigned ranks of 4 to 6. Rankings of 7 to 8 were applied to those taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance. Those plants with high degrees of fidelity to a narrow range of synecological parameters were assigned a value of 9 to 10

Wetness Index (CW) (Plants)

The wetness index gives an indication of where plant species are typically found. A wetness value (coefficient of wetness) between -5 and 5. A value of -5 was assigned to Obligate Wetland (OBL) species and a value of 5 to Obligate Upland species (UPL), with intermediate values assigned to the remaining categories. The wetland categories and their corresponding values are as follows:

These categories are defined as follows:

OBL	-5	OBL	Obligate	Occurs almost always in wetlands under
		Wetland		natural conditions (estimated >

				99% probability).
FACW+	-4	FACW	Facultative Wetland	Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability).
FACW	-3			
FACW-	-2			
FAC +	-1	FAC	Facultative	Equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability).
FAC 0				
FAC-	1			
FACU+	2	FACU	Facultative Upland	Occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33 % probability).
FACU	3			
FACU-	4			
UPL 5		UPL	Obligate Upland	Occurs almost never in wetlands under natural conditions (estimated <1 % probability).

SITE INVESTIGATION REPORT

Southgate Solar Project

April 2015

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1. INTRODUCTION

Southgate Solar LP proposes to develop a solar facility with a maximum name plate capacity of 50 megawatts alternating current (MWac), located near Mount Forest, in the Township of Southgate, County of Grey, Ontario (**Figure 1**). The renewable energy facility will be known as the Southgate Solar Project (“the Project”).

Southgate Solar LP has initiated the Project through a Power Purchase Agreement (PPA) with the Ontario Power Authority. The Project will require approval under Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Part V.0.1 of the *Ontario Environmental Protection Act*.

O. Reg. 359/09 requires that all renewable energy projects conduct a site investigation for all natural heritage features that fall within the Project Location or the prescribed setback area (REA Section 26). This *Natural Heritage Assessment (NHA) Site Investigation Report* was completed in partial fulfillment of the regulatory requirements for the REA process. Known natural features within the Project Location and prescribed setback area have been outlined in the *NHA Records Review Report* for this project. These reports will be submitted to the Ministry of Natural Resources and Forestry (MNRF) for review and comment, as required in O. Reg. 359/09. Discussion of Species at Risk, fish habitat and other information needs, as outlined in the MNRF’s *Approval and Permitting Requirements Document (APRD)* for Renewable Energy (MNRF 2009), are discussed in a separate report, under direction from the MNRF and in compliance with the REA and other applicable legislation.

Table 1: Checklist for Requirements under O.Reg. 359/09- Natural Heritage Assessment- Site Investigation

Required Documentation	Location in Report
A site investigation in accordance with the Table in section 26 of O. Reg. 359/09 was conducted, either by visiting the site or by an alternative investigation of the site, for the purpose of determining:	
(a) whether the results of the analysis summarized in the “records review” report are correct or require correction, and identifying any required corrections.	Table 11: Summary of Amendments to the Records Review
(b) whether any additional natural features exist, other than those that were identified in the “records review” report.	Table 11: Summary of Amendments to the Records Review
(c) the boundaries, located within 50 or 120 m of the Project Location, of any natural feature that was identified in the records review or the site investigation.	Figures 5-7P
(d) the distance from the Project Location to the boundaries determined under clause (c).	Figures 5-7P

Southgate Solar Project
Natural Heritage Assessment Site Investigation Report

Required Documentation	Location in Report
A report was prepared and submitted to the Ministry of Natural Resources and Forestry that sets out the following:	
(a) A summary of any corrections to the “records review” report and the determinations made as a result of conducting the site investigation.	Table 11: <i>Summary of Amendments to the Records Review</i>
(b) Information establishing the type of each natural feature identified in the records review and in the site investigation.	Section 7, <i>Site Investigation Results</i>
(c) A map showing: <ul style="list-style-type: none"> i. the boundaries located within 50 or 120 m of the Project Location, of any natural feature that was identified in the records review or the site investigation ii. the location and type of each natural feature identified in relation to the Project Location iii. the distance from the Project Location to the boundaries determined under clause 1 (d) above 	Figures 5- 7P
(d) A summary of methods used to make observations for the purposes of the site investigation.	Section 6, <i>Site Investigation Methodology</i>
(e) The name and qualifications of any person conducting the site investigation.	Section 6.5, <i>Name and Qualifications of Site Investigators</i>
(f) If investigation was conducted by visiting the site: <ul style="list-style-type: none"> i. The dates and times of the beginning and completion of the site investigation ii. The duration of the site investigation iii. The weather conditions during the site investigation iv. Field notes kept by the person conducting the site investigation 	Section 7.1, <i>Site Investigation Dates, Times, Duration, and Weather Conditions</i> Appendix A
(g) If an alternative investigation of the site was conducted: <ul style="list-style-type: none"> i. The dates of the generation of the data used in the site investigation ii. 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 	Section 7.1, <i>Site Investigation Dates, Times, Duration, and Weather Conditions</i> <i>Section 7.1.1 Access to Adjacent Lands</i> Appendix D: Figure D1

2. THE PROPONENT

In the course of developing renewable energy projects, Southgate Solar LP strives to satisfy various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Southgate Solar LP aims to build long-term relationships with the communities that host its projects. Southgate Solar LP is committed to the health and welfare of the residents of the Township of Southgate, and to ensure that the Southgate Solar Project is successful for stakeholders.

Contact information for the Proponent is as follows:

Full Name of Company:	<u>Southgate Solar LP</u>
Prime Contacts:	<u>- Simon Kim, Project Manager</u> <u>- A. José De Armas, Manager, Project Development</u>
Address:	<u>2050 Derry Road West 2nd Floor, Mississauga, ON, L5N 0B9</u>
Telephone:	<u>(905) 501-5657</u>
Email:	<u>ssp@samsungrenewableenergy.ca</u>

Dillon Consulting Limited (Dillon) is the prime contractor for the preparation of this report. The contact at Dillon is:

Full Name of Company:	<u>Dillon Consulting Limited</u>
Prime Contact:	<u>Michael Enright, Project Manager</u>
Address:	<u>1155 North Service Road West, Unit 14, Oakville, Ontario, L6M 3E3</u>
Telephone:	<u>(905) 901-2912 ext. 3401</u>
Email:	<u>menright@dillon.ca</u>

3. PROJECT LOCATION

The proposed Class 3 Solar Facility is to be located within the Township of Southgate, in the County of Grey, approximately 11 kilometres north of the community of Mount Forest. **Figure 1** shows the general location of the Project in Southwestern Ontario. The proposed Project Location consists of approximately 235 hectares (581 acres) and is contained within an area bounded on the north by Southgate Road 24, Southgate Road 14 to the south, Southgate Road 47 to the east, and Highway 6 to the west. The proposed Project Location, consisting of multiple privately-owned parcels, is to be leased by Southgate Solar LP. It has an approximate centroid at the following geographic coordinates:

- Latitude: 44° 6' 7.78" N
- Longitude: 80° 44' 49.91" W

Figure 1 shows the general location of the Project in Ontario. The Project Location is defined in O. Reg. 359/09 to be “a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project”. **Figure 2** shows the Project Location as defined by O. Reg. 359/09. Project components, including solar modules and electrical facilities such as inverters, transformers, substations and electrical lines, will be located on private land. Areas within the Project Location but outside of the perimeter fence are “Areas of Operational Flexibility”. These areas have been reserved to accommodate other Project requirements (ex. stormwater measures, temporary laydown areas, etc.). This is discussed in greater detail on Section 4 of the *Project Description Report*.

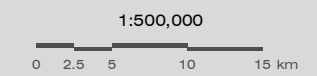
Figure 2 also includes the 50 m, 120 m and 300 m setbacks from the Project Location. Each setback distance is applicable to various components of the REA process. Setback development prohibitions for solar facilities are outlined in Part V, Sections 37 and 38 of O. Reg. 359/09 (revised in November 2012).

The results of the analysis and determinations made in the records review regarding known natural features are shown on **Figure 3**.



SOUTHGATE SOLAR PROJECT

**FIGURE 1
GENERAL PROJECT LOCATION**



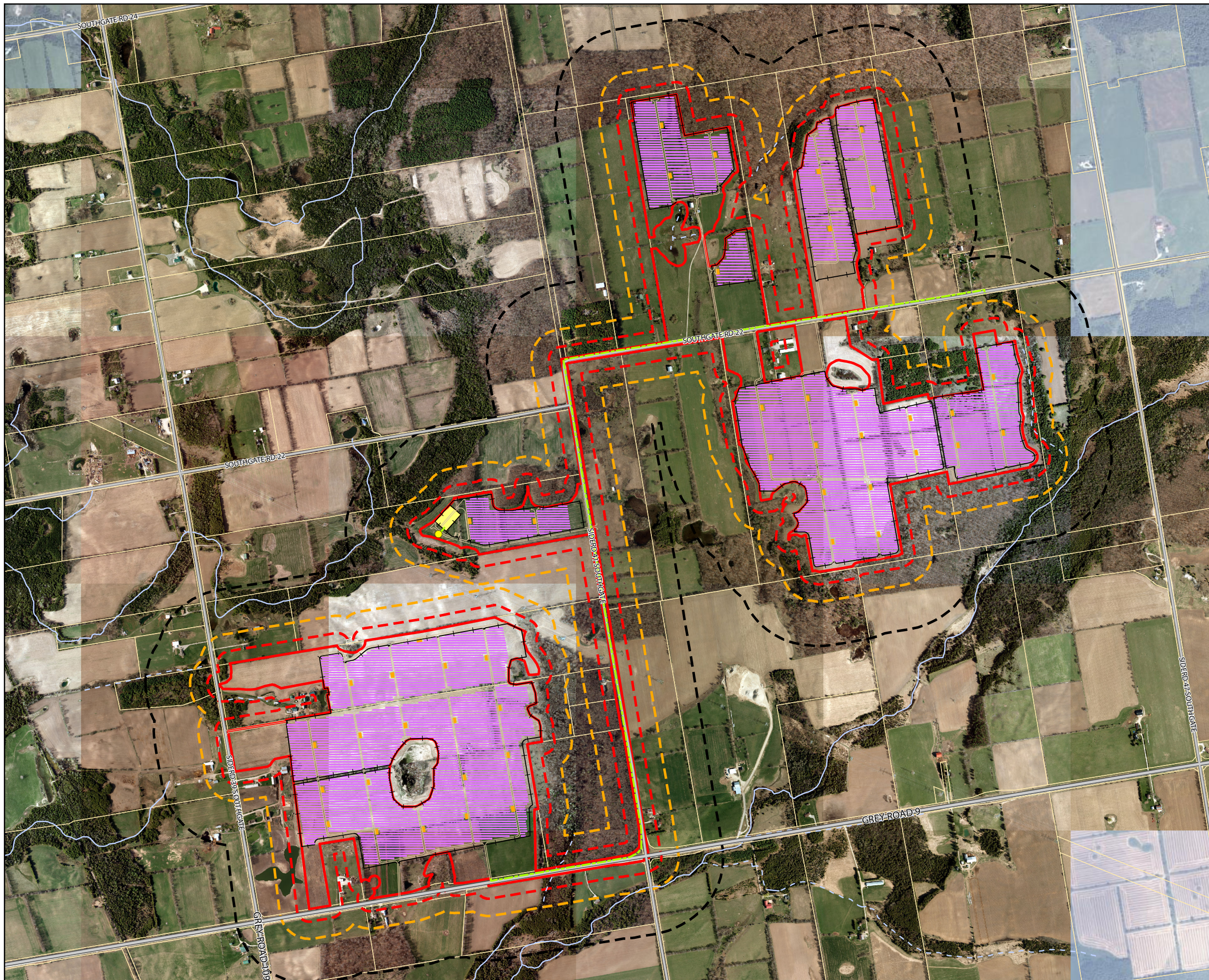
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 9/25/2014

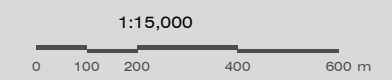


SOUTHGATE SOLAR PROJECT

**FIGURE 2
PROJECT LOCATION**

- Point of Common Coupling
- Overhead Cable
- Fence
- Access Road
- Inverter
- Solar Panel
- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Substation
- Parcel Boundary

The area between the fence line and the Project Location is the Area of Operational Flexibility.



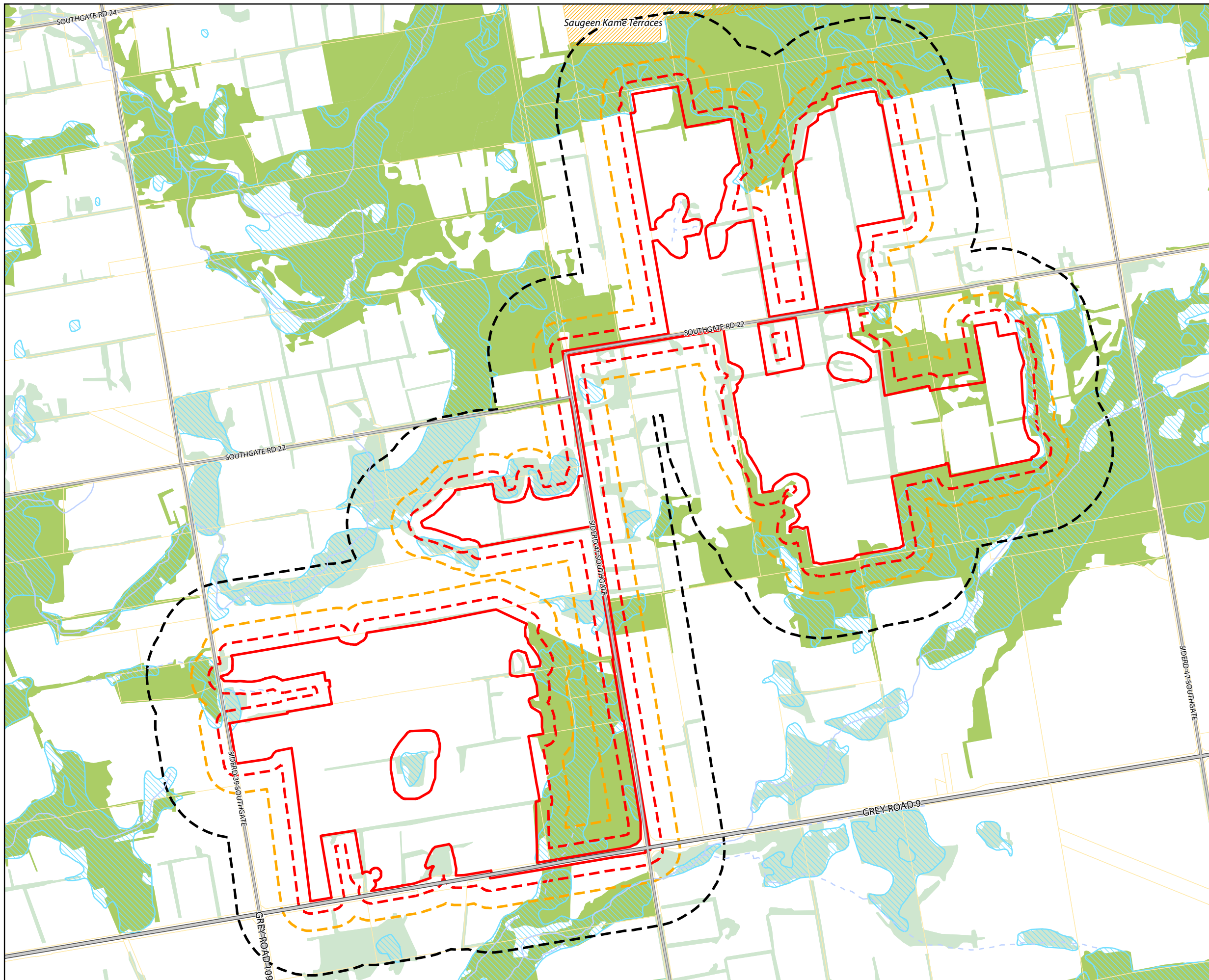
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



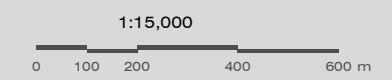
PROJECT: 149154
STATUS: DRAFT
DATE: 11/28/2014



SOUTHGATE SOLAR PROJECT

**FIGURE 3
RECORDS REVIEW**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- ANSI, Earth Science
- Unevaluated Wetland
- Grey County Significant Woodland
- Woodland



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 1/12/2015

4. RESULTS OF RECORDS REVIEW

As shown on **Figure 3**, a records review was completed according to Section 25 of O. Reg. 359/09. A summary of the determinations made during the records review is outlined in **Table 2**.

Table 2: Summary of Natural Heritage Assessment Records Review Determination

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
Provincial Parks and Conservation Reserves				
No known features identified within the Project Location or adjacent lands within 120 m				N
ANSI, Life Science				
No known features identified within the Project Location or adjacent lands within 120 m				N
ANSI, Earth Science				
Saugeen Kame Terraces Earth Science ANSI	LIO Mapping	Evaluated	Greater than 120 m from the Project Location	N
Wetlands				
Unevaluated Southern Wetlands	LIO Mapping	Unevaluated	Several within 120 m of the Project Location	Y
Woodlands				
Unevaluated Southern Woodlands	LIO Mapping	Unevaluated	Three within the Project Location. Several within 120 m of the Project Location.	Y
Southern Woodlands (previously evaluated as significant by Grey County)	Grey County Mapping	Evaluated	Four within the Project Location. Three within 120 m of the Project Location.	Y
Wildlife Habitat				
Seasonal Concentration Areas				
Waterfowl Stopover and Staging Areas (Terrestrial)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Waterfowl Stopover and Staging Areas (Aquatic)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Shorebird Migratory Stopover Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Raptor Wintering Area				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bat Hibernacula				

Southgate Solar Project
Natural Heritage Assessment Site Investigation Report

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bat Maternity Colonies				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bat Migratory Stopover Areas				
There are no MNRF identified Bat Migratory Stopover Areas within 120 m				N
Turtle Wintering Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Snake Hibernaculum				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Colonially- Nesting Bird Breeding Habitat (Bank and Cliff)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Colonially- Nesting Bird Breeding Habitat (Tree/ Shrubs)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Colonially- Nesting Bird Breeding Habitat (Ground)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Migratory Butterfly Stopover Areas				
The Project Location is not located within 5 km of Lake Ontario.				N
Landbird Migratory Stopover Areas				
The Project Location is not located within 5 km of Lake Ontario.				N
Deer Yarding Areas				
There are no Deer Yarding Areas (delineated by the MNRF) within 120 m				N
Deer Winter Congregation Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Rare Vegetation Communities				
Cliffs and Talus Slopes				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Alvar				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Old Growth Forest				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Savannah				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Tallgrass Prairie				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Other Rare Vegetation Communities				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Specialised Wildlife Habitat				
Waterfowl Nesting Area				

Southgate Solar Project
Natural Heritage Assessment Site Investigation Report

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location	Carried Forward to Site Investigation? Y/N
No known features identified within the Project Location or adjacent lands within 120 m				Y
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Woodland Raptor Nesting Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Turtle Nesting Areas				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Seeps and Springs				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Amphibian Breeding Habitat (Woodland)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Amphibian Breeding Habitat (Wetlands)				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Habitat of Species of Conservation Concern				
Marsh Bird Breeding Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Woodland Area- Sensitive Bird Breeding Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Open Country Breeding Bird Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Shrub/ Early Successional Bird Breeding Habitat				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Terrestrial Crayfish				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Special Concern and Rare Wildlife Species				
No known features identified within the Project Location or adjacent lands within 120 m; Species with the potential to occur in the general area are identified in Appendix C1				Y
Animal Movement Corridors				
Amphibian Movement Corridors				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Deer Movement Corridors				
No known features identified within the Project Location or adjacent lands within 120 m				Y
Provincial Plan Areas				
None applicable to the Project Location or setback areas				N

5. SITE INVESTIGATION PURPOSE

This site investigation was completed to analyze the accuracy of the determinations made in the records review. It is consistent with Section 26 of O. Reg. 359/09, which states that a person who proposes to engage in a [solar] renewable energy project shall ensure that a physical investigation of the air, land and water within 50 m of the Project Location is conducted for the purpose of determining:

- Whether the results of the analysis summarized in the report prepared under subsection 25 (3) [*NHA Records Review Report*] are correct or require correction, and identifying any required corrections.
- Whether any additional natural features exist, other than those that were identified in the report prepared under subsection 25 (3) [*NHA Records Review Report*].
- The boundaries, located within 50 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 [of the natural feature].

Species at Risk listed under the federal *Species at Risk Act* and provincial *Endangered Species Act, 2007*, with the potential to interact with the Project Location and/or adjacent lands, are being considered in consultation with the appropriate agency. Reporting related to the protection of Species at Risk is being provided to the appropriate agency under separate cover.

6. SITE INVESTIGATION METHODOLOGY

Based on analysis of the resources and records searched in the *NHA Records Review Report*, the determinations made with respect to natural features were the subject of multiple site investigations of the Project Location. These site investigations were also conducted to identify any natural features not identified during the records review. Where possible, site investigations focused on those areas within 50 m of Project components.

Table 3 outlines the method and/or procedure followed in order to determine the presence, absence and/or extent of a natural feature in the Project Location or 50 m setback. An outline of these methods is provided in greater detail in **Sections 6.1 to 6.4**.

Table 3: Overview of Methods Employed During the Site Investigation of Natural Features

Feature	Source of Information/Data				
	Consultation/ Records Review	ELC	Wetland Delineation	Wildlife Habitat Mapping	Incidental Vegetation/ Wildlife Survey
Wetlands	✓	✓	✓	✓	
Woodlands	✓	✓		✓	
Wildlife Habitat	✓	✓	✓	✓	✓

6.1 Ecological Land Classification

During field investigations, vegetation was characterized using the Ecological Land Classification System (ELC) for Southern Ontario (Lee et al. 1998). Where present, vegetation community boundaries were determined through the review of aerial photography, and then further refined through on-site field studies. Field studies involved identifying the dominant species for each vegetation cover type based on visual estimates of species abundances. The ELC system methodology recommends that a vegetation community be a minimum of 0.5 hectares in size before it is defined.

Vegetation communities have been mapped on aerial photography according to ELC nomenclature to graphically represent the specific spatial pattern in the vegetation cover according to species composition, physiognomy, and physical site characteristics. ELC information was used to identify treed communities. Areas of anthropogenic uses such as agriculture and urban land uses were also mapped to provide a complete account of existing conditions within the Project Location. Where site access was restricted, classification of vegetation communities was completed to the ecosite level, using air photo interpretation.

Soil profiles for ELC involved the examination of a 120 cm hand auger soil profiles. This allowed for the description of soil texture and site moisture characteristics which influence plant distributions and the resulting vegetation communities. Other physical traits such as topography and slope aspect were also noted within each community.

6.2 Wetland Boundary Delineation

Wetlands found within the Project Location and surrounding 50 m are required to be surveyed using protocols outlined in the Southern Manual of the Ontario Wetland Evaluation System (MNRF 2002) and are to be carried out by a MNRF certified evaluator. Wetlands within the 50 m setback area may be assumed provincially significant and assessed using Appendix C of the Natural Heritage Assessment Guide for Renewable Energy Projects (MNRF 2012). Applicable wetland boundaries within 50 m of the Project Location, or in close proximity to this setback, were delineated on accessible lands using the tracking function of a GPS unit. The wetland boundaries were delineated by following wetland indicator species and determining where vegetation consisted of 50 percent wetland species and 50 percent upland species in accordance with the Ontario Wetland Evaluation System (OWES) Southern Manual (MNRF 2013). Wetlands were then classified according to the dominant vegetation form.

6.3 Woodland Boundary Delineation

As detailed in the *NHA Records Review Report*, a search and analysis of the records and resources identified both unevaluated and evaluated woodlands in and within 120 m of the Project Location. The focus of the woodlands site investigation was to document the boundaries of woodland features identified during the records review and to determine if additional woodland features were present.

The woodland boundary was delineated along the edge of the drip-line. Woodlands that were separated by more than 20 m are considered separate woodlands. Woodland interior was determined by applying a 100 m buffer from the woodland edge and calculating the area. Information about the attributes and composition of the woodlands was taken from data collected and recorded in the field during ELC assessment.

6.4 Wildlife Habitat Identification Survey

The potential presence of wildlife habitat in the Project Location and adjacent lands, applicable to Ecoregion 6E, was assessed using the criteria outlined in Sections 4 – 7 and Appendix M, N, and Q of the Significant Wildlife Habitat Technical Guide (MNRF 2000) and the associated Ecoregion Criteria Schedule (MNRF 2012). This included further characterization of the Project Location and lands within 50 m for the presence of necessary habitat structure (e.g. permanent open water for green frogs, etc.) as well as habitat of appropriate size, shape and structure (e.g. interior forest) reasonable required for candidate significant wildlife to occur; as well as further investigation of ELC communities correlating to wildlife habitat listed in the Significant Wildlife Habitat 6E Ecoregion Criterion Schedule (MNRF 2012) to determine any candidate significant wildlife habitat. Criteria pertaining to each individual habitat type which were used in identification of candidate significant wildlife habitat are provided in **Table 9** in **Section 7.2.4**.

6.4.1 Incidental Wildlife Surveys

Incidental observations of vegetation, birds, herpetozoa, mammal and invertebrate species were recorded during all phases of fieldwork to assist in the identification of wildlife habitat within the Project Location and 50 m setback.

6.5 Name and Qualifications of Site Investigators

The names and qualifications of all site investigators are outlined in **Table 4** below. All site investigators listed below have been involved with the Project since the initiation of this work and have been involved in numerous renewable energy projects that have received approval under O. Reg. 359/09.

Table 4: Names and Qualifications of Site Investigators

Name:	Richard Baxter (RLB)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • B.Sc. (Resource Management- Fish and Wildlife), University of Northern British Columbia (2007) • Fish and Wildlife Technician Diploma, Sir Sandford Fleming College (2001) • ISA Certified Arborist (member- Ontario Chapter) • Affiliated with Ontario Field Ornithologists, Ontario Field Botanists, and Ontario Nature
Years of Experience	13 (over 30 renewable energy projects)
Project Role:	<ul style="list-style-type: none"> • ELC • Wildlife and Wildlife Habitat Surveys • Wetland Delineation • Incidental Wildlife Observations
Certifications:	<ul style="list-style-type: none"> • Ecological Land Classification for Southern Ontario (2009) • Ontario Wetland Evaluation System Certification (2011) • MNRF Bat Maternity Colony Training (2012) • MNRF Renewable Energy Approvals Natural Heritage Process Workshop (2011) • MNRF Wind Energy and Bats Seminar (2010) • Butternut Health Assessor Certification (2014)

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Name:	Jonathan Harris (JWH)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • Fish and Wildlife Technician Diploma • Fish and Wildlife Technology Advanced Diploma • Affiliated with Ontario Field Ornithologists, Ontario Field Botanists, Toronto Field Naturalists, and Ontario Nature
Years of Experience	<ul style="list-style-type: none"> • 8 (over 20 renewable energy projects)
Project Role:	<ul style="list-style-type: none"> • ELC • Wildlife and Wildlife Habitat Surveys • Wetland Delineation • Incidental Wildlife Observations
Certifications:	<ul style="list-style-type: none"> • Ecological Land Classification for Southern Ontario (2011) • Ontario Wetland Evaluation System Certification (2012) • MNRF Bat Maternity Colony Training (2012) • Butternut Health Assessor Certification (2014)
Name:	Jeremy Bannon (JBB)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • Diploma of Ecological Restoration and Rehabilitation, University of Waterloo
Years of Experience	<ul style="list-style-type: none"> • 2
Project Role:	<ul style="list-style-type: none"> • ELC • Wetland delineation
Certifications:	<ul style="list-style-type: none"> • Ecological Land Classification for Southern Ontario (2011)
Name:	Dana Cofell (DC)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • Aquaculture Technician Diploma, Sir Sandford Fleming College (1999) • Candidate for Environmental Management, University of Guelph (2015)
Years of Experience	<ul style="list-style-type: none"> • 5
Project Role:	<ul style="list-style-type: none"> • Wildlife Habitat Surveys (Colonially- Nesting Birds)
Certifications:	<ul style="list-style-type: none"> • Ecological Land Classification for Southern Ontario (2011)

7. SITE INVESTIGATION RESULTS

In addition to assessing if the results of the *NHA Records Review Report* were correct or required amendments, information relating to each natural feature within the Project Location and surrounding 50 m was collected, including the type, attributes, composition and function of the features. Site investigation information presented in the sections below details the presence, absence or non-detection of natural features, species and habitat identified during the records review as well as the potential for additional natural features. All field notes from the site investigation work are included in **Appendix A**.

7.1 Site Investigation Dates, Times, Duration, and Weather Conditions

As outlined in **Table 5**, site investigations of the project location were undertaken over a period of 5 months. The details of each site investigation completed in accordance with REA Section 26(3) are provided in **Table 5** and should be read concurrently with **Table 4**.

Table 5: Site Investigation Dates, Times, Duration and Weather Conditions

Date (2014)	Survey Type	Site Investigator	Start Time	Duration (hours)	Weather Conditions (Field Observations)			Weather Conditions (EC* Station)		
					Air Temp. (°C)	Wind (Beaufort Scale)	Cloud Cover (%)	Average Air Temp. (°C)	Wind (Speed/Direction)	Precipitation (mm)
May 1	High Level ELC**	JWH	10:00	8.5	7	1	100	8.8	41/23	2.0
May 2	High Level ELC**	JWH, RLB	07:30	10	9	1	100	6.9	<31	1.8
May 12	Snag Density Search	JWH, RLB	11:20	6	20-25	2-3	10-90	18.9	33/22	0
May 13	Snag Density Search	JWH	08:15	9	20-23	3	80-100	21.1	69/27	15.4
May 14	Snag Density Search	JWH	08:00	1.75	10	0	100	13.7	35/5	3.5

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Date (2014)	Survey Type	Site Investigator	Start Time	Duration (hours)	Weather Conditions (Field Observations)			Weather Conditions (EC* Station)		
					Air Temp. (°C)	Wind (Beaufort Scale)	Cloud Cover (%)	Average Air Temp. (°C)	Wind (Speed/Direction)	Precipitation (mm)
June 5	ELC/ Wetland Delineation	RLB	12:15	3.5	20	3	20	12.3	41/36	0
June 10	ELC/Wetland Delineation	RLB	8:45	6.25	20	2	20	19.7	<31	0
June 19	ELC/ Wetland Delineation	RLB, JWH	11:45	4.25	20	3	20	16.7	32/6	0
June 26	ELC/ Wetland Delineation	JWH	10:00	5.5	28	2	30	19.5	<31	0
June 27	ELC/ Wetland Delineation	JWH	9:30	4	26	2	40	19.9	<31	0
July 4	ELC/ Wetland Delineation	RLB	16:45	1.5	20	3	10	13.8	<31	0
July 23	ELC/ Wetland Delineation	RLB, JBB	09:15	6.5	20	1-3	100	16.7	37/36	0
Sept 10	ELC/ Tree Height Assessment	RLB	16:30	3.5	20	2-3	100	18.2	54/19	22.6
Sept 12	Wetland Delineation, Vegetation	RLB	8:30	10.5	15	2	100	9.7	<31	0
Sept 13	Vegetation	RLB	8:00	8	10	2	100	8.3	<31	7.7
Sept 16	ELC, Vegetation	RLB	9:00	7	20	1	10	10	32/29	0.3
Sept 30	ELC	RLB	07:00	3	N/A	N/A	100	16.3	<31	10.6
October 8	Wildlife	DC	12:00	3	10	4	100	6.5	27/52	0.3
Total Duration of Field Work				111.75 hours						

*Closest Environment Canada (EC) Weather Station is in Mount Forest, Ontario. All EC Data refers to daily values; n/a indicates the information was not available from an Environment Canada weather station from the date/time of field work. An MNR certified wetland evaluator will confirm the delineation of wetland boundaries prior to construction. **During High Level ELC, delineation of polygons was completed only. More detailed ELC followed during later site visits.

7.1.1 Alternative Site Investigation

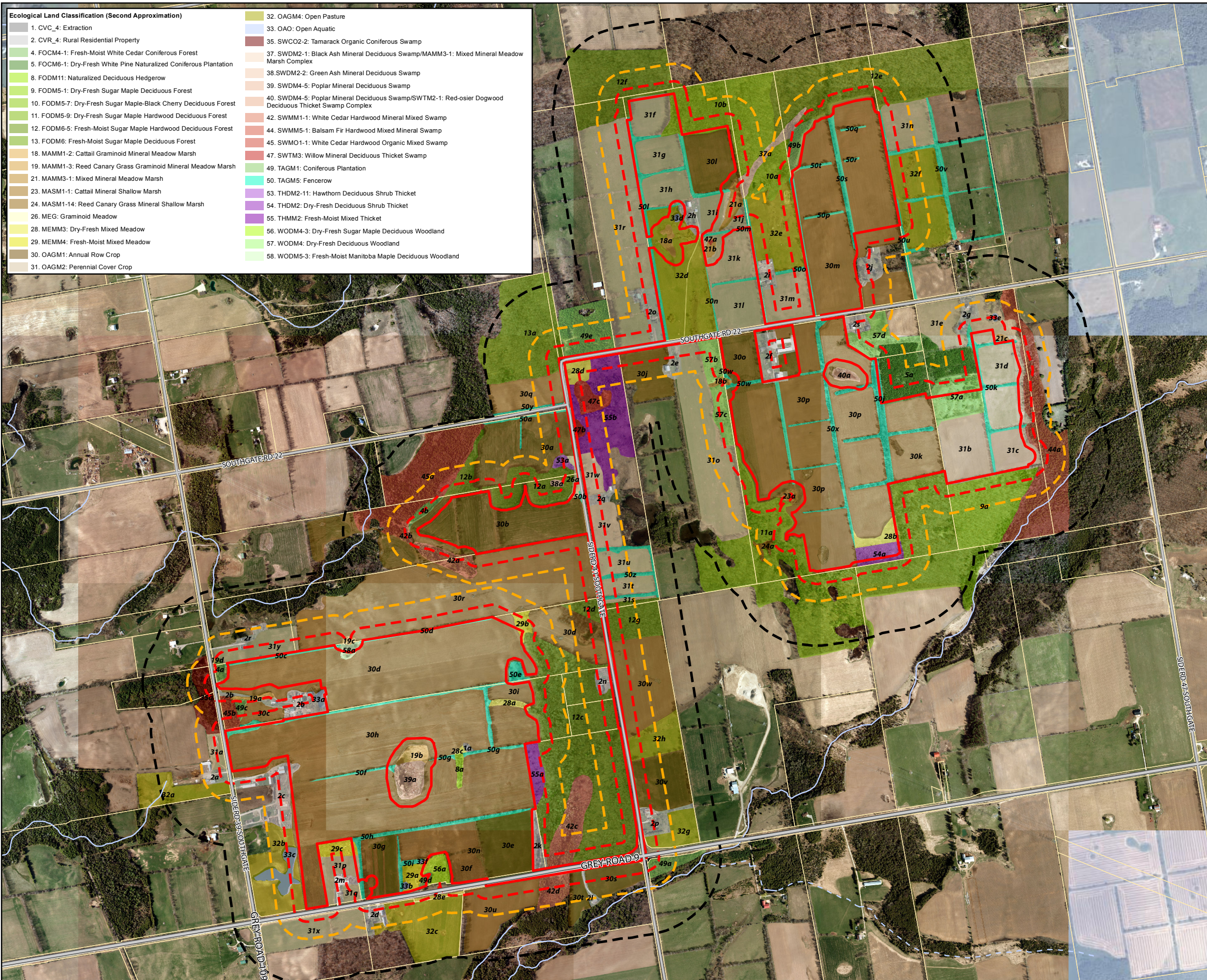
As outlined in O. Reg. 359/09, all lands within 50 m of a Project component must be assessed for natural features and resources. Access was not available to some lands located within 50 m of the Project Location boundary, as only those landowners willing to participate in the Project granted permission for land access (**Appendix D**). Natural features located on adjacent lands where access was not available were assessed from property lines and road rights-of-way, where applicable. This alternative site investigation was conducted in accordance with O. Reg. 359/09.

7.2 Natural Features

Based on the site investigation results, the presence of natural features is documented below. **Figure 4** displays the results of the ELC survey within 50 m of the Project Location and is the basis for determining the type of natural feature present and its boundaries.

7.2.1 Ecological Land Classification Results

The major land use within the Project Location and surrounding 50 m consists of annual row crops and perennial cover crops such as hayfields. A total of 32 natural vegetation communities were observed within 50 m of the Project Location. The location, type and boundaries of the various vegetation communities located within the Project Location and surrounding 50 m are delineated in **Figure 4**. Where access was permitted, the extent of the vegetation community has been mapped beyond 50 m from the Project Location to inform determinations on natural features within 300 m (as required in the *Construction Plan Report*). None of the vegetation communities documented in the Project Location are considered rare in Ontario. **Table 6** outlines the communities documented during the 2014 ELC surveys. The polygon identifiers in **Figure 4** correspond to a table included in **Appendix D** with the sizes of each polygon. The results of this work were used to further confirm the extent of natural features within the Project Location and surrounding 50 m. Field notes are attached in **Appendix A**.

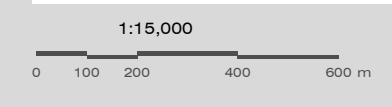


Ecological Land Classification (Second Approximation)	
1. CVC_4: Extraction	32. OAGM4: Open Pasture
2. CVR_4: Rural Residential Property	33. OAO: Open Aquatic
4. FOCM4-1: Fresh-Moist White Cedar Coniferous Forest	35. SWCO2-2: Tamarack Organic Coniferous Swamp
5. FOCM6-1: Dry-Fresh White Pine Naturalized Coniferous Plantation	37. SWDM2-1: Black Ash Mineral Deciduous Swamp/MAMM3-1: Mixed Mineral Meadow Marsh Complex
8. FODM11: Naturalized Deciduous Hedgerow	38. SWDM2-2: Green Ash Mineral Deciduous Swamp
9. FODM5-1: Dry-Fresh Sugar Maple Deciduous Forest	39. SWDM4-5: Poplar Mineral Deciduous Swamp
10. FODM5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	40. SWDM4-5: Poplar Mineral Deciduous Swamp/SWTM2-1: Red-osier Dogwood Deciduous Thicket Swamp Complex
11. FODM5-9: Dry-Fresh Sugar Maple Hardwood Deciduous Forest	42. SWMM1-1: White Cedar Hardwood Mineral Mixed Swamp
12. FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	44. SWMM5-1: Balsam Fir Hardwood Mixed Mineral Swamp
13. FODM6: Fresh-Moist Sugar Maple Deciduous Forest	45. SWMO1-1: White Cedar Hardwood Organic Mixed Swamp
18. MAMM1-2: Cattail Graminoid Mineral Meadow Marsh	47. SWTM3: Willow Mineral Deciduous Thicket Swamp
19. MAMM1-3: Reed Canary Grass Graminoid Mineral Meadow Marsh	49. TAGM1: Coniferous Plantation
21. MAMM3-1: Mixed Mineral Meadow Marsh	50. TAGM5: Fencerow
23. MASM1-1: Cattail Mineral Shallow Marsh	53. THDM2-11: Hawthorn Deciduous Shrub Thicket
24. MASM1-14: Reed Canary Grass Mineral Shallow Marsh	54. THDM2: Dry-Fresh Deciduous Shrub Thicket
26. MEG: Graminoid Meadow	55. THMM2: Fresh-Moist Mixed Thicket
28. MEMM3: Dry-Fresh Mixed Meadow	56. WODM4-3: Dry-Fresh Sugar Maple Deciduous Woodland
29. MEMM4: Fresh-Moist Mixed Meadow	57. WODM4: Dry-Fresh Deciduous Woodland
30. OAGM1: Annual Row Crop	58. WODM5-3: Fresh-Moist Manitoba Maple Deciduous Woodland
31. OAGM2: Perennial Cover Crop	

SOUTHGATE SOLAR PROJECT

**FIGURE 4
ECOLOGICAL LAND CLASSIFICATION**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 1/16/2015

Table 6: Ecological Land Classification

First Approximation		Second Approximation		Soils*	Identifier on Figure 4	Vegetation
ELC Code	Classification	ELC Code	Classification			
FOD5-1	Dry-Fresh Sugar Maple Deciduous Forest	FODM5-1	Dry-Fresh Sugar Maple Deciduous Forest	Silty Very Fine Sand; Moisture = 3	9	<p>This deciduous forest community dominated by Sugar Maple (<i>Acer saccharum</i>) in the canopy. Sugar Maple is also abundant in the understory and in the ground layer. Shrubs present in the understory include Alternate-leaved Dogwood (<i>Cornus alternifolia</i>), Choke Cherry (<i>Prunus virginiana</i> var. <i>virginiana</i>), Common Buckthorn (<i>Rhamnus cathartica</i>) and Elderberry (<i>Sambucus</i> sp.).</p> <p>Herbaceous species present include occasional occurrences of Herb Robert (<i>Geranium robertianum</i>), Blue Cohosh (<i>Caulophyllum thalictroides</i>), White Trillium (<i>Trillium grandiflorum</i>), White Avens (<i>Geum canadense</i>), Evergreen Wood Fern (<i>Dryopteris intermedia</i>) and Violets (<i>Viola</i> sp.). Rare occurrences of False Solomon's Seal (<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>), Jack-in-the-Pulpit (<i>Arisaema triphyllum</i>), Plantain-leaved Sedge (<i>Carex plantaginea</i>) and White Baneberry (<i>Actaea pachypoda</i>) are also present among others.</p> <p>This community appears to be used in the production of maple syrup (see Figure 4).</p>
FOD5-7	Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	FODM5-7	Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	Silt; Moisture = 2	10	<p>This deciduous forest community contains abundant Sugar Maple and Black Cherry (<i>Prunus serotina</i>), with occasional occurrences of American Beech (<i>Fagus grandifolia</i>) and rare occurrences of Yellow Birch (<i>Betula alleghaniensis</i> var. <i>falax</i>).</p> <p>The shrub layer includes Alternate-leaved Dogwood, Red Elderberry (<i>Sambucus racemosa</i> var. <i>pubens</i>), Prickly Gooseberry (<i>Ribes cynosbati</i>) Red Raspberry (<i>Rubus sachalinensis</i> var. <i>sachalinensis</i>) and Choke Cherry.</p> <p>Herbaceous species present include Enchanter's Nightshade (<i>Circaea canadensis</i> ssp. <i>canadensis</i>), Wild Leek (<i>Allium tricoccum</i> var. <i>tricoccum</i>), Blue Cohosh, Canada Violet (<i>Viola canadensis</i>), White Trillium, Herb Robert, False Solomon's Seal and Yellow Trout Lily (<i>Erythronium americanum</i> ssp. <i>americanum</i>). Other species occurring include Large Flowered Bellwort (<i>Uvularia grandiflora</i>), Stellate Sedge (<i>Carex rosea</i>), Evergreen Wood fern and Hairy Solomon's Seal (<i>Polygonatum pubescens</i>).</p> <p>See Photo 1 in Appendix B.</p>
N/A	N/A	FODM5-9	Dry-Fresh Sugar Maple-Hardwood Deciduous Forest	Silty Very Fine Sand; Moisture = 3	11	<p>This deciduous forest community contains abundant Sugar Maple in the canopy with Black Cherry, White Ash (<i>Fraxinus americana</i>), American Beech and Basswood (<i>Tilia americana</i>) also occurring. In addition to canopy species, the understory contains Hop Hornbeam (<i>Ostrya virginiana</i>).</p> <p>The shrub layer contains Eastern White Cedar (<i>Thuja occidentalis</i>), Alternate-leaved Dogwood, Choke Cherry, Common Buckthorn and Elderberry.</p> <p>Herbaceous species present include occasional occurrences of Herb Robert, Blue Cohosh, White Trillium, White Avens, Evergreen Wood Fern and Violets. Rare occurrences of False Solomon's Seal, Jack-in-the-Pulpit, Plantain-leaved Sedge and White Baneberry are also present, among others.</p>
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest	FODM6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest	Silt Loam; Moisture = 2	12	<p>This deciduous forest community contains abundant Sugar Maple in the canopy with Black Cherry, White Ash and Yellow Birch also present. The understory contains abundant Sugar Maple and also Hop Hornbeam.</p> <p>Species in the shrub layer include Alternate-leaved Dogwood, Red Raspberry, Prickly Gooseberry and Red Elderberry.</p> <p>Herbaceous species present include Blue Cohosh, White Trillium, Herb Robert, Early Meadowrue (<i>Thalictrum dioicum</i>), Enchanter's Nightshade, White Baneberry, Plantain-leaved Sedge and Stellate Sedge.</p> <p>See Photo 2 in Appendix B.</p>
FOD6	Fresh-Moist Sugar Maple Deciduous Forest	FODM6	Fresh-Moist Sugar Maple Deciduous Forest	N/A	13	<p>This deciduous forest community was assessed from roadside and is dominated by Sugar Maple.</p>
N/A	N/A	FODM11	Naturalized Deciduous Hedgerow	N/A	8	<p>This wide hedgerow community contains a mix of common deciduous tree species including American Elm (<i>Ulmus americana</i>) and Manitoba Maple (<i>Acer negundo</i>).</p> <p>See Photo 3 in Appendix B.</p>

First Approximation		Second Approximation		Soils*	Identifier on Figure 4	Vegetation
ELC Code	Classification	ELC Code	Classification			
FOC4-1	Fresh-Moist White Cedar Coniferous Forest	FOCM4-1	Fresh-Moist White Cedar Coniferous Forest	Loamy Very fine Sand; Moisture = 3-4	4	This coniferous forest community is dominated by Eastern White Cedar, with rare occurrences of Black Cherry and Hop Hornbeam in the canopy. The shrub layer includes Alternate-leaved Dogwood, Choke Cherry and <i>Ribes</i> sp. Herbaceous species present include Goldenrods (<i>Solidago</i> sp.), and Asters (<i>Aster</i> sp.). In general, ground vegetation is sparse in this dense canopied community. See Photo 4 in Appendix B .
CUP3-2	White Pine Coniferous Plantation	FOCM6-1	Dry-Fresh White Pine Naturalized Coniferous Plantation	N/A	5	This community is dominated by White Pine (<i>Pinus strobus</i>), with rare occurrences of Black Cherry in the canopy and Green Ash (<i>Fraxinus pennsylvanica</i>) regenerating in the ground layer. Shrubs present include Alternate Dogwood, Hawthorn (<i>Crataegus</i> sp.), and Red Elderberry. Herbaceous species present include Herb Robert and Common Dandelion (<i>Taraxacum officinale</i>). Generally this community contains a low diversity of species due to its origins as a plantation but is showing signs of natural regeneration. See Photo 5 in Appendix B .
N/A	N/A	WODM4	Dry-Fresh Deciduous Woodland	N/A	57	This community contains rare occurrences of Basswood, Sugar Maple and American Elm in the canopy layer and understory layers. Other tree species also occurring in the understory include Manitoba Maple, Apple (<i>Malus</i> sp.), Black Cherry and Scot's Pine (<i>Pinus sylvestris</i>). Shrub and vine species present include Hawthorn, Choke Cherry, Riverbank Grape (<i>Vitis riparia</i>) and Thicket Creeper (<i>Parthenocissus inserta</i>). Herbaceous species present include Oxeye Daisy (<i>Leucanthemum vulgare</i>), Bladder Champion (<i>Silene latifolia</i>), Smooth Brome (<i>Bromus inermis</i> ssp. <i>inermis</i>), Common Strawberry (<i>Fragaria virginiana</i> ssp. <i>virginiana</i>), Red Clover (<i>Trifolium pratense</i>), Cow Vetch (<i>Vicia cracca</i>) and Viper's Bugloss (<i>Echium vulgare</i>) among others. This community contains a high proportion of non-native species indicating past disturbance. See Photo 6 in Appendix B .
N/A	N/A	WODM4-3	Dry-Fresh Sugar Maple Deciduous Woodland	Fine Sandy Loam; Moisture = 2	56	This woodland community contains occasional occurrences of Sugar Maple and rare Black Cherry in the canopy layer and understory layer. Other tree species present in the understory include Wild Apple (<i>Malus pumila</i>), American Elm and Red Pine (<i>Pinus resinosa</i>). Shrubs present include Choke Cherry, Autumn Olive (<i>Elaeagnus umbellata</i>), Hawthorn, Serviceberry (<i>Amelanchier</i> sp), Alternate-leaved Dogwood and Nannyberry (<i>Viburnum lentago</i>). Herbaceous species present include Oxeye Daisy, Smooth Brome, Ribgrass (<i>Plantago lanceolata</i>), Common Strawberry, Orchard Grass (<i>Dactylis glomerata</i>), Canada Bluegrass (<i>Poa compressa</i>) and rare occurrence of Common Milkweed (<i>Asclepias syriaca</i>). This community has a high proportion of non-native species indicating past disturbance. See Photo 7 in Appendix B .
N/A	N/A	WODM5-3	Fresh-Moist Manitoba Maple Deciduous Woodland	N/A	58	This woodland community is dominated by Manitoba Maple, with rare occurrences of Balsam Poplar (<i>Populus balsamifera</i>). See Photo 8 in Appendix B .
N/A	N/A	THDM2-11	Hawthorn Deciduous Shrub	N/A	53	This thicket community is dominated by Hawthorns (<i>Crataegus</i> sp.) with Orchard Grass being abundant in the ground layer vegetation. See Photo 9 in Appendix B .
CUT1	Mineral Cultural Thicket Ecosite	THDM2	Dry-Fresh Deciduous Shrub Thicket	Loamy Very Fine Sand; Moisture = 2	54	This deciduous thicket community contains rare of occurrences of Sugar Maple, Black Cherry, Eastern White Cedar and American Elm. The community is dominated by shrubs, including abundant Ninebark (<i>Physocarpus opulifolius</i>), with occasional One-seeded Hawthorn (<i>Crataegus monogyna</i>) and rare occurrences of Choke Cherry. Herbaceous species present include Red Clover, Oxeye Daisy, Orchard Grass, Bladder Champion, Asters and Heal-all (<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>). See Photo 10 in Appendix B .

First Approximation		Second Approximation		Soils*	Identifier on Figure 4	Vegetation
ELC Code	Classification	ELC Code	Classification			
N/A	N/A	THMM2	Fresh-Moist Mixed Thicket	N/A	55	This thicket community contains a mix of young deciduous and coniferous tree species including White Elm, Basswood, Trembling Aspen, Black Cherry, Sugar Maple, Eastern White Cedar, Scot's Pine and Tamarack. Choke Cherry and Riverbank Grape are also present. Herbaceous species present include New England Aster (<i>Symphotrichum novae-angliae</i>), Orchard Grass, Smooth Brome, Canada Goldenrod (<i>Solidago canadensis var. canadensis</i>) and Evening Primrose (<i>Oenothera biennis</i>) among others. See Photo 11 in Appendix B .
SWC4-2	Tamarack Organic Coniferous Swamp	SWCO2-2	Tamarack Organic Coniferous Swamp	Organic (humic); Moisture = 9	35	This coniferous swamp community contain abundant Tamarack with occasional Eastern White Cedar and rare White Elm in the sub-canopy. Shrub species present include Woolly-headed Willow, Red-osier Dogwood and Alder-leaved Buckthorn. Herbaceous species present include Reed Canary Grass, Spotted Water Hemlock, Spotted Touch-me-not (<i>Impatiens capensis</i>), Marsh Marigold and Crested Shield Fern (<i>Dryopteris cristata</i>) among others. See Photo 12 in Appendix B .
SWM4-1	White Cedar-Hardwood Organic Mixed Swamp	SWMO1-1	White Cedar-Hardwood Organic Mixed Swamp	Organic (humic); Moisture = 8	45	This mixed swamp community contains abundant Eastern White Cedar with other trees present including Yellow Birch, Eastern Hemlock (<i>Tsuga canadensis</i>), White Spruce (<i>Picea glauca</i>) and Red Maple (<i>Acer rubrum</i>). Shrub species present include Dwarf Raspberry (<i>Rubus pubescens</i>) and Canada Yew (<i>Taxus canadensis</i>). Herbaceous species present include Marsh Marigold (<i>Caltha palustris</i>), Spotted Touch-me-not (<i>Impatiens capensis</i>), Wild Sarsaparilla (<i>Aralia nudicaulis</i>), Crested Shield Fern, Reed Canary Grass (<i>Phalaris arundinacea</i>) and Naked Miterwort (<i>Mitella nuda</i>). See Photo 13 in Appendix B .
SWD2-1/MAM2	Black Ash Mineral Deciduous Swamp/Mineral Meadow Marsh Ecosite	SWDM2-1/MAMM3-1	Black Ash Mineral Deciduous Swamp/Mixed Mineral Meadow Marsh Complex	Silt; Moisture = 6	37	This deciduous swamp meadow marsh complex contains abundant Black Ash (<i>Fraxinus nigra</i>) in the canopy layer, with occurrences of Yellow Birch, Basswood and Sugar Maple. Herbaceous species include Sensitive Fern (<i>Onoclea sensibilis</i>), Spotted Touch-me-not, Field Horsetail (<i>Equisetum arvense</i>), Fox Sedge (<i>Carex vulpinoidea</i>), Lady Fern (<i>Athyrium filix-femina var. angustum</i>), Ostrich Fern (<i>Matteuccia struthiopteris</i>), Fowl Blue Grass (<i>Poa palustris</i>) and Foamflower (<i>Tiarella cordifolia</i>). See Photo 14 in Appendix B .
SWD2-2	Green Ash Mineral Deciduous Swamp	SWDM2-2	Green Ash Mineral Deciduous Swamp	N/A, rocky substrate	38	This swamp community is dominated by Green Ash, with Red Raspberry, Spotted Touch-me-not and Tall Buttercup (<i>Ranunculus acris</i>) occurring in the ground layer vegetation. See Photo 15 in Appendix B .
SWD4-3	White Birch/Poplar Mineral Deciduous Swamp	SWDM4-5	Poplar Mineral Deciduous Swamp	Fine Sand; Moisture = 6	39	This deciduous swamp community is dominated by Trembling Aspen (<i>Populus tremuloides</i>) in the canopy. Tree species present in the understory include Balsam Poplar, Freeman's Maple (<i>Acer X freemanii</i>) and Wild Apple. Shrub species present include Red-osier Dogwood (<i>Cornus sericea ssp. sericea</i>), Red Raspberry and Common Buckthorn. Herbaceous species present include Reed Canary Grass, Sensitive Fern, Field Horsetail, Fringed Sedge (<i>Carex crinita</i>), Spotted Touch-me-not and Duckweed (<i>Lemna minor</i>). See Photo 16 in Appendix B .
SWD4-3/SWT2-5	White Birch/Poplar Mineral Deciduous Swamp/ Red-Osier Mineral Thicket Swamp	SWDM4-5/SWTM2-1	Poplar Mineral Deciduous Swamp/ Red-Osier Dogwood Mineral Deciduous Swamp Thicket Complex	N/A, stony soil	40	This community is dominated by Trembling aspen in the canopy layer with Willow (<i>Salix</i> sp.) and Basswood also present. Shrubs and vines present include abundant Red-osier Dogwood, Red Elderberry, Alternate-leaved Dogwood and Riverbank Grape. Herbaceous species present include Sensitive Fern, Bittersweet Nightshade (<i>Solanum dulcamara</i>), Sedges (<i>Carex</i> sp.) and Duckweed. See Photo 17 in Appendix B .

First Approximation		Second Approximation		Soils*	Identifier on Figure 4	Vegetation
ELC Code	Classification	ELC Code	Classification			
SWM1-1	White Cedar Hardwood Mineral Mixed Swamp	SWMM1-1	White Cedar Hardwood Mineral Mixed Swamp	Silty Fine Sand; Moisture = 6	42	This mixed swamp community contains abundant Eastern White Cedar and Balsam Fir with occasional occurrences of Red Maple, Green Ash, Black Cherry, Trembling Aspen and Tamarack. Alder-leaved Buckthorn is present in the shrub layer. Species found in the ground layer include Marsh Marigold, Crested Shield Fern, Swamp Milkweed (<i>Asclepias incarnata ssp. incarnata</i>), Swamp Buttercup (<i>Ranunculus hispidus var. caricetorum</i>), Marsh Fern (<i>Thelypteris palustris var. pubescens</i>) and Canada Mayflower (<i>Maianthemum canadense</i>) among others. See Photo 18 in Appendix B .
N/A	N/A	SWMM5-1	Balsam Fir-Hardwood Mixed Mineral Swamp	Silty Fine Sand; Moisture = 6	44	This mixed swamp community contains abundant Balsam Fir (<i>Abies balsamea</i>), with occasional Eastern White cedar, Black Ash, Trembling Aspen, and rare occurrences of Basswood and Balsam Poplar in the Canopy. Shrub and vine species present include Ninebark, Mountain Maple (<i>Acer spicatum</i>), Dwarf Raspberry and Virgin's Bower (<i>Clematis virginiana</i>). Herbaceous species occurring occasionally include Tall Meadowrue (<i>Thalictrum pubescens</i>), Fowl Manna Grass (<i>Glyceria striata</i>), Marsh Fern (<i>Thelypteris palustris var. pubescens</i>), Sensitive Fern, Fox Sedge, Canada Anemone (<i>Anemone canadensis</i>), and Marsh Marigold. Species rarely occurring include Yellow Sedge (<i>Carex flava</i>), Wild Sarsaparilla, Canada Mayflower (<i>Maianthemum canadense</i>), Golden Sedge (<i>Carex aurea</i>) and Rice Cut Grass (<i>Leersia oryzoides</i>). See Photo 19 in Appendix B .
SWT2-2	Willow Mineral Thicket Swamp	SWTM3	Willow Mineral Deciduous Thicket Swamp	N/A	47	This swamp thicket is dominated by shrub sized willows (<i>Salix</i> sp.).
N/A	N/A	MAMM1-2	Cattail Graminoid Mineral Meadow Marsh	N/A	18	This graminoid meadow marsh community is dominated by cattail (<i>Typha</i> sp.). See Photo 20 in Appendix B .
MAM2-2	Reed Canary Grass Mineral Meadow Marsh	MAMM1-3	Reed Canary Grass Graminoid Mineral Meadow Marsh	N/A	19	This meadow marsh community is dominated by Reed Canary Grass. See Photo 21 in Appendix B .
MAM2	Mineral Meadow Marsh Ecosite	MAMM3-1	Mixed Mineral Meadow Marsh	Silt Loam; Moisture = 6	21	This meadow marsh community contains Reed Canary Grass, Black Bulrush (<i>Scirpus atrovirens</i>), Sensitive Fern, Curled Dock (<i>Rumex crispus</i>), Fox Sedge, Swamp Aster (<i>Symphotrichum puniceum var. puniceum</i>), Bebb's Sedge, Swamp Milkweed (<i>Asclepias incarnata ssp. incarnata</i>), Spotted Joe-pye-weed (<i>Eutrochium maculatum var. bruneri</i>), Broad-leaved Cattail (<i>Typha latifolia</i>), Panicked Aster and Common Boneset. See Photo 22 in Appendix B .
MAS2-1	Cattail Mineral Shallow Marsh	MASM1-1	Cattail Mineral Shallow Marsh	N/A	23	This graminoid meadow marsh community is dominated by Cattail with other species occurring including Reed Canary Grass and Northern Blue Flag (<i>Iris versicolor</i>). See Photo 23 in Appendix B .
N/A	N/A	MASM1-14	Reed Canary Grass Mineral Shallow Marsh	Loamy Very Fine Sand; Moisture = 6	24	This shallow marsh community is largely dominated by Reed Canary Grass, with rarely occurring Sedges, Yellow Pond Lily (<i>Nuphar lutea ssp. viriegata</i>), Blue Flag and Water Smartweed rarely occurring. See Photo 24 in Appendix B .
CUM1-1	Dry-Moist Oldfield Meadow	MEG	Graminoid Meadow	N/A	26	This meadow community is dominated by Orchard Grass and Kentucky Bluegrass (<i>Poa pratensis ssp. pratensis</i>) with rare occurrences of Violets (<i>Viola</i> sp.), Canada Thistle (<i>Cirsium arvense</i>), Common Valerian (<i>Valeriana officinalis</i>), Common Gromwell (<i>Lithospermum officinale</i>), Cow Vetch, Tall Buttercup and Common Strawberry.
CUM1-1	Dry-Moist Oldfield Meadow	MEMM3	Dry-Fresh Mixed Meadow	N/A, soil very stony.	28	This mixed meadow community contains a mix of graminoid and forb species including Orchard Grass, Goldenrods, Oxeye Daisy, Smooth Brome, Strawberry, Wild Madder, Bladder Champion and Wild Carrot (<i>Daucus carota</i>). See Photo 25 in Appendix B .

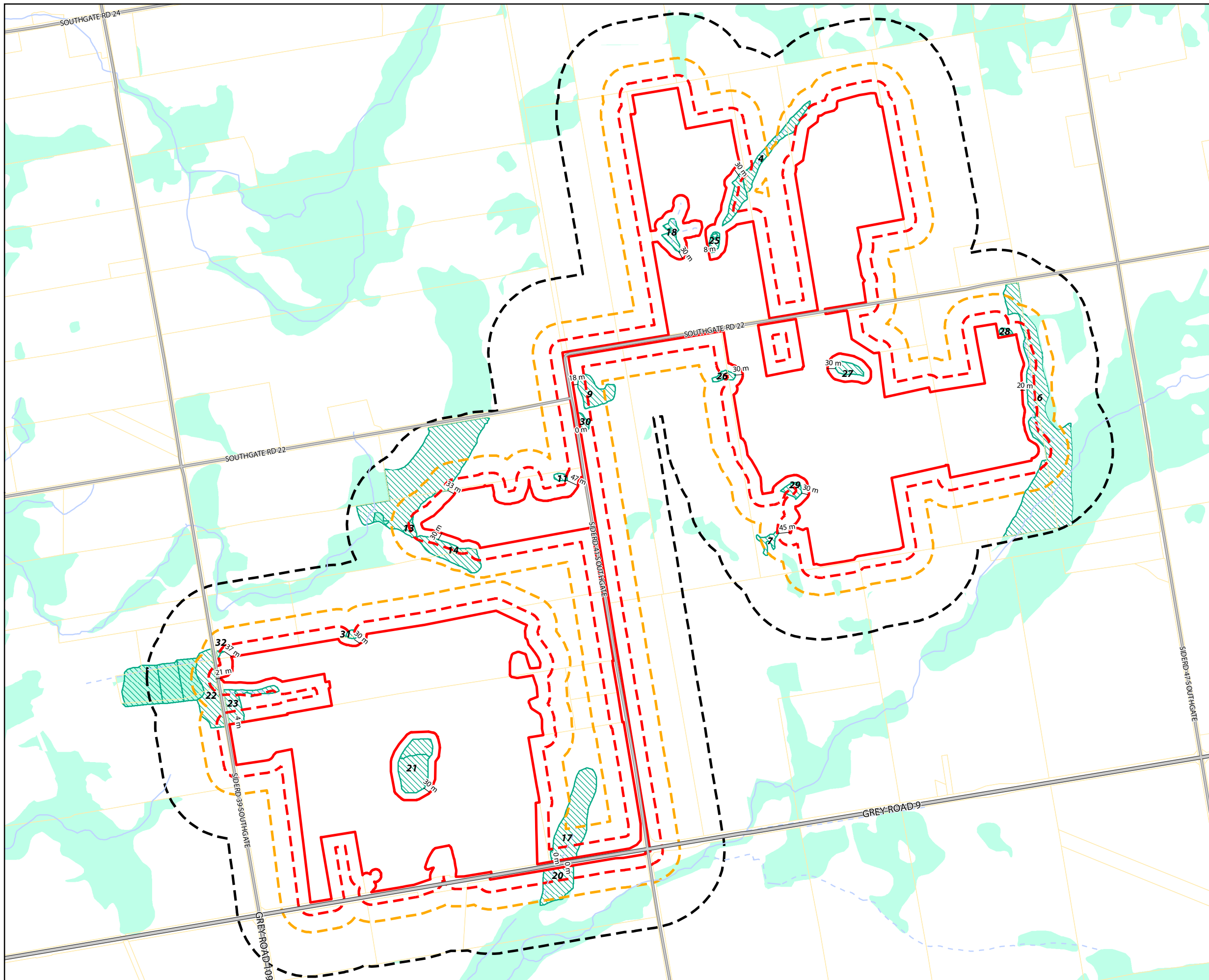
First Approximation		Second Approximation		Soils*	Identifier on Figure 4	Vegetation
ELC Code	Classification	ELC Code	Classification			
CUM1-1	Dry-Moist Oldfield Meadow	MEMM4	Fresh-Moist Mixed Meadow	Fine Sandy Loam; Moisture = 5	29	This mixed meadow community contains a mix of graminoid and forb species including Reed Canary Grass, Smooth Brome, Kentucky Bluegrass, Oxeye Daisy, Silverweed (<i>Potentilla anserina ssp. anserina</i>), Strawberry, Orchard Grass and Cow Vetch. See Photo 26 in Appendix B .
CUP3	Coniferous Plantation	TAGM1	Coniferous Plantation	N/A	49	This land use consists of rows of planted coniferous trees. The majority of plantation lands in the vicinity of the Project Location contained White Pine, with rare Red Pine.
N/A	N/A	TAGM5	Fencerow	N/A	50	These narrow linear tree communities are found throughout the lands in the vicinity of the Project Location and are generally dominated by deciduous trees.
N/A	N/A	OAGM1	Annual Row Crops	N/A	30	Land use dominated by annual crops including soy and corn.
N/A	N/A	OAGM2	Perennial Cover Crops	N/A	31	Land use dominated by hay crops.
N/A	N/A	OAGM4	Open Pasture	N/A	32	Pastures grazed by cattle and horses. In general, pastures were lightly grazed with low densities of livestock. The pasture located on the south west corner of Property 13 was heavily grazed with bare soil present.
N/A	N/A	CVC_4	Extraction	N/A	1	Open pits for mining aggregate resources found in the vicinity of the Project Location.
N/A	N/A	CVR_4	Rural Residential Property	N/A	4	This land use consists of residential and barn buildings.
OAO	Open Aquatic	OAO	Open Water		33	Open water ponds.

*Note: where soils is indicated "N/A" this was based on lack of direct access to the soils to collect information. Soils also were not described in agricultural fields.

7.2.2 Wetlands

As detailed in the *NHA Records Review Report*, a search and analysis of the records and resources outlined identified several unevaluated southern wetlands located within the 120 m setback area (**Figure 3**). No provincially significant wetlands were identified in the Project Location or within the surrounding 50 m. The focus of the wetlands site investigation was to determine the boundaries of wetland features as presented in **Figure 3** and to determine if any additional wetlands were identified. Where wetland features were identified using ELC (**Figure 4** and **Table 6**), delineation of the communities was undertaken using OWES protocol.

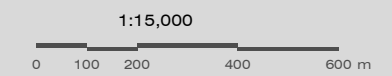
The boundaries of all wetlands identified are shown on **Figure 5** as well as their respective nearest distance to the defined Project Location boundary. **Table 7** outlines the attributes, composition and function of each wetland unit and confirms if the wetland was included in the records review or was identified as a result of these site investigations (**Figure 5**). **Table 7** also outlines the Project components that fall within 50 m of each wetland boundary. Amendments to the *NHA Records Review* are outlined in **Section 8**.



SOUTHGATE SOLAR PROJECT

**FIGURE 5
WETLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Dillon Delineated Wetland
- Unevaluated Wetland



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 11/28/2014

Table 7: Summary of Wetlands within 50 m of the Project Location

Wetland ID	Wetland Identified During Records Review	Attributes		Composition			Function		Project components within 50 m
		Size (hectares)	Distance to nearest wetland unit	Relevant Species	ELC communities	Vegetation Forms	Associated Candidate Wildlife Habitat	Hydrologic Connection	
4	Yes – Boundary Revised	2.15	32 m to Wetland 25	Black Ash (<i>Fraxinus nigra</i>) in the canopy layer, with occurrences of Yellow Birch (<i>Betula alleghaniensis</i> var. <i>falax</i>), Basswood (<i>Tilia americana</i>), White Elm (<i>Ulmus americana</i>), Red-osier Dogwood (<i>Cornus sericea</i> ssp. <i>sericea</i>), Narrow-leaved Meadowsweet (<i>Spiraea alba</i> var. <i>alba</i>), Sensitive Fern (<i>Onoclea sensibilis</i>), Spotted Touch-me-not (<i>Impatiens capensis</i>), Field Horsetail (<i>Equisetum arvense</i>), Fox Sedge (<i>Carex vulpinoidea</i>), Lady Fern (<i>Athyrium filix-femina</i> var. <i>angustum</i>), Ostrich Fern (<i>Matteuccia struthiopteris</i>), Fowl Blue Grass (<i>Poa palustris</i>) and Foamflower (<i>Tiarella cordifolia</i>).	Black Ash Mineral Deciduous Swamp (SWDM2-1); Mixed Mineral Meadow Marsh (MAMM3-1)	H:Deciduous Trees Ls: Low Shrubs Gc: Ground Cover Ne: Narrow Leaved Emergents	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Intermittent watercourse flows through wetland towards south west. Likely overland flow connection with Wetland 25	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads
6	Yes – Boundary Revised	39.7	42 m to Wetland 28	Balsam Fir (<i>Abies balsamea</i>), Eastern White Cedar (<i>Thuja occidentalis</i>), Yellow Birch, Silver Maple (<i>Acer saccharinum</i>), Sensitive Fern and Ostrich Fern	Balsam Fir Hardwood Mixed Mineral Swamp (SWMM5-1)	H: Deciduous Trees C: Coniferous Trees Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Ephemeral watercourse flows through towards permanent watercourse to south	<ul style="list-style-type: none"> - Perimeter fence - Solar panels
7	Yes – Boundary Revised	0.31	36 m to Wetland to South East (within 120 m from project location)	Reed Canary Grass (<i>Phalaris arundinacea</i>), Sedges (<i>Carex</i> sp.), Northern Blue Flag (<i>Iris versicolor</i>) and Water Smartweed (<i>Persicaria amphibia</i> var. <i>emersa</i>).	Reed Canary Grass Mineral Shallow Marsh (MASM1-14)	Ne: Narrow-leaved Emergents Be: Broad-leaved Emergents F: Floating	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels
9	Yes – Boundary Revised	1.27	25 m to Wetland 31	Willow species (<i>Salix</i> sp.)	Willow Mineral Deciduous Thicket Swamp (SWTM3)	Ts: Tall Shrubs	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Marsh Breeding Bird Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Surface water connection to Wetland 30	N/A

Wetland ID	Wetland Identified During Records Review	Attributes		Composition			Function		Project components within 50 m
		Size (hectares)	Distance to nearest wetland unit	Relevant Species	ELC communities	Vegetation Forms	Associated Candidate Wildlife Habitat	Hydrologic Connection	
11	Yes – Boundary Revised	0.14	181 m to Wetland 31	Green Ash (<i>Fraxinus pennsylvanica</i>), Red Raspberry (<i>Rubus sachalinensis</i> var. <i>sachalinensis</i>), Spotted Touch-me-not and Tall Buttercup (<i>Ranunculus acris</i>).	Green Ash Mineral Deciduous Swamp (SWDM2-2)	H: Deciduous Trees Ls: Low Shrubs Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels
13	Yes – Boundary Revised	12.22	6 m to Wetland 14	Eastern White Cedar, Balsam Fir, Black Ash, Red Maple, Yellow Birch, Canada Elderberry (<i>Sambucus canadensis</i>), Sedges (<i>Carex</i> sp.), Crested Shield Fern (<i>Dryopteris cristata</i>), Royal Fern (<i>Osmunda regalis</i> var. <i>spectabilis</i>), Marsh Marigold (<i>Caltha palustris</i>), Spotted Touch-me-not and Gold Thread (<i>Coptis trifolia</i>)	White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1); White Cedar Hardwood Organic Mixed Swamp (SWMO1-1)	H: Deciduous Trees C: Coniferous Trees Ts: Tall Shrubs Ne: Narrow-leaved Emergents Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Permanent watercourse flows through west portion of wetland	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV Substation
14	Yes – Boundary Revised	1.73	6 m to Wetland 14	Eastern White Cedar, Balsam Fir, Tamarack (<i>Larix laricina</i>), Eastern Hemlock (<i>Tsuga canadensis</i>), Red Maple (<i>Acer rubrum</i>), Green Ash, Trembling Aspen (<i>Populus tremuloides</i>), Canada Mayflower (<i>Maianthemum canadense</i>), Crested Shield Fern, Marsh Marigold, Wild Sarsaparilla (<i>Aralia nudicaulis</i>) and Marsh Fern (<i>Thelypteris palustris</i> var. <i>pubescens</i>)	White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1)	H: Deciduous Trees C: Coniferous Trees Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Likely seasonal surface water connection to Wetland 13	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads
17	Yes – Boundary Revised	3.54	30 m to Wetland 20	Eastern White Cedar, White Elm, Green Ash, Trembling Aspen, Bebb's Willow (<i>Salix bebbiana</i>), Riverbank Grape (<i>Vitis riparia</i>), Reed Canary Grass, Fowl Manna Grass (<i>Glyceria striata</i>), Broad-leaved Cattail (<i>Typha latifolia</i>), Sensitive Fern	White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1)	H: Deciduous Trees C: Coniferous trees Ts: Tall Shrubs Ne: Narrow-leave Emergents Re: Robust Emergents Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Likely seasonal surface water connection to Wetland 20	Overhead collector line

Wetland ID	Wetland Identified During Records Review	Attributes		Composition			Function		Project components within 50 m
		Size (hectares)	Distance to nearest wetland unit	Relevant Species	ELC communities	Vegetation Forms	Associated Candidate Wildlife Habitat	Hydrologic Connection	
18	No	0.47	120 m to Wetland 25	Cattail (<i>Typha</i> sp.)	Cattail Graminoid Mineral Meadow Marsh (MAMM1-2)	Re: robust Emergents	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Colonially Nesting Bird Breeding Habitat (Ground) - Amphibian Breeding Habitat (wetland) 	Ephemeral overland flow	N/A
20	Yes – Boundary Revised	37.57	30 m to Wetland 17	Eastern White Cedar, American Elm, Green Ash, Trembling Aspen, Bebb’s Willow, Riverbank Grape, Reed Canary Grass, Fowl Manna Grass, Broad-leaved Cattail, Sensitive Fern	White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1)	H: Deciduous Trees C: Coniferous Trees Ts: Tall Shrubs Ne: Narrow-leave Emergents Re: Robust Emergents Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Likely seasonal surface water connection to Wetland 17	Overhead collector line
21	Yes – Boundary Revised	2.3	559 m to Wetland 23	Trembling Aspen, Woolly-headed Willow (<i>Salix eriocephala</i>), Slender Willow (<i>Salix petiolata</i>), Bebb’s Willow, Red-osier Dogwood, Common Buckthorn (<i>Rhamnus cathartica</i>), Sensitive Fern, Field Horsetail (<i>Equisetum arvense</i>), Spotted Touch-me-not, Reed Canary Grass, Fringed Sedge (<i>Carex crinita</i>), Lesser Duckweed (<i>Lemna minor</i>)	Poplar Mineral Deciduous Swamp (SWDM4-5); Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3)	H: Deciduous Trees Ts: Tall Shrubs Ls: Low Shrubs Gc: Ground Cover Ne: Narrow-leaved Emergents	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Turtle Nesting Areas - Harlequin Darner 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station
22	Yes – Boundary Revised	2.22	19 m to Wetland 23	Tamarack, Eastern White Cedar, Marsh Marigold, Spotted Touch-me-not, Dwarf Raspberry (<i>Rubus pubescens</i>), Reed Canary Grass, Yellow Sedge (<i>Carex flava</i>), Fox Sedge (<i>Carex vulpinoidea</i>)	Coniferous Swamp (SWC)	C: Coniferous Tress Ne: Narrow-leaved Emergents Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Likely seasonal surface water connection to Wetland 23	N/A

Wetland ID	Wetland Identified During Records Review	Attributes		Composition			Function		Project components within 50 m
		Size (hectares)	Distance to nearest wetland unit	Relevant Species	ELC communities	Vegetation Forms	Associated Candidate Wildlife Habitat	Hydrologic Connection	
23	Yes – Boundary Revised	1.15	19 m to Wetland 22	Eastern White Cedar, Eastern Hemlock, White Spruce (<i>Picea glauca</i>), Red Maple (<i>Acer rubrum</i>), Yellow Birch, Marsh Marigold, Spotted Touch-me-not, Naked Mitrewort (<i>Mitella nuda</i>), Wild Sarsaparilla	White Cedar Hardwood Organic Mixed Swamp (SWMO1-1); Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3)	H: Deciduous Trees C: Coniferous Trees Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Likely seasonal surface water connection to Wetland 22	N/A
25	No	0.26	32 m to Wetland 4	Willow (<i>Salix</i> sp.), Reed Canary Grass, Black Bulrush (<i>Scirpus atrovirens</i>), Goldenrod (<i>Solidago</i> sp.)	Mixed Mineral Meadow Marsh (MAMM3-1); Willow Mineral Deciduous Thicket Swamp (SWTM3)	Ts: Tall Shrubs Ne: Narrow-leaved Emergents Gc: Ground Cover	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Likely overland flow connection with Wetland 4.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station
26	No	0.25	308 m to Wetland to South West	Broad-leaved Cattail, Reed Canary Grass, Sedges, Marsh Marigold	Cattail Graminoid Mineral Meadow Marsh (MAMM1-2)	Ne: Narrow-leaved Emergents Be: Broad-leaved Emergents Re: Robust Emergents	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels
27	No	0.43	404 m to Wetland 26	Trembling Aspen, Basswood, Red-osier Dogwood, Riverbank Grape, Sensitive Fern, Bittersweet Nightshade (<i>Solanum dulcamara</i>), Lesser Duckweed	Poplar Mineral Deciduous Swamp (SWDM4-5); Red-osier Dogwood Mineral Deciduous Thicket Swamp (SWTM2-1)	H: Deciduous Trees Dh: Dead Deciduous Trees Ls: Low Shrubs Gc: Ground Cover FF: Free Floating	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads
28	No	0.12	42 m to Wetland 6	Black Bulrush, Sedges, Broad-leaved Cattail, Rough Goldenrod (<i>Solidago rugosa</i> ssp. <i>rugosa</i>), Spotted Joe-pye-weed (<i>Eutrochium maculatum</i> var. <i>bruneri</i>), Grass-leaved Goldenrod (<i>Euthamia graminifolia</i>) and Lance-leaved Aster (<i>Symphotrichum lanceolatum</i> var. <i>lanceolatum</i>)	Mixed Mineral Meadow Marsh (MAMM3-1)	Ne: Narrow-leaved Emergents Re: Robust Emergents Gc: Ground Cover	<ul style="list-style-type: none"> - Amphibian Breeding Habitat (wetland) - Generalized Candidate Significant Wildlife Habitat 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads

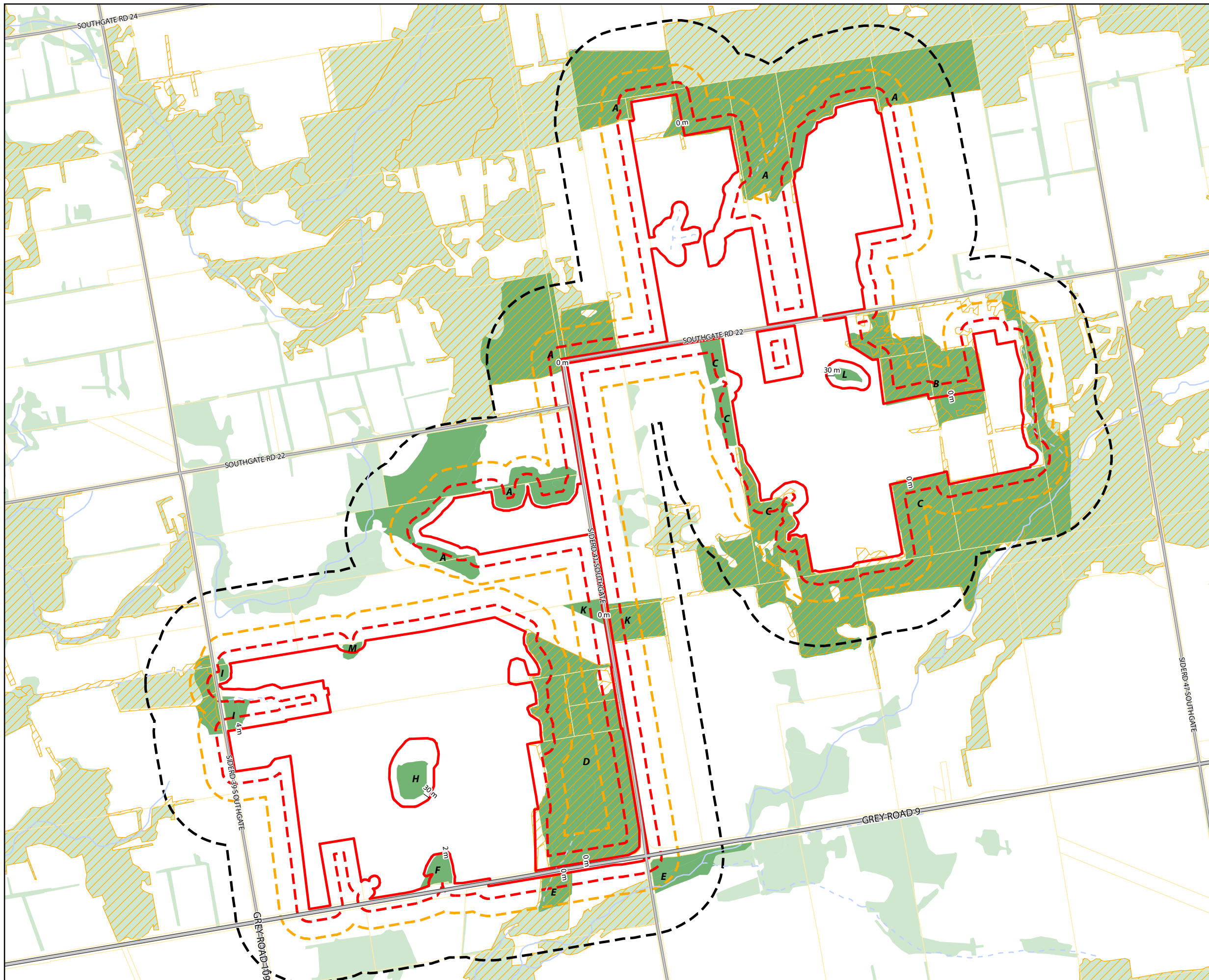
Wetland ID	Wetland Identified During Records Review	Attributes		Composition			Function		Project components within 50 m
		Size (hectares)	Distance to nearest wetland unit	Relevant Species	ELC communities	Vegetation Forms	Associated Candidate Wildlife Habitat	Hydrologic Connection	
29	No	0.32	150 m to Wetland 7	Broad-leaved Cattail, Reed Canary Grass, Sedges, Lesser Duckweed	Cattail Mineral Shallow Marsh (MASM1-1)	Ne: Narrow-leaved Emergents Re: Robust Emergents Ff: Free Floating	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (woodland) 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads
30	No	0.22	25 m to Wetland 9	Willow species (<i>Salix</i> sp.)	Willow Mineral Deciduous Thicket Swamp (SWTM3)	Ts: Tall Shrubs	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Tree/Shrubs) - Harlequin Darner 	Surface water connection to Wetland 9	N/A
31	No	0.15	234 m to Wetland to North	Reed Canary Grass, Woolgrass (<i>Scirpus cyperinus</i>)	Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3)	Ne: Narrow-leaved Emergents	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) 	No surface connection observed	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads
32	No	0.04	20 m to Wetland 22	Reed Canary Grass, Woolgrass (<i>Scirpus cyperinus</i>)	Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3)	Ne: Narrow-leaved Emergents	<ul style="list-style-type: none"> - Generalized Candidate Significant Wildlife Habitat - Amphibian Breeding Habitat (wetland) - Colonially Nesting Bird Breeding Habitat (Ground) 	No surface connection observed	N/A

7.2.3 Woodlands

As detailed in the *NHA Records Review Report*, a search and analysis of the records and resources identified woodlands within the Project Location and within 120 m of the Project Location. The focus of the woodlands site investigation was to document the boundaries of woodland features identified during the records review (**Figure 3**) and to determine if additional woodland features were present.

The boundaries of all woodlands identified are shown on **Figure 6** as well as their respective nearest distance to the defined Project Location boundary. The boundaries depicted on **Figure 6** are the result of field investigations by qualified individuals (see **Table 4**) to delineate the dripline of woodlands applicable to the Project Location. Please note, as outlined in Section 2.8.4 of the Grey County Official Plan (2013), the delineation of woodland boundaries by Grey County (in concert with the MNRF) was completed using via a desk-top GIS exercise and aerial photography, which would likely accounts for any discrepancies between the County's significant woodland mapping and Dillon's "delineated woodland" mapping. For reference, the boundaries of the Grey County significant woodlands have been included on **Figure 6** and will be further considered in the *NHA Evaluation of Significance Report*.

Table 8 outlines the Project components that fall within 50 m of the woodland boundary confirmed through site investigations. **Table 8** also outlines the attributes, composition and function of the woodlands within 50 m of a Project component and confirms if the woodland was included in the records review or was identified as a result of site investigations. Supplementary mapping in support of the woodland description is available in **Appendix D**. This includes mapping of the full extent of the woodlands within 120 m of the Project Location. Amendments to the *NHA Records Review* are outlined in **Section 8**.



SOUTHGATE SOLAR PROJECT

**FIGURE 6
WOODLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Grey County Significant Woodland
- Dillon Delineated Woodland
- Unevaluated Woodland

Note: Woodlands depicted on this figure are to delineate boundaries only. Evaluation for significance will be done in the NHA Evaluation of Significance Report.



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

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Table 8: Summary of Woodlands within 50 m of the Project Location

Woodland ID	Identified During Records Review?	Attributes				Composition		Function			Project Components within 50m
		Size (ha)*	Hectares within project location	Interior habitat** (ha)	Interior habitat† (ha)	Woodland diversity including vegetative communities and species present	Contains or is adjacent to sensitive features	Contains or adjacent to known natural features, fish habitat, source water protection area	Linkage function	Other	
A	Yes; Boundary Revised	409.48	0.88	102.41	12.30	This woodland area is composed of the following ELC communities: Fresh-Moist Sugar Maple Deciduous (FODM6-5); Dry-Fresh Sugar Maple- Black Cherry Deciduous (FODM5-7); Coniferous Plantation (TAGM1); Black Ash Deciduous Swamp (SWDM2-1).	Woodland contains unevaluated wetlands	As shown on Figure 6 , the watercourse that bisects the woodland may provide fish habitat.	Woodland A is large and provides direct connectivity to other woodland to the east and west within Grey County.	Interior habitat is present that may provide breeding habitat for breeding area sensitive forest bird species. Note: less than 20 m gap in canopy occurs where the woodland is bisected by roads.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV Substation
B	Yes; Boundary Revised	12.59	2.18	0.34	0	This woodland area is composed of the following ELC communities: Dry-Fresh White Pine Naturalized Coniferous (FOCM6-1); Dry-Fresh Deciduous Woodland (WODM4)	None	None known	None	None	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station
C	Yes; Boundary Revised	584.53	0	83.20	7.81	This woodland area is composed of the following ELC communities: Dry-Fresh Sugar Maple Deciduous (FODM5-1); Dry-Fresh Sugar Maple Hardwood Deciduous (FODM5-9); Balsam Fir Hardwood Mixed Mineral (SWMM5-1); and Dry-Fresh Deciduous Woodland (WODM4)	Woodland contains unevaluated wetlands	As shown on Figure 6 , the watercourse that bisects the woodland may provide fish habitat.	Woodland C is large and is connected to other woodlots to the southwest and north east via a watercourse.	Interior habitat is present that may provide breeding habitat for breeding area sensitive forest bird species. Note: less than 20 m gap in canopy occurs where the woodland is bisected by roads.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station
D	Yes; Boundary Revised	28.49	0	7.95	0	This woodland area is composed of the following ELC communities: Fresh-Moist Sugar Maple Hardwood Deciduous (FODM6-5); and White Cedar Hardwood Mixed Mineral (SWMM1-1)	Woodland contains unevaluated wetland	None known	Woodlot D is adjacent to Woodlot E.	None Note: Woodland D and E are separated by a gap of >20 m and are therefore considered separate woodlands.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads

Woodland ID	Identified During Records Review?	Attributes				Composition		Function			Project Components within 50m
		Size (ha)*	Hectares within project location	Interior habitat** (ha)	Interior habitat† (ha)	Woodland diversity including vegetative communities and species present	Contains or is adjacent to sensitive features	Contains or adjacent to known natural features, fish habitat, source water protection area	Linkage function	Other	
E	Yes; Boundary Revised	35.52	0	0	0	This woodland area is composed of the following ELC communities: Mixed Swamp (SWM); and White Cedar Hardwood Mixed Mineral (SWMM1-1)	Woodland contains unevaluated wetlands	As shown on Figure 6 , the watercourse that bisects the woodland may provide fish habitat	Woodland E is large and is connected to other woodlands to the southwest and north east via a watercourse.	None. Note: Woodland D and E are separated by a gap of >20 m and are therefore considered separate woodlands.	N/A
F	Yes	1.10	0.13	0	0	This woodland area is composed of the following ELC communities: Dry-Fresh Sugar Maple Deciduous (WODM4-3) and Coniferous Plantation (TAGM1)	None	None known	None	None	- Perimeter fence - Solar panels - Access roads
H	Yes; Boundary Revised	1.61	0	0	0	This woodland area is composed of the following ELC communities: Poplar Mineral Deciduous Swamp (SWDM4-5)	Woodland contains unevaluated wetlands	None known	None	None	- Perimeter fence - Solar panels - Access roads
I	Yes; Boundary Revised	7.75	0	0	0	This woodland area is composed of the following ELC communities: White Cedar-Hardwood Organic Mixed (SWM4-1), Fresh-Moist White Cedar Coniferous Forest (FOCM4-1) and Coniferous Plantation (TAGM1)	Woodland contains unevaluated wetlands	None known	None	None Note: less than 20 m gap in canopy occurs where the woodland is bisected by Sideroad 39.	N/A
K	Yes; Boundary Revised	4.16	0	0	0	This woodland area is composed of the following ELC community: Fresh-Moist Sugar Maple Deciduous (FODM6-5)	None	None	None	None. Note: less than 20 m gap in canopy occurs where the woodland is bisected by Sideroad 41.	- Overhead distribution line
L	No	0.43	0	0	0	This woodland area is composed of the following ELC community: Poplar Mineral Deciduous Swamp (SWDM4-5)/ Red-osier Dogwood Deciduous Thicket Swamp Complex (SWTM2-1)	Woodland contains unevaluated wetland	None	None	None	- Perimeter fence - Solar panels - Access roads

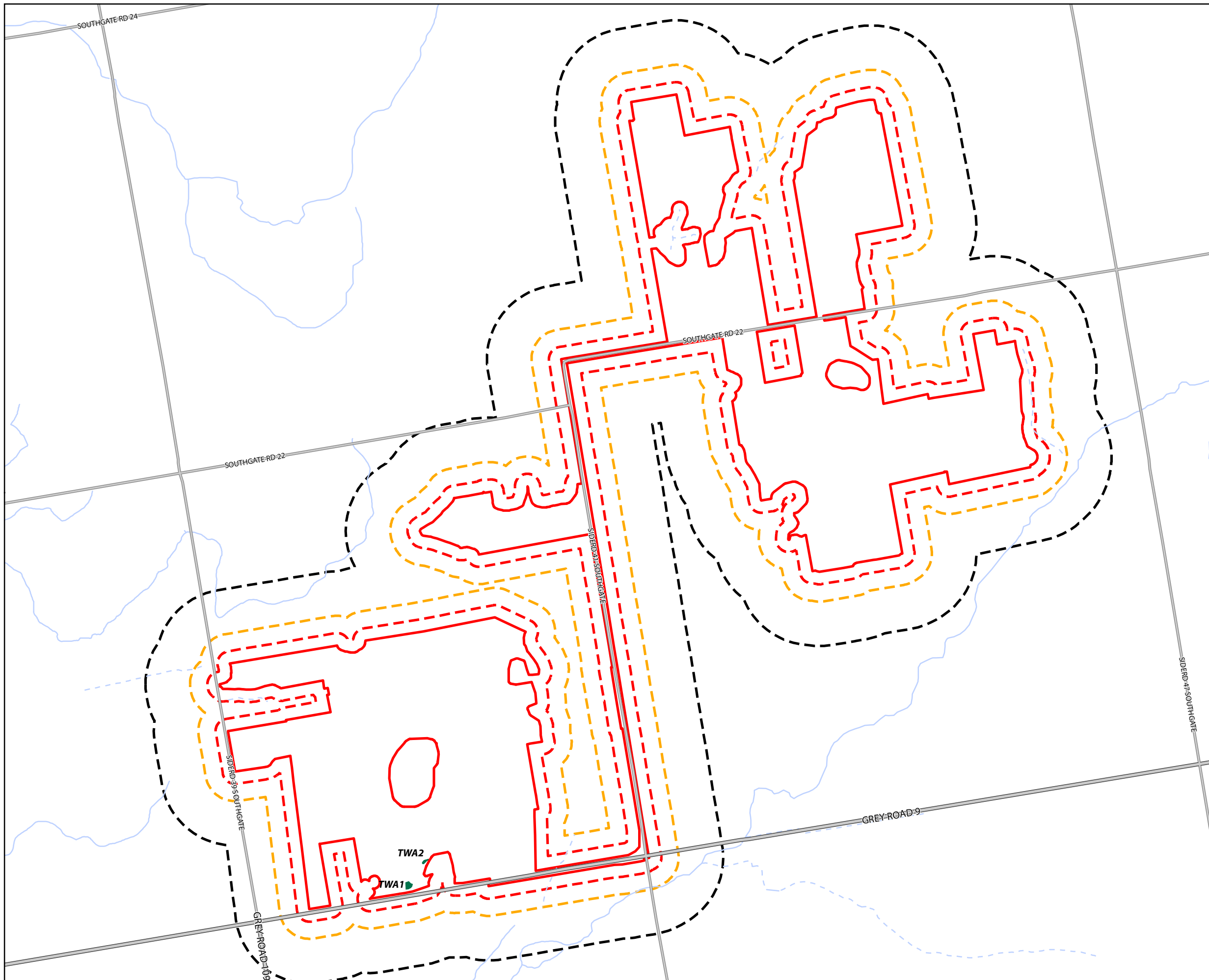
Woodland ID	Identified During Records Review?	Attributes				Composition		Function			Project Components within 50m
		Size (ha)*	Hectares within project location	Interior habitat** (ha)	Interior habitat† (ha)	Woodland diversity including vegetative communities and species present	Contains or is adjacent to sensitive features	Contains or adjacent to known natural features, fish habitat, source water protection area	Linkage function	Other	
M	No	0.39	0.15	0	0.15	This woodland area is composed of the following ELC community: Fresh-Moist Manitoba Maple Deciduous Woodland (WODM5-3)	None	None	None	None	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads

*Size refers to the total size of the woodland area; **Interior habitat begins 100 m from the woodland edge; †Interior habitat begins 200 m from the woodland edge. (See Supplemental Woodland mapping in **Appendix D**).

7.2.4 Wildlife Habitat

An overall review of known wildlife habitat that has been identified in the area of the Project Location was completed in the *NHA Records Review Report*. The records review information has been augmented by the results of the site investigation work. The information collected during the site investigation was assessed in consideration of the habitat criteria outlined in Sections 4 to 7 and Appendix M, N, and Q of the Significant Wildlife Habitat Technical Guide (MNR 2000) and associated Eco-region Criteria Schedule for wildlife habitat applicable to Eco-region 6E (MNR 2012). Based on this information, candidate significant wildlife habitat in the area surrounding the Project Location was determined. **Table 9** outlines wildlife habitat applicable to Eco-region 6E and summarizes if it is relevant to the Project Location and/or adjacent area(s). The boundaries and location of each candidate significant wildlife habitat is described in **Table 9** and mapped on **Figures 7A- 7P**.

Species of Conservation Concern were identified according to the definition provided in the Significant Wildlife Habitat Technical Guide (MNR 2000). Therefore, species listed in **Appendix C** with an SRANK of S1, S2 or S3, *Special Concern* in Ontario or have a status of *Threatened* or *Endangered* federally (but not provincially), denote Species of Conservation Concern. Species of Conservation Concern with the potential to occur in the general area of the Project Location are discussed in **Table 9** below. Where appropriate, they are discussed in the relevant wildlife habitat type. Reporting related to the protection of Ontario's *Endangered* and *Threatened* Species at Risk is being provided to the appropriate agency under separate cover.



SOUTHGATE SOLAR PROJECT

**FIGURE 7A
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
TURTLE WINTERING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Turtle Wintering Area



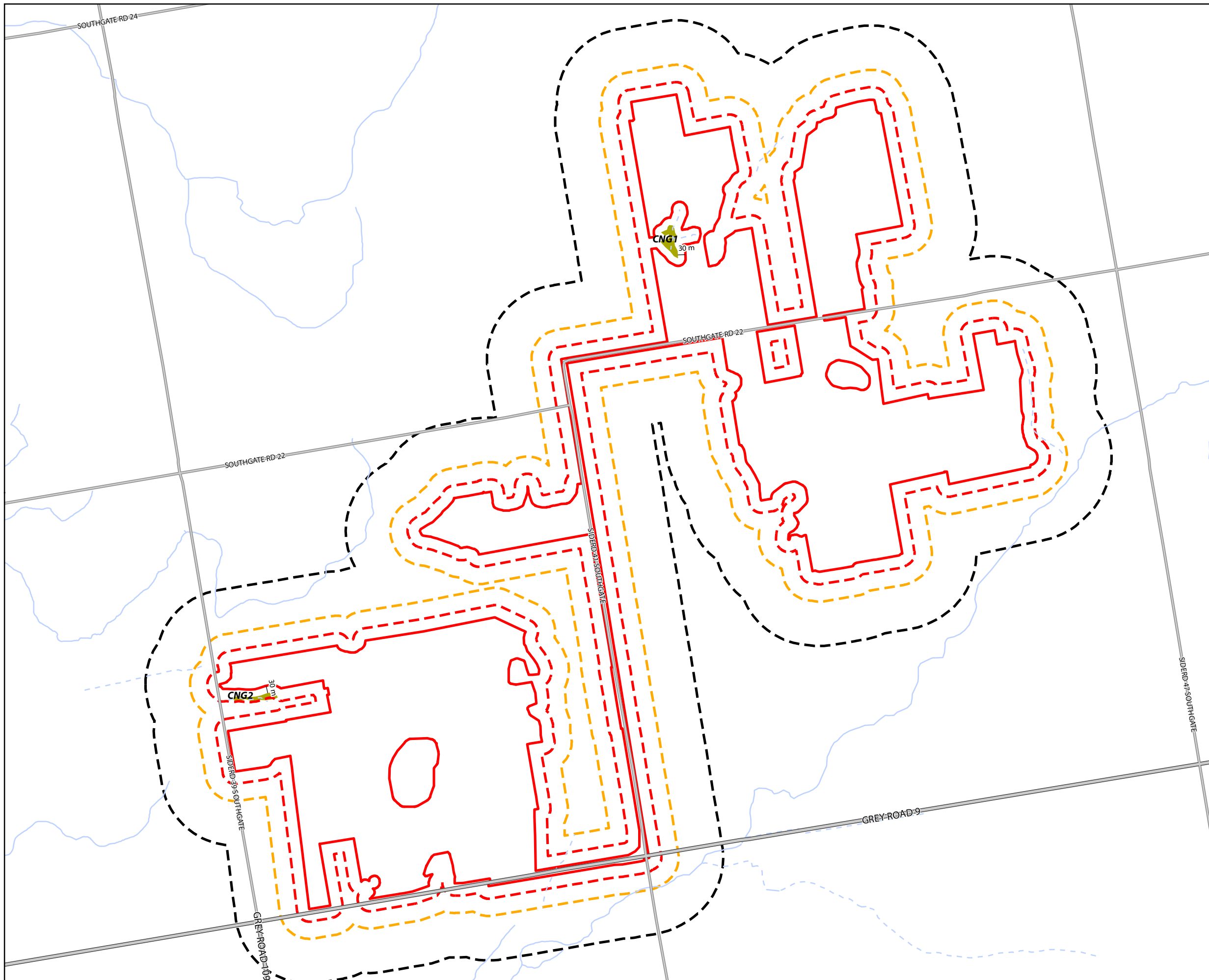
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SOUTHGATE SOLAR PROJECT

**FIGURE 7B
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
COLONIAALLY NESTING BIRD BREEDING
HABITAT (GROUND)**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Colonially Nesting Bird Breeding Habitat (Ground)



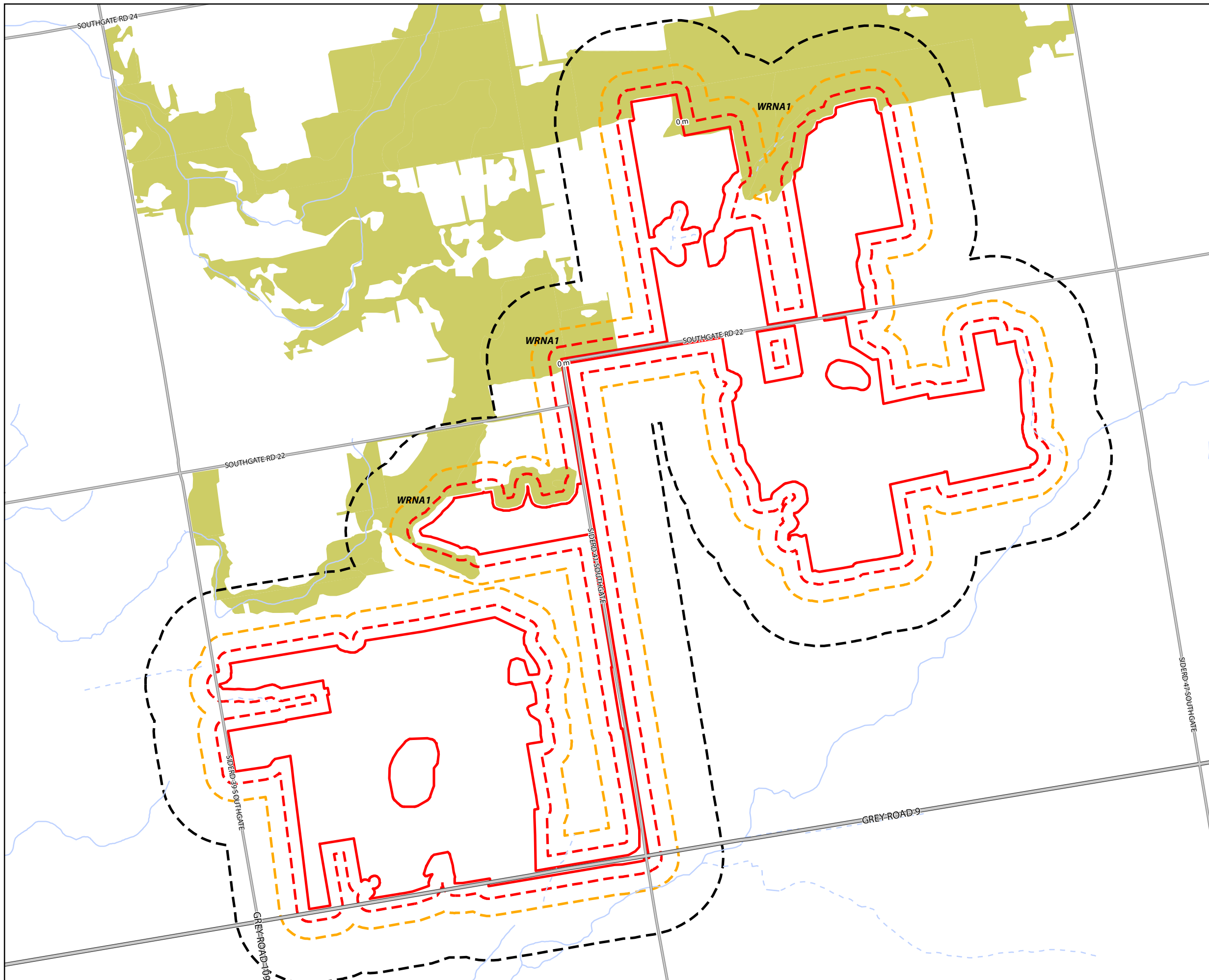
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SOUTHGATE SOLAR PROJECT

**FIGURE 7C
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
WOODLAND RAPTOR NESTING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Woodland Raptor Nesting Area



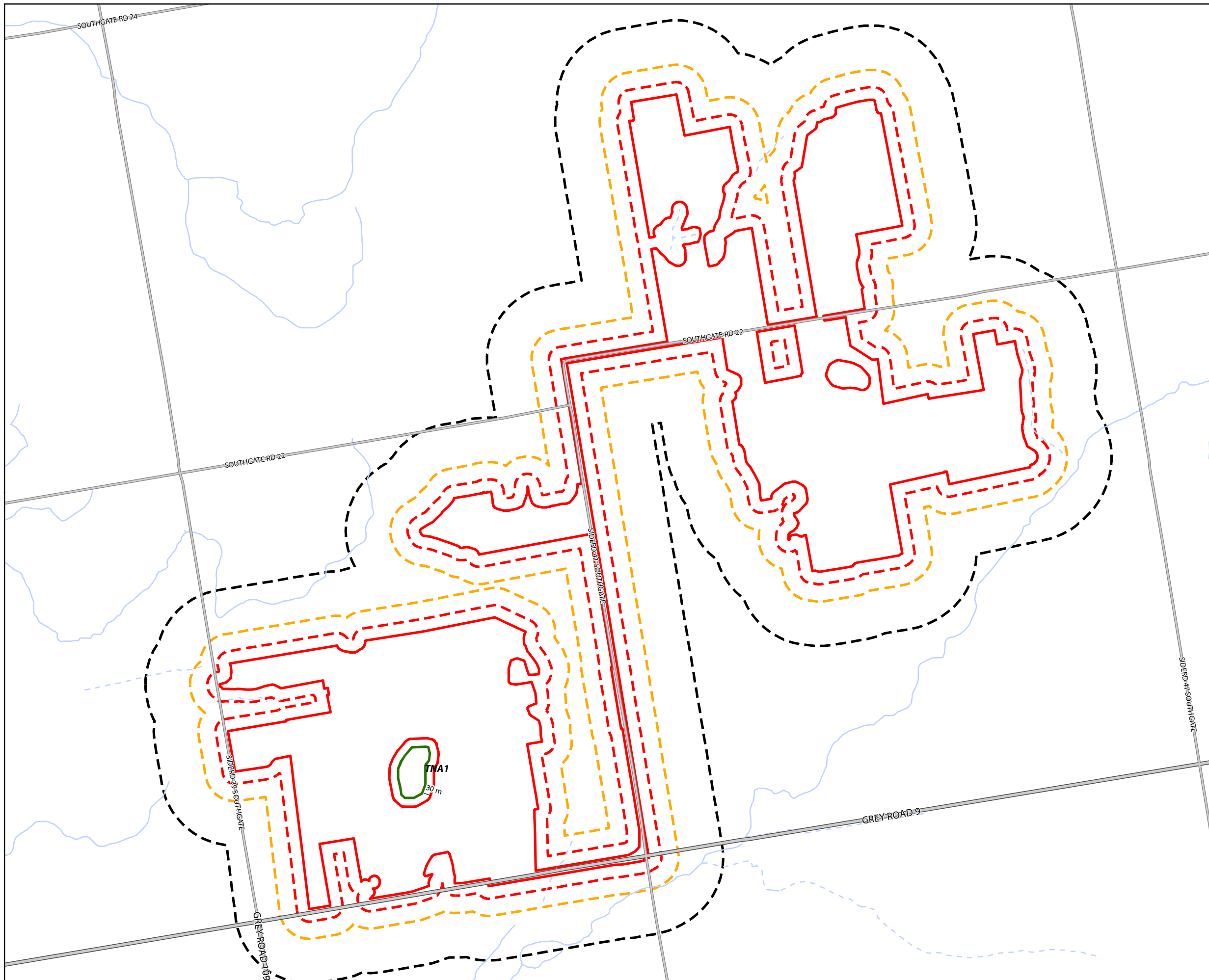
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SOUTHGATE SOLAR PROJECT

**FIGURE 7D
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
TURTLE NESTING AREAS**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Turtle Nesting Area



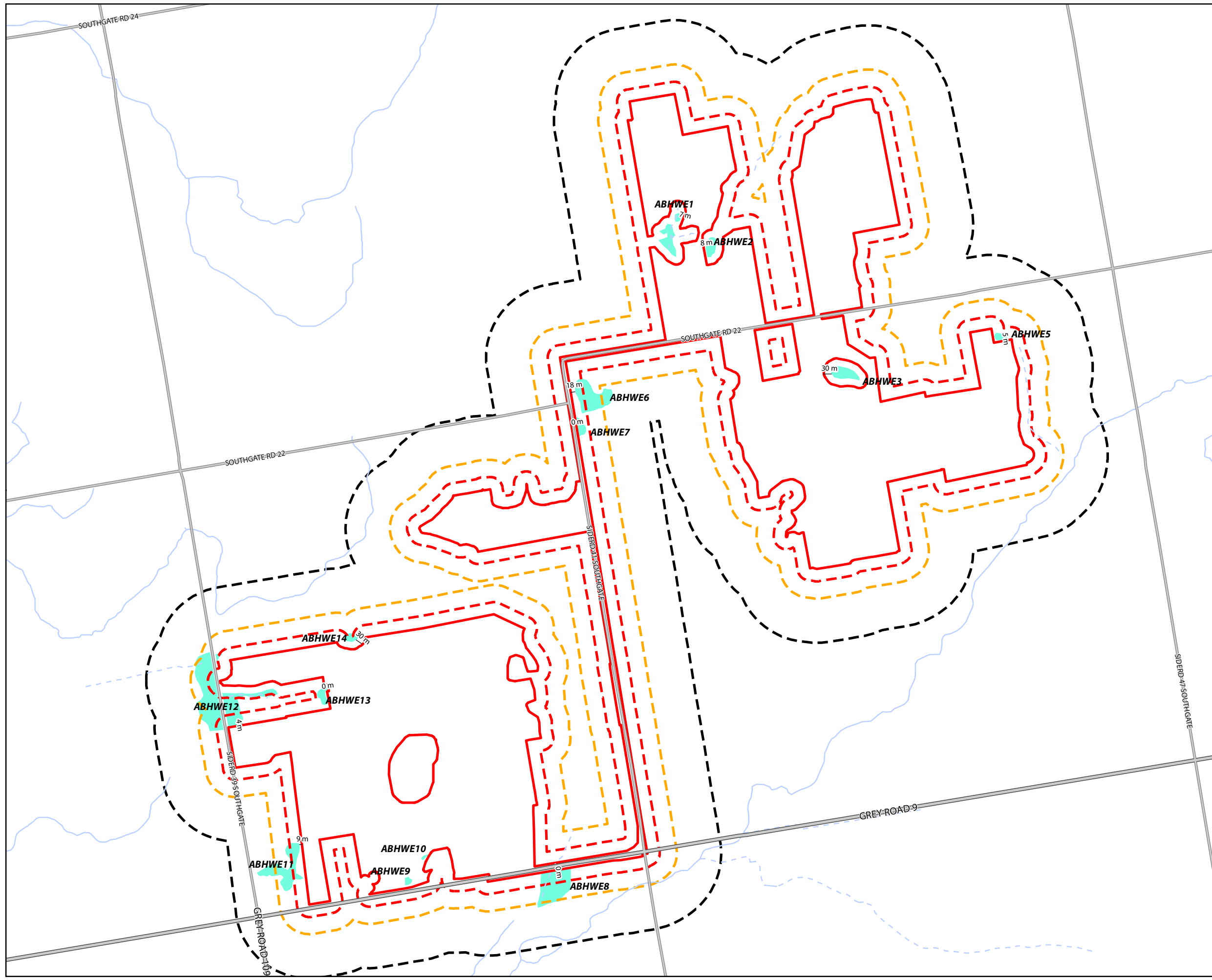
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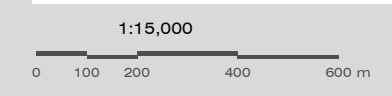
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SOUTHGATE SOLAR PROJECT

**FIGURE 7E
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WETLAND)**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Amphibian Breeding Habitat (Wetland)



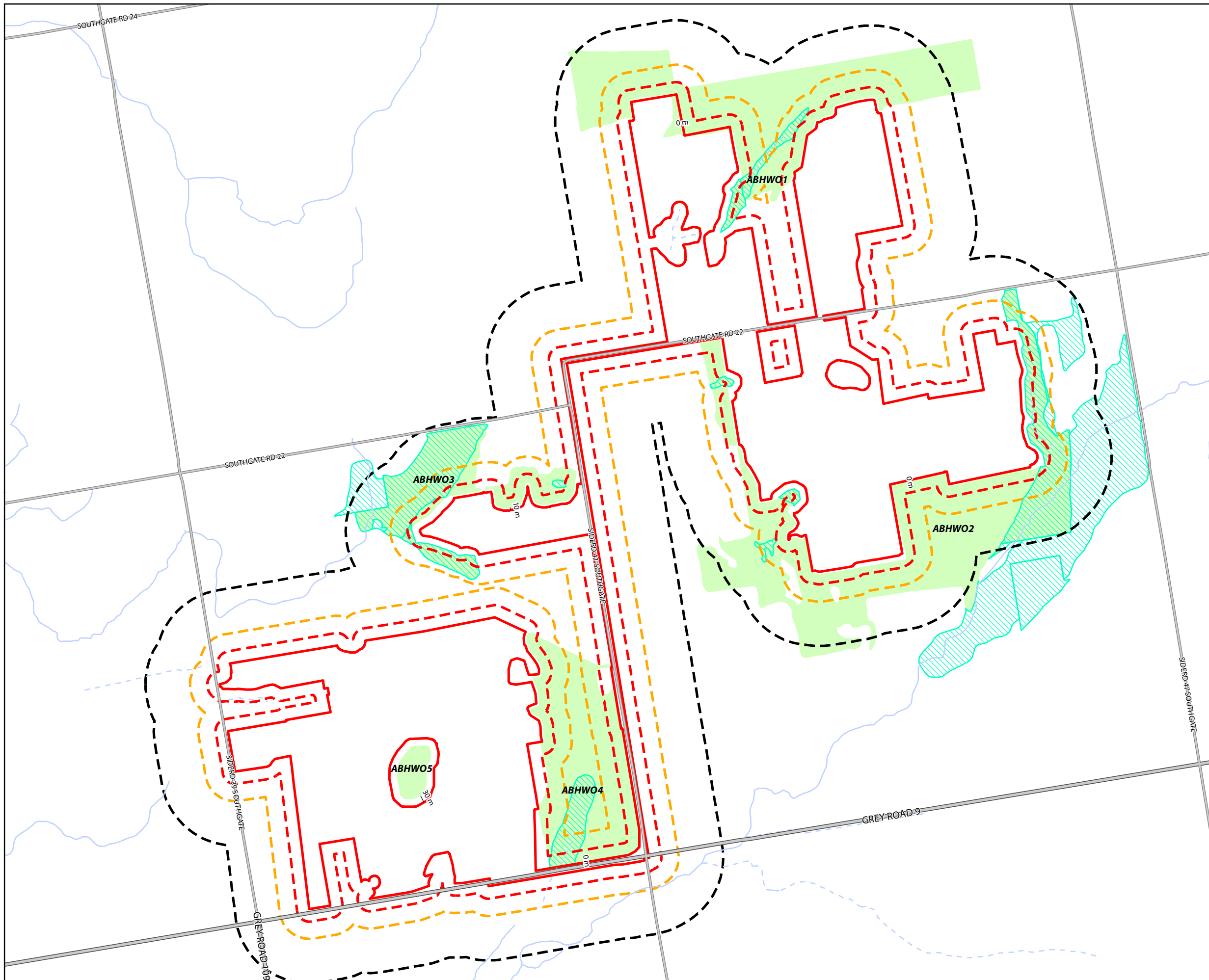
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SOUTHGATE SOLAR PROJECT

**FIGURE 7F
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WOODLAND)**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Wetland
- Amphibian Breeding Habitat (Woodland)



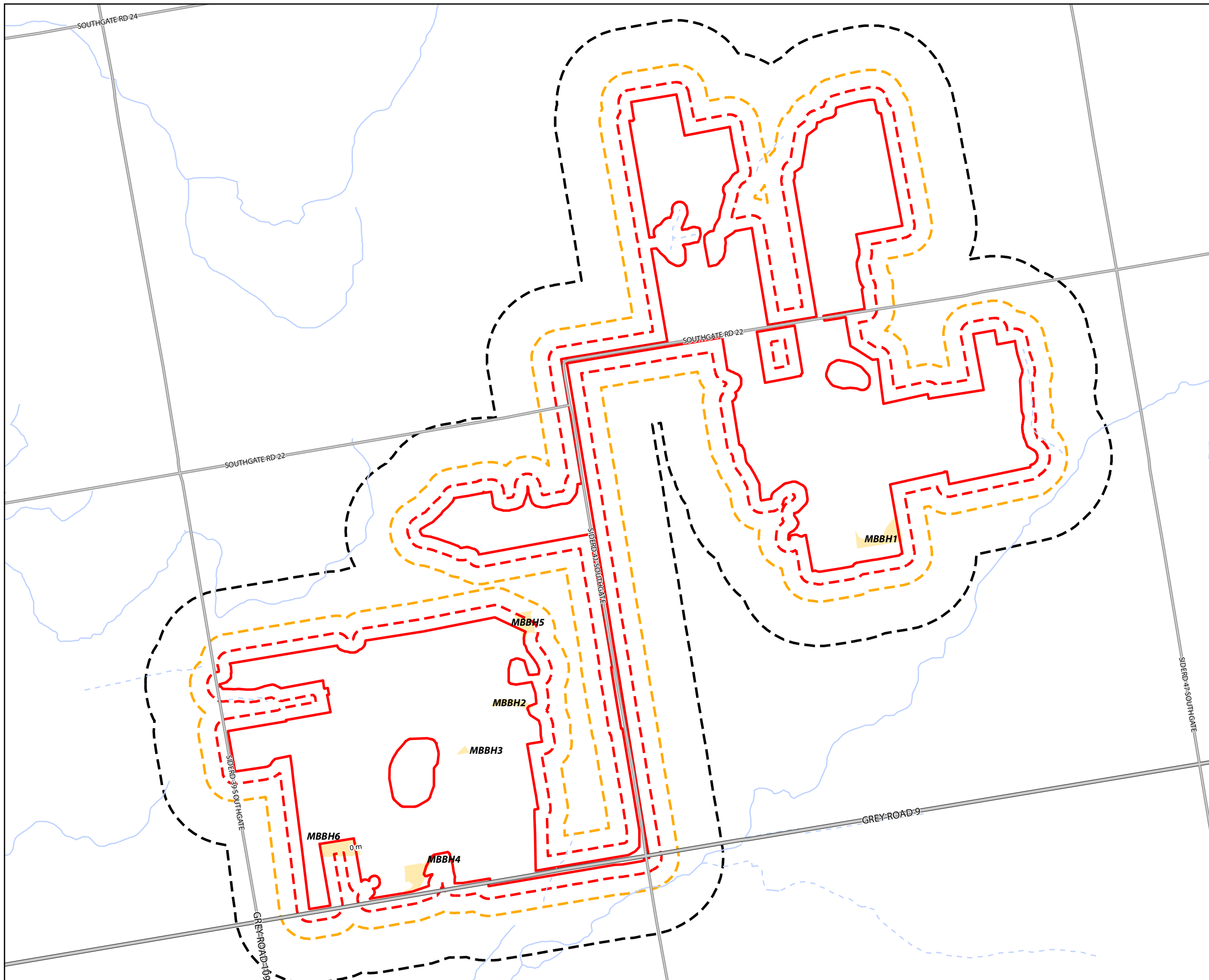
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SOUTHGATE SOLAR PROJECT

**FIGURE 7G
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
MARSH BIRD BREEDING HABITAT**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Marsh Bird Breeding Habitat



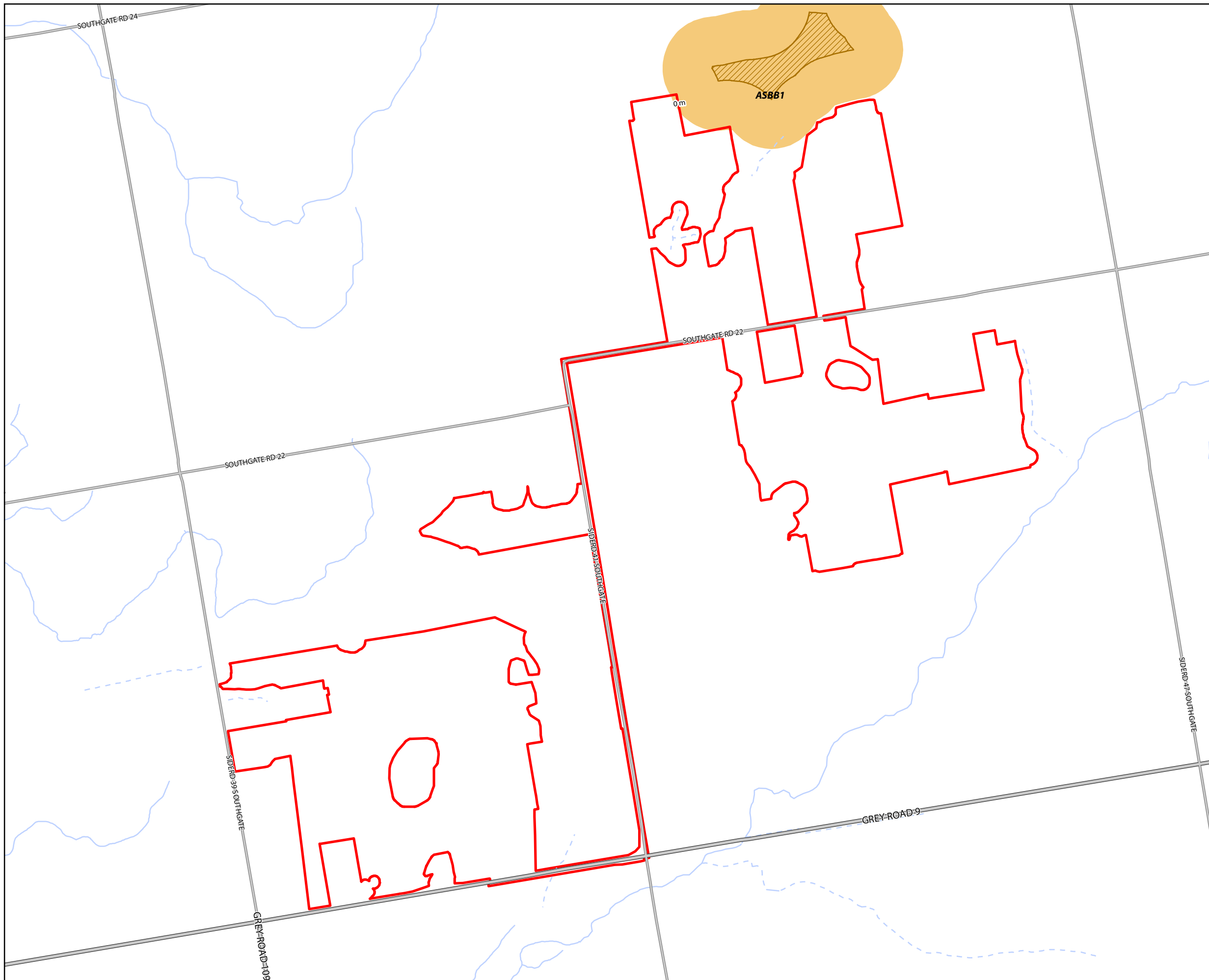
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SOUTHGATE SOLAR PROJECT

**FIGURE 7H
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
WOODLAND AREA-SENSITIVE
BIRD BREEDING HABITAT**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- 200 m Woodland Interior
- Woodland Area-Sensitive Bird Breeding Habitat



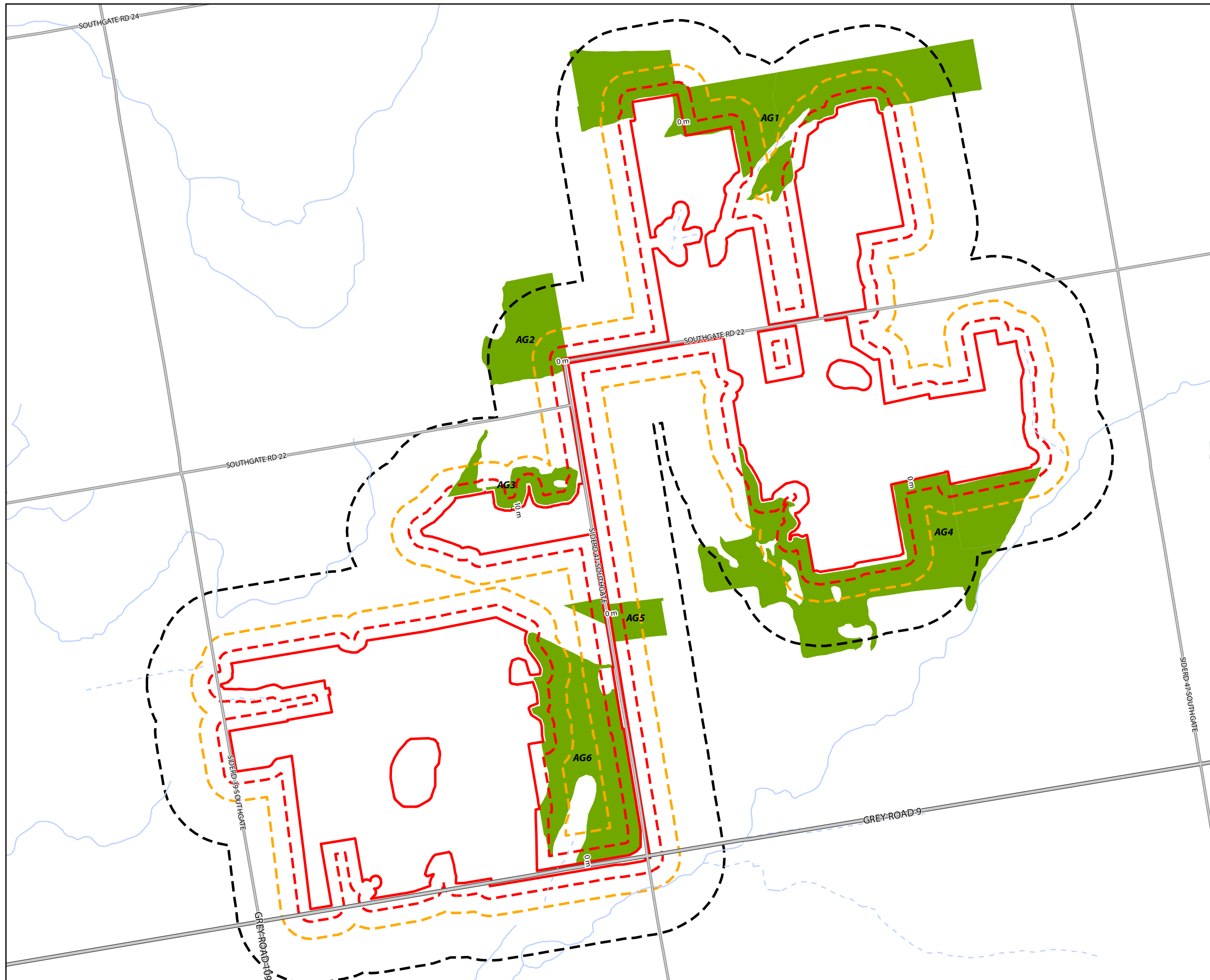
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SOUTHGATE SOLAR PROJECT

**FIGURE 71
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
AMERICAN GROMWELL**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- American Gromwell

1:15,000

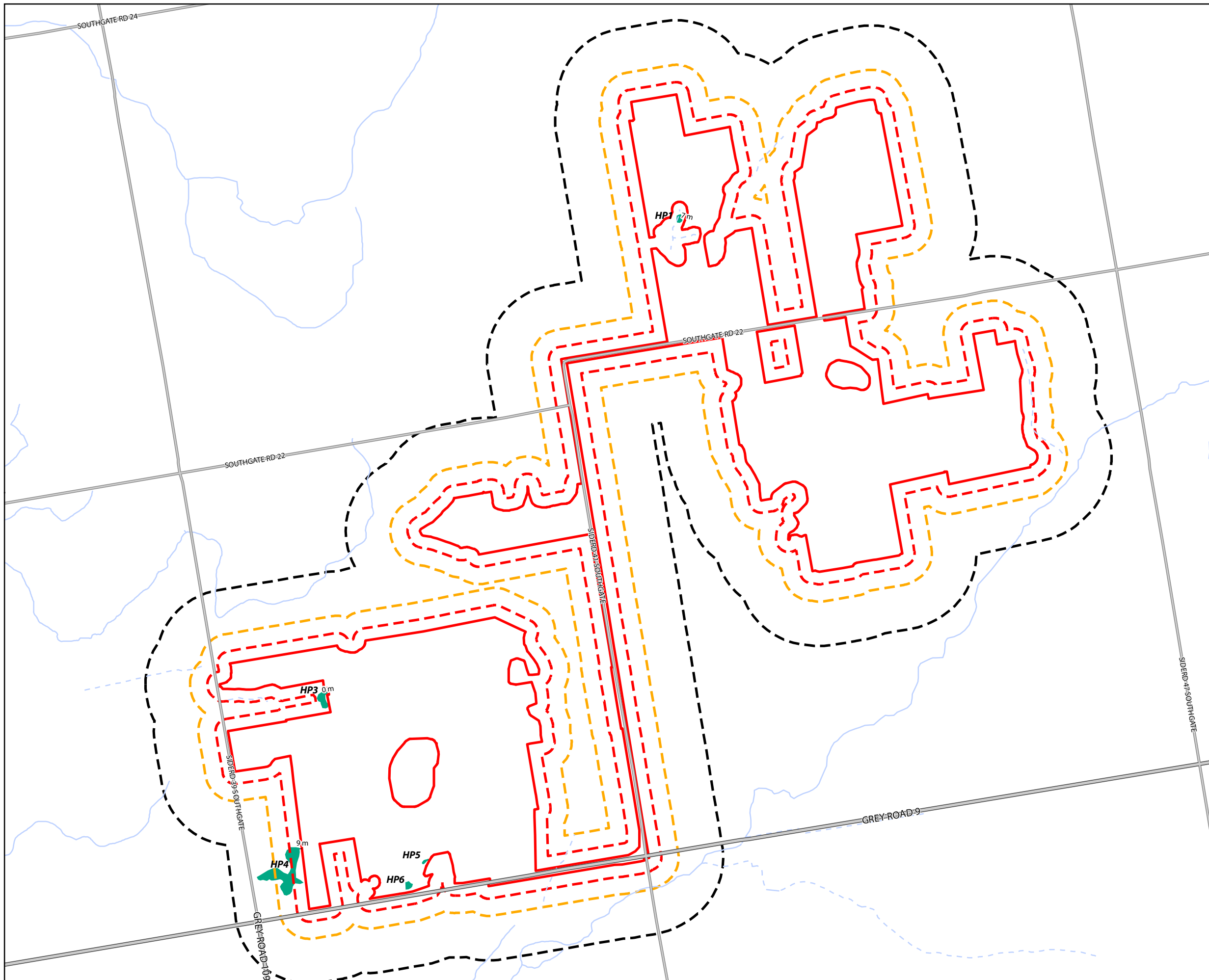
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SOUTHGATE SOLAR PROJECT

**FIGURE 7J
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
HILL'S PONDWEED**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Hill's Pondweed



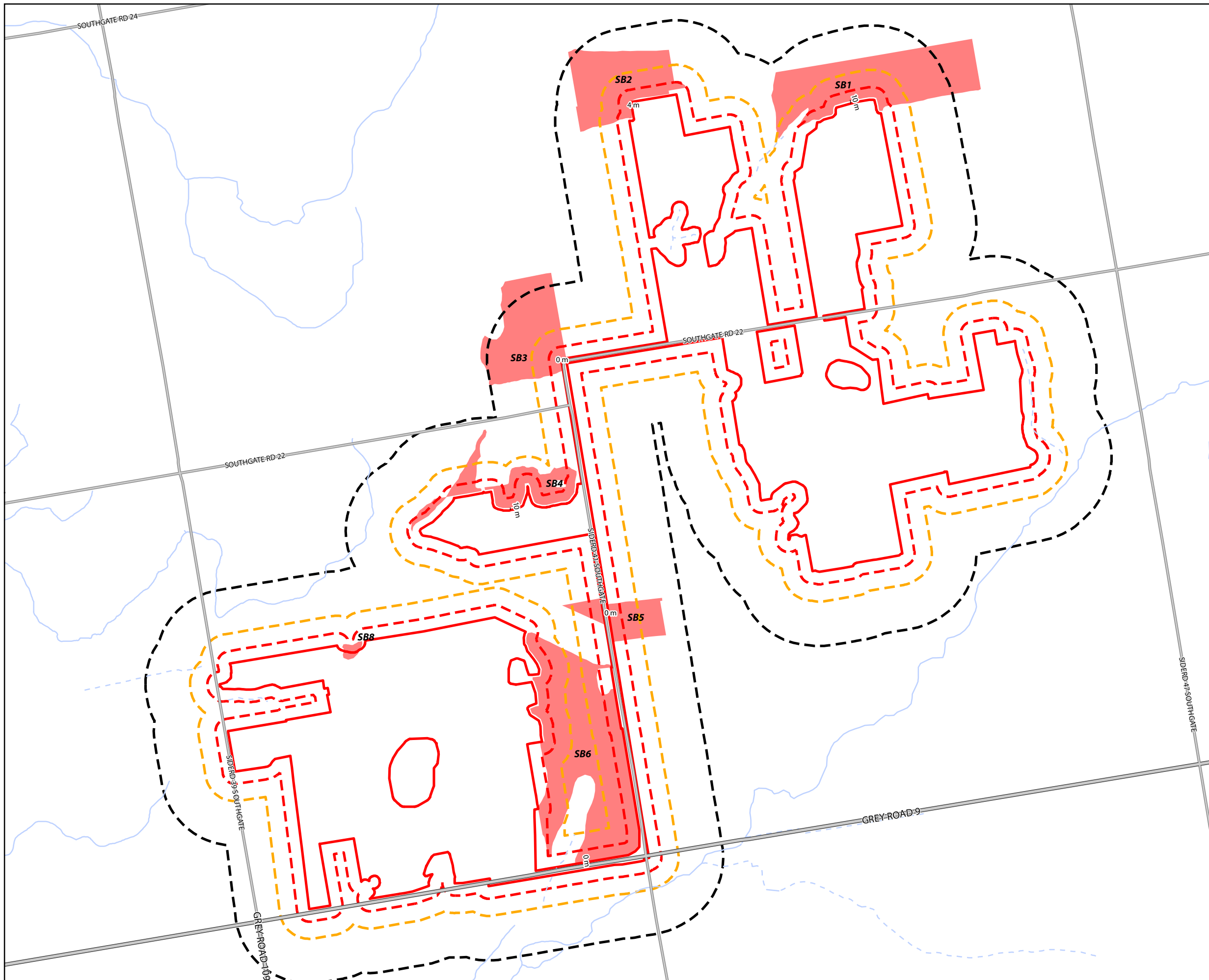
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SOUTHGATE SOLAR PROJECT

**FIGURE 7K
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
SCARLET BEEBALM**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Scarlet Beebalm



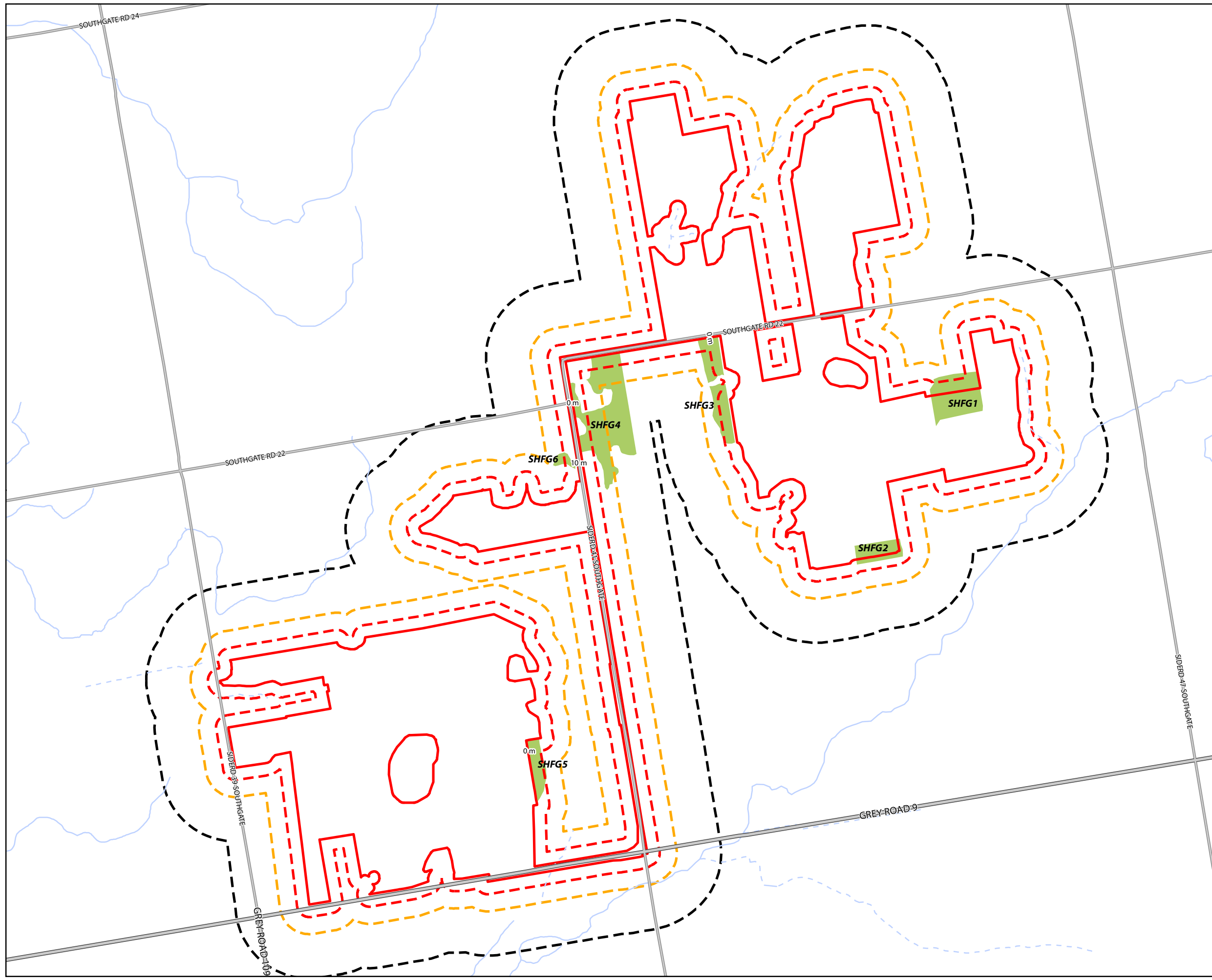
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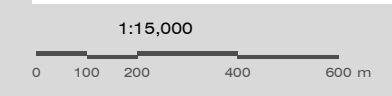
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SOUTHGATE SOLAR PROJECT

**FIGURE 7L
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
SOFT-HAIRY FALSE GROMWELL**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Soft-Hairy False Gromwell



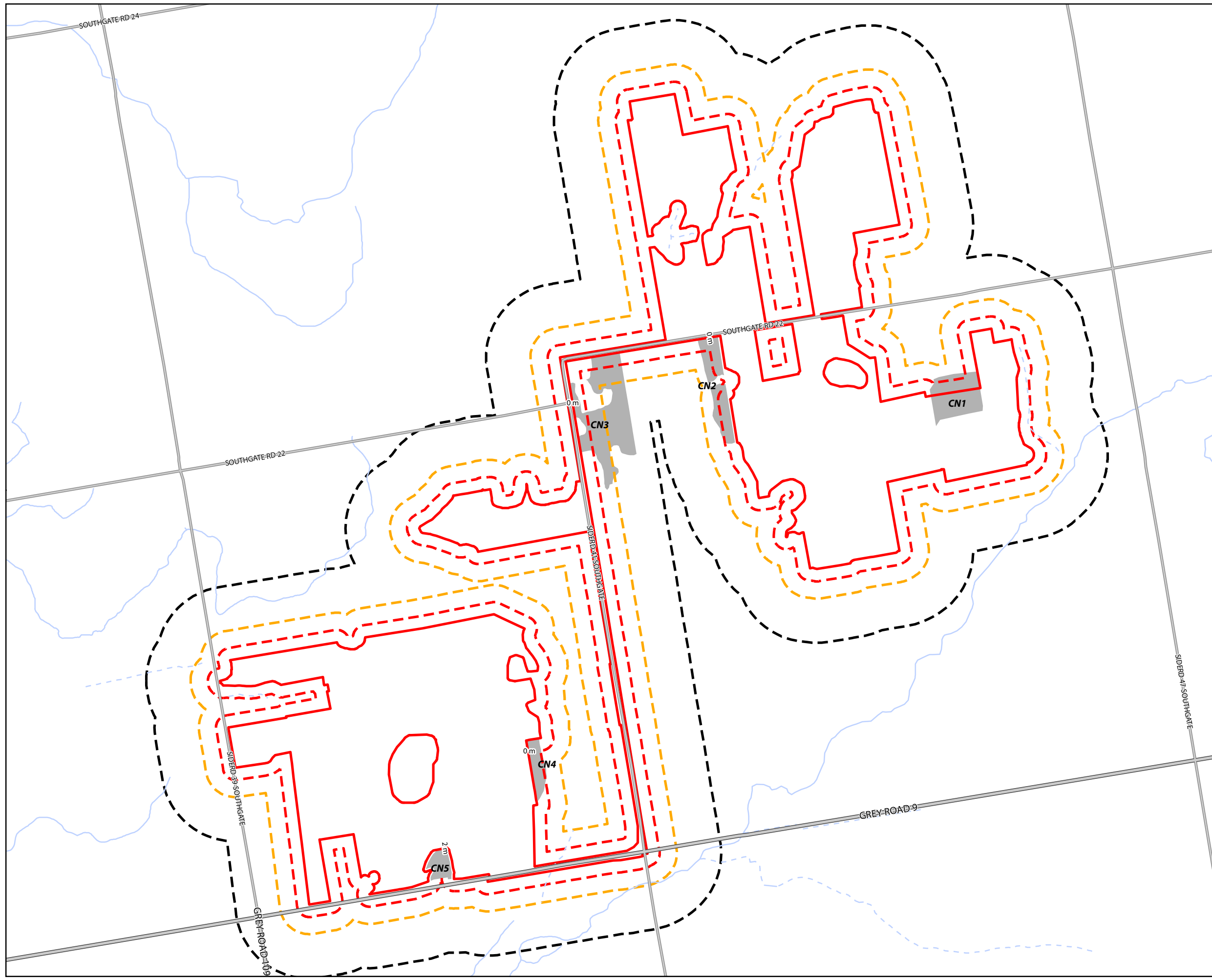
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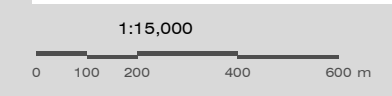
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SOUTHGATE SOLAR PROJECT

**FIGURE 7M
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
COMMON NIGHTHAWK**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Common Nighthawk



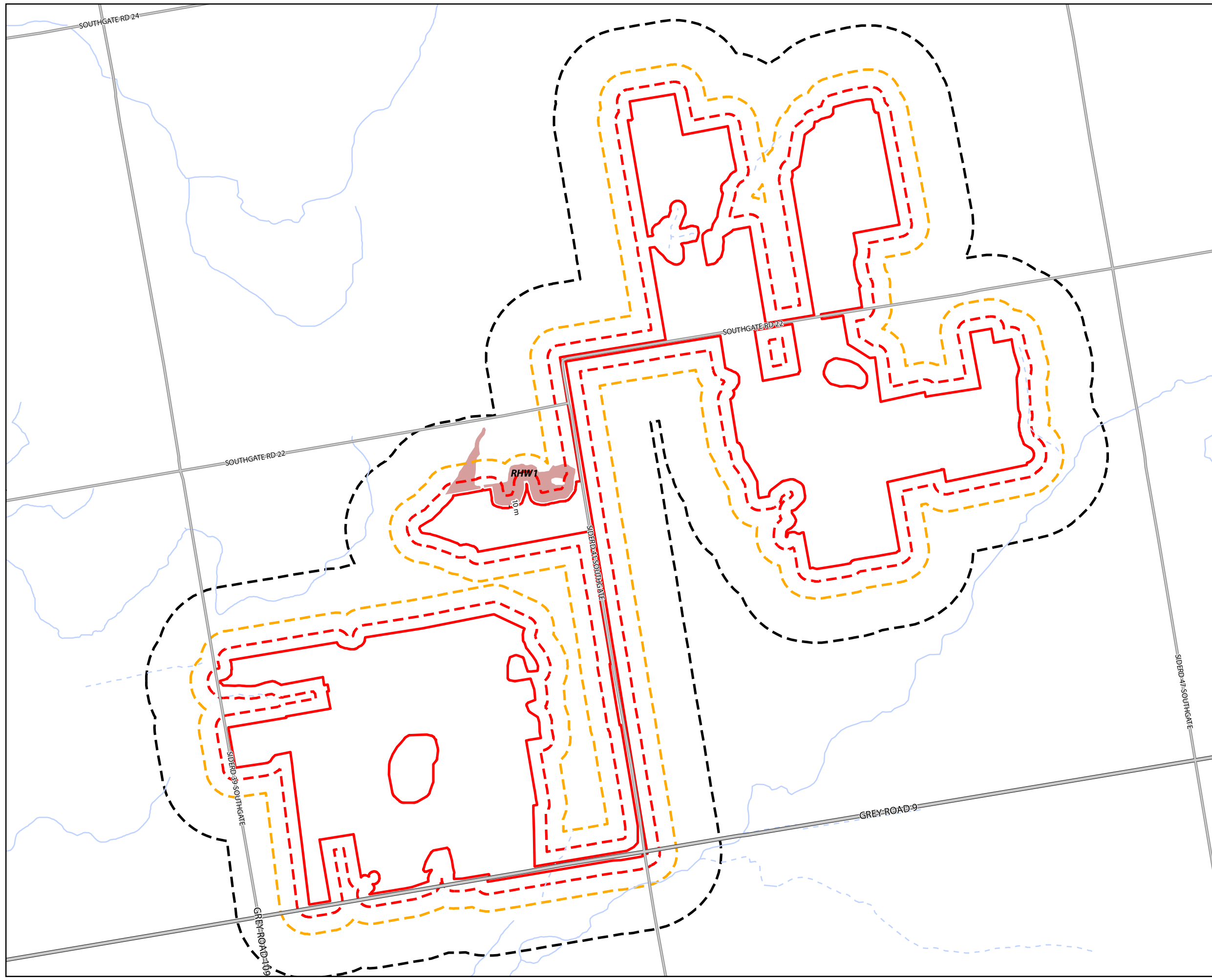
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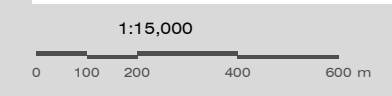
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SOUTHGATE SOLAR PROJECT

**FIGURE 7N
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
RED-HEADED WOODPECKER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Red-Headed Woodpecker



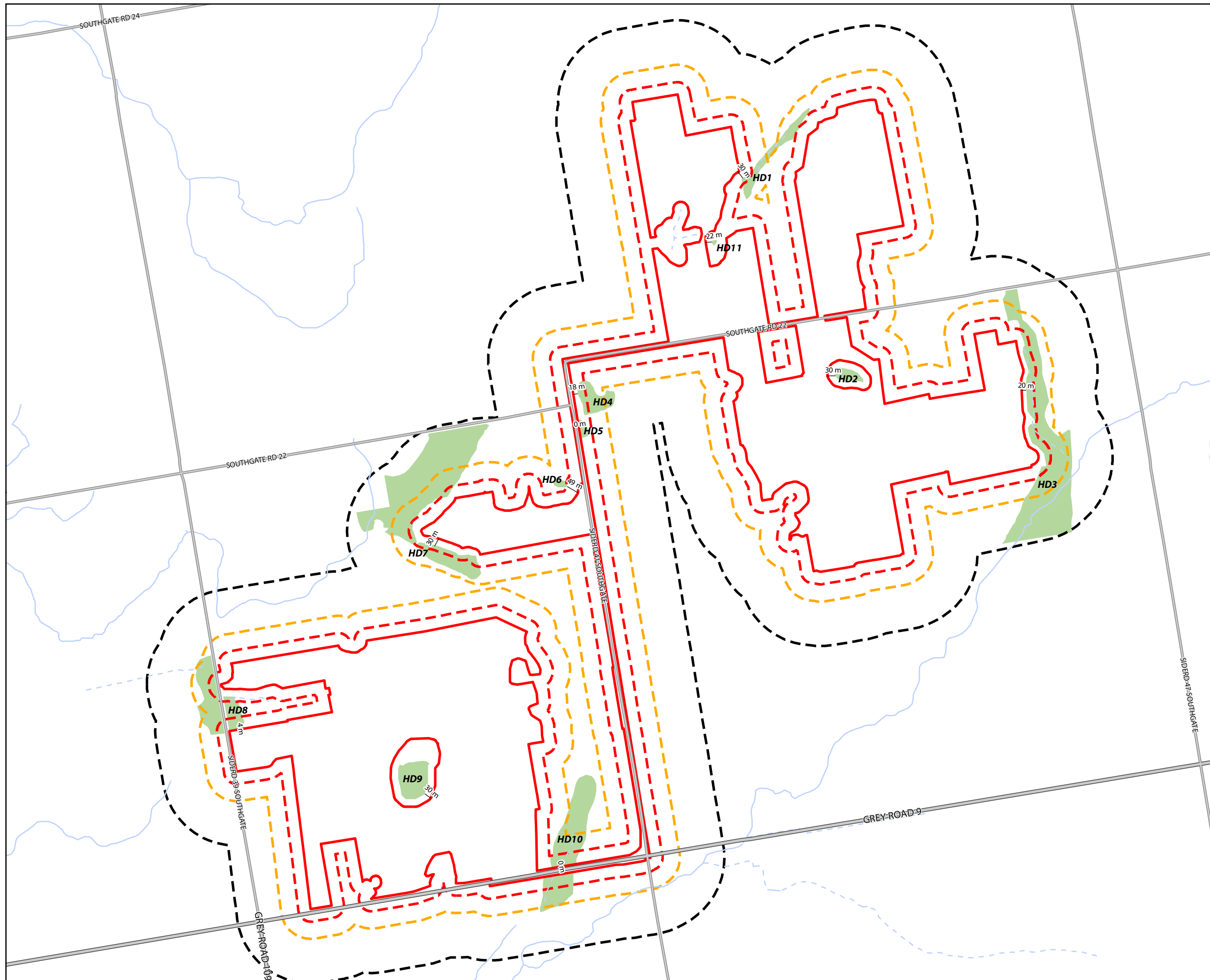
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 1/7/2015



SOUTHGATE SOLAR PROJECT

**FIGURE 70
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
HARLEQUIN DARNER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Harlequin Darners

1:15,000

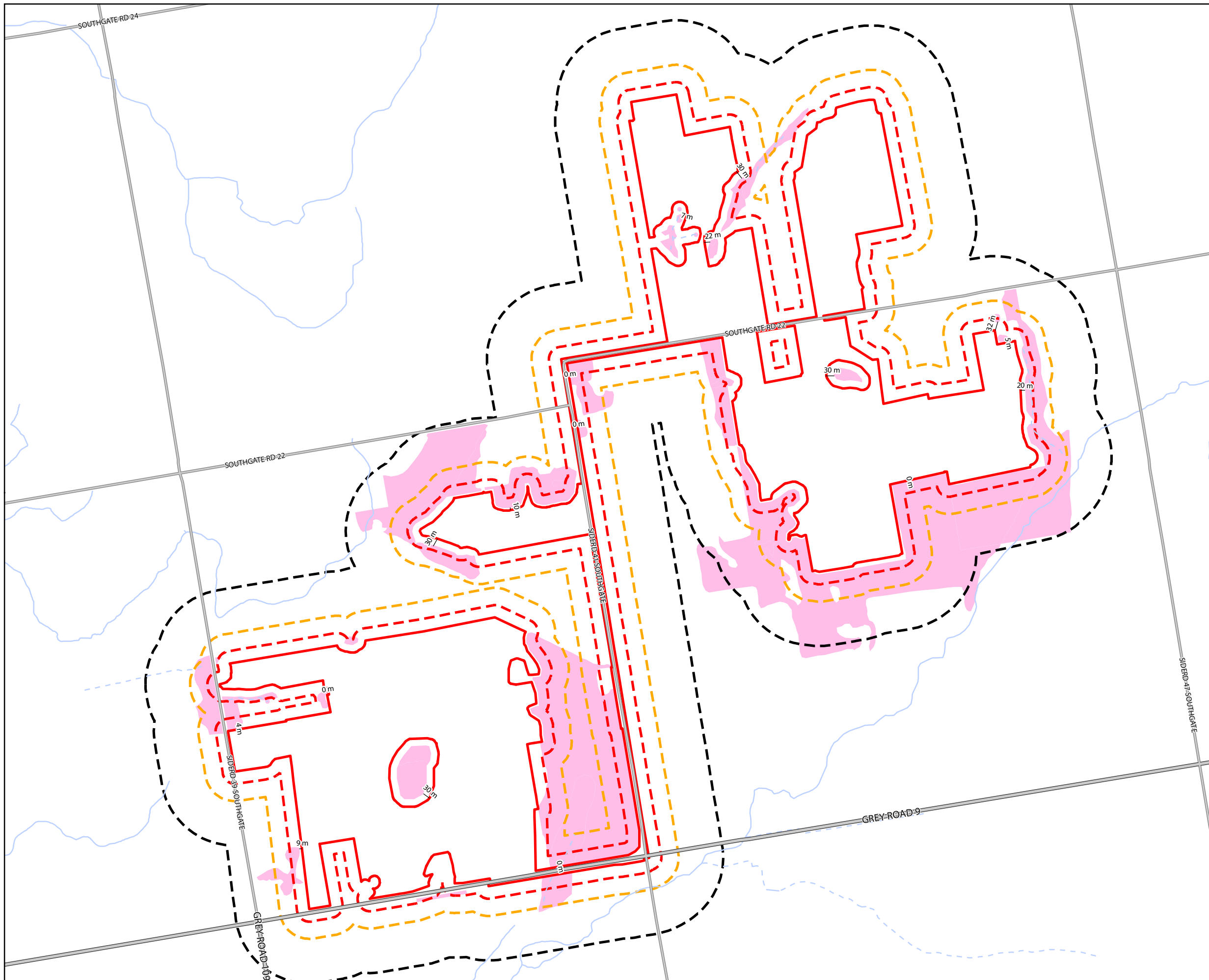
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

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DATE: 1/7/2015



SOUTHGATE SOLAR PROJECT

**FIGURE 7P
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
GENERALIZED CANDIDATE SIGNIFICANT
WILDLIFE HABITAT**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Generalized Candidate Significant Wildlife Habitat:
 - Seeps and Springs
 - Waterfowl Stopover and Staging Areas (Aquatic)
 - Turtle Wintering Areas
 - Deer Winter Congregation Areas
 - Marsh Bird Breeding Habitat
 - Bat Maternity Colonies
 - Shorebird Migratory Stopover and Staging Areas
 - Woodland Area Sensitive Bird Breeding Habitat
 - Amphibian Breeding Habitat (Wetland)
 - Hill's Pondweed
 - Scarlet Beebalm



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 17/2015

Table 9: Candidate Wildlife Habitat in the Project Location and Surrounding 50 m based on Records Review and Site Investigation

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Seasonal Concentration Areas												
Waterfowl Stopover and Staging Areas (Terrestrial)	Fields with sheet water from spring melt and run-off which provide invertebrate foraging habitat for migrating waterfowl. Can be found in any Meadow (ME) (or CUM communities in the ELC first approximation codes) or Thicket (TH) (or CUT communities in the ELC first approximation codes) that are maintained through anthropogenic disturbances (i.e., planting or agriculture, clearing, recreation, soil movement, grazing or mowing). Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	The ME and TH communities that exist on site do not meet the minimum requirements to consider this applicable Candidate Significant Wildlife Habitat. The agricultural fields on site are hilly and well drained and would not be considered SWH for Waterfowl Stopover and Staging Areas (Terrestrial).	N/A	N/A
Waterfowl Stopover and Staging Areas (Aquatic)	Ponds, marshes, lakes, bays, coastal inlets and watercourses used during migration can be significant wildlife habitat for local and migrant waterfowl populations during migration. Sewage treatment ponds and storm water ponds do not qualify as a significant wildlife habitat; however, a reservoir managed as a large wetland or pond/lake does qualify. These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). Can be found in the following community types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Deciduous Swamp (SWD). Species of Conservation Concern: Canvasback Redhead	Deciduous Swamp (SWD) and Meadow Marsh (MAM) ecosites are found within the surrounding 50 m for the Project Location.	N/A	---	✓	---	---	---	✓	Areas of Swamp and Meadow Marsh are located within the 50 m setback area; these will be considered under Generalized Candidate Significant Wildlife Habitat. The meadow marsh community associated with Wetland #28 is within the Project Location. However, due to the lack of standing water, a food supply of aquatic invertebrates and/or aquatic vegetation is not available and therefore this marsh area is not applicable as this type of habitat. See Figure 7P .	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Shorebird Migratory Stopover and Staging Areas	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a significant wildlife habitat. Can be found within the following ELC habitat types: Meadow Marsh (MAM), Sand Dune (SD), Beach Bar (BB).	Meadow Marsh (MAM) is found within the surrounding 50 m of the Project Location.	N/A	---		---	---	---	✓	A few small areas of marsh habitat are located within the 50 m setback; one of the OA ecosites in the SW corner of the project location possessed a muddy, unvegetated shoreline and will be considered Generalized Candidate Significant Wildlife Habitat. The meadow marsh community associated with Wetland #28 is within the Project Location. However, due to the lack of standing water, this marsh area is not applicable as this type of habitat. See Figure 7P .	N/A	N/A
Raptor Wintering Area	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Least disturbed sites, idle/fallow or lightly grazed field/meadow habitats with adjacent woodlands may be considered significant wildlife habitat. Habitat includes any Forest (FO), in addition to one of the following Community Types: Meadow (CUM), Thicket (CUT), Savannah (CUS), Woodland (CUW) (<60% cover). Raptor wintering sites need to be >20 ha. Species of Conservation Concern: Short-eared Owl	Potential habitat exists within the Project Location and 50 m setback.	N/A			✓		---	---	There is no habitat that meets the criteria for raptor wintering area. There are areas on the Project Location and within 50 m setback that include a mix of forest (FO) and upland communities that are 20 ha or greater in size, but there are no areas where the upland communities Meadow (ME) (CUM communities in the ELC first approximation codes) and Thicket (TH) (CUT communities in the ELC first approximation codes) as well as pasture land adjacent to the forest are >15 ha so they are not considered Candidate Significant Wildlife Habitat (see Appendix D) Additionally, there is no suitable habitat for short eared owl, since there is no large undisturbed area of upland habitat suitable for roosting on the Project Location or within the 50 m setback.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Bat Hibernacula	Hibernacula may be found in abandoned mines, underground foundations, karsts, or one of the following ELC communities: Crevice (CCR) or Cave (CCA). SWH does not include buildings. The locations of bat hibernacula are relatively poorly known. Species of Conservation Concern: Eastern Tri-coloured Bat	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	The Project Location does not contain habitat (such as abandoned mines, underground foundations, karsts, crevices or caves) that would support bat hibernacula.	N/A	N/A
Bat Maternity Colonies	Maternity colonies can be found in tree cavities, vegetation and often in buildings; however, buildings are not considered significant wildlife habitat. Maternity roosts are not found in caves and mines in Ontario. This habitat is associated with any of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM), that have ≥10/ha wildlife trees ≥25 cm diameter at breast height (dbh). Female bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. Species of Conservation Concern: Eastern Tri-coloured Bat	Deciduous Forest (FOD) is found within the Project Location and 50 m setback, Coniferous Forest (FOC), Deciduous Swamp (SWD), Coniferous Swamp (SWC) and Mixed Swamp (SWM) are all found within the 50 m setback	N/A	---	✓	---	---	---	✓	Deciduous Forest (FOD) is found within the Project Location and 50 m setback, Coniferous Forest (FOC), Deciduous Swamp (SWD), Coniferous Swamp (SWC) and Mixed Swamp (SWM) are all found within the 50 m setback. Snag densities were done in all of these woodlands and there is the potential for Bat Maternity Colonies within the 50 m setback of the Project Location (associated with Woodlands A and D). Snag densities that were conducted for the FODM5-7 community portion of Woodland A that encroaches on the Project Location was found not to meet the criteria that would make this Candidate Significant Wildlife Habitat. Based on guidance in the NHAG (MNR 2012), this habitat type is to be considered Generalized Candidate Significant Wildlife Habitat (see Figure 7P) since all of the wooded areas where snag densities met the threshold, were within 50 m of the Project Location.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Turtle Wintering Areas TWA1	For most turtles, wintering areas are in the same general areas as their core habitat. Over-wintering sites are permanent water bodies, large wetlands, and bogs and fens with adequate dissolved oxygen. Water has to be deep enough not to freeze and have soft mud substrates. These habitats are found in the following Community Types: Swamp (SW), Marsh (MA), Open Water (OA), Shallow Water (SA), Open Fen (FEO), Open Bog (BOO).	The Open Water community 33b (Figure 4) within the Project Location.	N/A	✓	✓	---	✓	---	---	Swamp (SW), Marsh (MA) and Open Water (OA) areas exist within the Project Location. Ecosites of these types that have a depth of 1 m or greater will be moved forward into the Evaluation of Significance as Candidate Significant Wildlife Habitat. See Figure 7A.	N/A	0m
Turtle Wintering Areas TWA2		The Open Water community 33f (Figure 4) within the Project Location.	N/A	✓	✓	---	✓	---	---	Swamp (SW), Marsh (MA) and Open Water (OA) areas exist within the Project Location. Ecosites of these types that have a depth of 1 m or greater will be moved forward into the Evaluation of Significance as Candidate Significant Wildlife Habitat. See Figure 7A.	<ul style="list-style-type: none"> - Perimeter fence - Access roads - Solar panels 	0m
Turtle Wintering Areas Generalized		Swamp (SW), Marsh (MA) and Open Water (OA) areas exist within the surrounding 50 m of the Project Location.	N/A	---	✓	---	---	---	✓	Swamp (SW), Marsh (MA) and Open Water (OA) areas exist within the 50 m setback to the Project Location. Ecosites of these types that have a depth of 1m or greater will be moved forward into the Evaluation of Significance as Generalized Candidate Significant Wildlife Habitat. See Figure 7P.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Snake Hibernaculum	Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock, wetlands such as conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Wetlands can also be important overwintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Hibernacula can be found in any ecosite in central Ontario other than very wet ones. The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBTA1). Species of Conservation Concern: Eastern Milksnake Eastern Ribbonsnake	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	Rock crevices, animal burrows, or other areas that enable reptiles to hibernate below the frost line were not observed within the Project Location or 50 m setback area. No potential snake hibernacula were observed during field surveys.	N/A	N/A
Colonially Nesting Bird Breeding Habitat (Bank and Cliff)	Any site or area with eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found in any of the following Community Types: Meadow (ME), Thicket (TH), Savannah (SV), Bluff (BL), Cliff (CL). This does not include man-made structures (bridges or buildings), licensed/permitted mineral aggregate operation, or recently (within the last 2 years) disturbed soil areas, such as berms, embankments, and soil or aggregate stockpiles.	Meadow community 29b (Figure 4) exists within the Project Location.	N/A	---	---	✓	---	---	---	There is one area in the MEMM3 community where there is a steep slope, however no nesting holes or any other evidence of bird nesting was observed during field surveys in 2014. Therefore, no suitable habitat is present.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Colonially Nesting Bird Breeding Habitat (Tree/Shrubs)	Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and occasionally emergent vegetation may also be used. Most nests in trees are 11 to 15 m from ground, near the top of tree. This habitat can be found in any of the following community types: Mixed swamp (SWM); deciduous swamp (SWD), coniferous swamp (SWC). Species of Conservation Concern: Black-crowned Night Heron Great Egret	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	13 areas of swamp (SWD, SWC and SWM) habitat were identified within the surrounding 50 m setback of the Project Location, however no Great Blue Herons or evidence of heronries (nesting bowls) were observed within any of the candidate habitat areas during field surveys in 2014. Therefore, no suitable habitat is present.	N/A	N/A
Colonially Nesting Bird Breeding Habitat (Ground) CNG1	Nesting colonies of gulls and terns on islands or peninsulas associated with open water or in marshy areas. Brewer's Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. Any rocky island or peninsula within a lake or large river, in close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Meadow (ME), Thicket (TH), Savannah (SV).	This potential habitat runs along a stream and is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh (18a of Figure 4) and is found within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	There were no islands or peninsulas associated with open water or in marshy areas. Brewer's Blackbird was not identified as potentially occurring in the general area of the Project Location. But there were two areas of MAM ecosites where there was suitable habitat along streams or irrigations ditches were observed within the 50 m setback of the Project location that will be brought forward as candidate Significant Wildlife Habitat for Brewer's Blackbird.	- Perimeter fence - Solar panels	30 m
Colonially Nesting Bird Breeding Habitat (Ground) CNG2	Species of Conservation Concern: Great Black-backed Gull Little Gull Caspian Tern Forster's Tern	This potential habitat runs alongside a stream and is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh (19a of Figure 4) and is found within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	See Figure 7B .	N/A	30 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Deer Winter Congregation Areas	Deer winter congregation areas are areas deer move to in response to the onset of winter snow and cold. Woodlots will typically be ≥100 ha in size and comprised of FOC, FOM, FOD, SWC, SWM, and SWD. Although deer management is an MNRF responsibility, all woodlots exceeding the area criteria are significant unless determined not to be significant by the MNRF.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	<p>Planning authorities are advised to rely on MNRF advice for locations and significance of Deer Winter Congregation Areas. MNRF is responsible for the management of Deer habitat in Ontario. No Deer Winter Congregation Areas previously evaluated as significant were identified by MNRF in the Project Location or in the 50m setback area.</p> <p>Although Woodland A and C are both >100 ha, the presence of MNRF delineated Deer Yarding Areas within the vicinity of the Project Location (>120 m) would suggest that snow depth within the Project Location is great enough to restrict deer to yards, and therefore, would not support winter congregation areas.</p>	N/A	N/A
Rare Vegetation Communities												
Cliffs and Talus Slopes	A cliff is vertical to near vertical bedrock that is greater than 3 m in height. A talus slope is rock rubble at the base of a cliff made up of coarse rocky debris. Talus Slopes are associated with the following ELC communities: TAO (Open Talus), TAS (Shrub Talus), TAT (Treed Talus).	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies did not identify talus slopes within the Project Location or 50 m setback.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Sand Barren	Sand barrens typically are exposed sand, generally sparsely vegetated, and caused by lack of moisture, periodic fires and erosion. This habitat is associated with any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite). The site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). Tree cover is always ≤ 60%.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies did not identify sand barrens within the Project Location or 50 m setback.	N/A	N/A
Alvar	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. This habitat is associated with any of the following ELC communities: ALO1(Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry Pine Calcareous Shallow Coniferous Forest Ecosite), FOC2 (Dry Cedar Calcareous Shallow Coniferous Forest Ecosite), CUM2 (Bedrock Cultural Meadow Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite), CUT2-1 (Common Juniper Cultural Alvar Thicket Type), CUW2 (Bedrock Cultural Woodland Ecosite) that are >0.5 ha in size.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies did not identify alvars within the Project Location or 50 m setback.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Old Growth Forest	Old Growth Forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. Stands ≥ 30 ha with at least 10 ha interior assuming 100 m buffer at edge of forest, and are associated with the following Community Types: FOD (Deciduous Forest), FOM (Mixed Forest), FOC (Coniferous Forest). The stand will have experienced no recognizable forestry activities. Forests with a wide range of tree sizes, uneven canopy and canopy gaps, abundant fallen logs in varying states of decomposition, trees in older age classes (often 50-140 years+).	Potential habitat exists within the Project Location and within the 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies identified mature forest stands on the Project Location and within the 50 m setback but there were no forests that met the criteria of the old growth forest.	N/A	N/A
Savannah	A Savannah is a tallgrass prairie habitat that has tree cover between 25-60%, and are associated with the following ELC communities: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite). These communities must be restored or natural and must not be dominated by exotic or introduced species (<50% vegetative cover exotics).	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies did not identify savannahs within the Project Location or 50 m setback.	N/A	N/A
Tallgrass Prairie	A tallgrass prairie has ground cover dominated by prairie grasses. An open tallgrass prairie habitat has less than 25% tree cover. This habitat is associated with the following communities: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite). These communities must be restored or natural.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies did not identify tallgrass prairies within the Project Location or 50 m setback.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Other Rare Vegetation Communities	May include beaches, fens, forests, marshes, barrens, dunes and swamps. Provincially rare S1, S2 and S3 vegetation communities are listed in Appendix M of the Significant Wildlife Habitat Technical Guide (MNR 2000). Woodlands with >60% forest cover, containing regionally/locally or provincially rare tree species or tree associations.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	ELC studies did not identify any rare vegetation communities, as defined in the Significant Wildlife Habitat Technical Guide, within the Project Location or 50 m setback. Further, woodlands containing rare tree species or tree associations were not observed.	N/A	N/A
Specialised Habitat for Wildlife												
Waterfowl Nesting Area	Upland habitats of any kind located adjacent to a wetland. The upland areas should be at least 120 m wide so predators have difficulty finding nests. The extent of the habitat extends 120 m from a wetland >0.5 ha or any small wetland within 120 m of a cluster of 3 or more smaller wetlands (<0.5 ha) within 120 m of each other where waterfowl nesting occurs. Wood ducks and hooded mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites. Species of Conservation Concern: Canvasback Redhead	Deciduous Swamp (SWD) and Meadow Marsh (MAM) ecosites are found within the surrounding 50 m of the Project Location.	N/A	---	---	✓	---	---	---	There are no upland communities at least 120 m wide adjacent to any wetland types in the Project Location and within the 50 m setback area. Therefore candidate Significant Wildlife Habitat is not present for waterfowl nesting areas.	N/A	N/A
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands or on structures over water. Osprey nests are usually at the top of a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. Nests located on man-made structures are not included as significant wildlife habitat. Forest (FO), or Swamp (SW) that are immediately adjacent to rivers, lakes, ponds, and wetlands should be considered. Species of Conservation Concern: Bald Eagle	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	There are no Forest (FO), or Swamp (SW) ecosites that are immediately adjacent to rivers, lakes, ponds, and suitable wetlands on or within 50 m of the Project Location.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Woodland Raptor Nesting Habitat WRNH1	Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Cooper’s Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In disturbed sites, nests may be used again or a new nest will be in close proximity to the old nest. Can be found in the following ELC communities: Forest (FO), Treed Swamp (SW), Coniferous Plantation (CUP3/TAGM1) that are >30 ha with >10 ha of interior habitat (interior habitat having a 200 m buffer of surrounding woodland and/or forest). Species of Conservation Concern: Red-shouldered Hawk	Forest (FOD) and Treed Swamp (SWM) communities are both found within Project Location and 50 m setback area.	N/A	✓	✓	---	✓	---	---	Woodland A, located within the Project Location and within the 50 m setback contains 12.30 ha of continuous interior habitat and therefore this woodland will be considered candidate habitat for Woodland Raptor nesting. No other woodlands within 50 m of the Project Location contain ≥ 10 ha of interior habitat. See Appendix D . See Figure 7C .	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV Substation 	0 m
Turtle Nesting Areas TNA1	For an area to function as a turtle nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not significant wildlife habitat. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes and rivers are most frequently used. Exposed mineral soil (sand or gravel) areas <100 m from or within the following Community Types: Mineral or Organic Meadow Marsh (MAM or MAO), Shallow Marsh (MAS), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO). Species of Conservation Concern: Northern Map Turtle Snapping Turtle	Meadow Marsh (MAM) (39a of Figure 4) with exposed mineral soil area is found within the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---	Exposed sand and gravel substrates in open, sunny areas were identified <100m from the MAMM1-3 and the SWDM4-5 communities (Wetland #21) in the SW portion of the Project Location See Figure 7D .	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	30 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)	
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*				
Seeps and Springs	Seeps and springs are areas where ground water comes to the surface, often in forested headwater areas. Any forested area (with <25% meadow, field, or pasture) within the headwaters of a stream or river system may have seeps or springs. Presence of a site with 2 or more seeps/springs should be considered SWH.	Seepage areas were found during field work on site and within the 50 m setback area of the Project Location.	N/A	---	✓	---	---	---	---	✓	2 seeps were identified within the 50 m setback area during site investigations. This has been mapped on Figure 7R with other generalized candidate Significant wildlife habitat	N/A	N/A
Amphibian Breeding Habitat (Wetland) ABHWE1	Wetlands and pools isolated from woodlands with presence of shrubs, logs available for calling, foraging, and escape/concealment from predators. Bullfrogs require permanent water bodies with an abundance of emergent vegetation. Associated with any of the following ELC communities: Swamp (SW), Marsh (MA), Fen (FE), Bog (BO), Open Water (OA), Shallow Aquatic (SA), including vernal pools, that are >500 m ² or 25 m in diameter, and located >120 m from woodlands. Species of Conservation Concern: Western Chorus Frog	This potential habitat is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh and OAO Open Aquatic (18a and 33d of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	---	Swamp habitat (SW), meadow marsh habitat (MA), and open water (OAO) features located on the Project Location and within the 50 m setback area may support breeding amphibians. See Figure 7E .	- Perimeter fence - Solar panels - Access roads	7 m
Amphibian Breeding Habitat (Wetland) ABHWE2		This potential habitat is made up of MAMM3-1 Mixed Mineral Meadow Marsh (21b of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station	8 m
Amphibian Breeding Habitat (Wetland) ABHWE3		This potential habitat is made up of SWDM4-5 Poplar Mineral Deciduous Swamp/SWTM2-1 Red-osier Dogwood Deciduous Thicket Swamp Complex (40a of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	---		- Perimeter fence - Solar panels - Access roads	30 m
Amphibian Breeding Habitat (Wetland) ABHWE5		This potential habitat is made up of MAMM3-1 Mixed Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	N/A	✓	✓	---	✓	---	---	---		- Perimeter fence - Solar panels - Access roads	5 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Amphibian Breeding Habitat (Wetland) ABHWE6		This potential habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp (21c of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Access roads	18 m
Amphibian Breeding Habitat (Wetland) ABHWE7		This potential habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp (47b of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Access roads	0 m
Amphibian Breeding Habitat (Wetland) ABHWE8		This potential habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp (42d of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Access roads	0 m
Amphibian Breeding Habitat (Wetland) ABHWE9		This potential habitat is made up of OAO Open Aquatic Area (33b of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	✓	✓	---	✓	---	---		N/A	0 m
Amphibian Breeding Habitat (Wetland) ABHWE10		This potential habitat is made up of OAO Open Aquatic Area (33f of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	✓	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Amphibian Breeding Habitat (Wetland) ABHWE11		This potential habitat is made up of OAO Open Aquatic Area (33c of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels	9 m
Amphibian Breeding Habitat (Wetland) ABHWE12		This potential habitat is made up of MAMM1-3 Reed Canary Grass Graminoid mineral Meadow Marsh and SWMO1-1 White Cedar Hardwood Organic mixed Swamp (35a, 45b, and 19a of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Access roads	4 m
Amphibian Breeding Habitat (Wetland) ABHWE13		This potential habitat is made up of OAO Open Aquatic Area (33a of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	0 m
Amphibian Breeding Habitat (Wetland) ABHWE14		This potential habitat is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh (19c of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels	30 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Amphibian Breeding Habitat (Woodland) ABHWO1	The presence of a wetland, lake or pond within or adjacent to (within 120 m) a woodland that contains permanent ponds or contains water in most years until mid-July are most likely to be used as breeding habitat. Species of Conservation Concern: Western Chorus Frog	This potential habitat is made up of MAMM3-1 Mixed mineral Meadow Marsh and SWDM2-1 Black Ash Mineral Deciduous Swamp/MAMM3-1 Mixed Mineral Meadow Marsh complex wetlands that are contained in a FODM5-7 Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest/FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback. (Woodland A)	N/A	✓	✓	---	✓	---	---	Wetlands and ponds were found within or adjacent to the portion of the forests and woodlands that are on the Project Location or within the 50 m setback. See Figure 7F .	- Perimeter fence - Solar panels - Access roads	0 m
Amphibian Breeding Habitat (Woodland) ABHWO2		This potential habitat is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh, MASM1-14 Reed Canary Grass Mineral Shallow Marsh and SWMM5-1 Balsam Fir Hardwood Mixed Mineral Swamp wetlands that are contained in a woodland consisting of FODM5-1 Dry Fresh Sugar Maple-Black Cherry Deciduous Forest, FODM5-9 Dry-Fresh Sugar Maple Hardwood Deciduous Forest and WODM4 Dry-Fresh Deciduous Woodland. This habitat exists within the 50 m setback of the Project Location. (Woodland C)	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Amphibian Breeding Habitat (Woodland) ABHWO3		This potential habitat is made up of SWDM2-2 Green Ash Mineral Deciduous Swamp, SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp wetlands that are contained in a FOCM4-1 Fresh-Moist White Cedar Coniferous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback. (Woodland A)	N/A	---	✓	---	✓	---	---		<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV Substation - Overhead collector line 	10 m
Amphibian Breeding Habitat (Woodland) ABHWO4		This potential habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp wetland that is contained in an FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists within the 50 m setback. (Woodland D)	N/A	---	✓	---	✓	---	---		<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead collector line 	≥0 m
Amphibian Breeding Habitat (Woodland) ABHWO5		This potential habitat is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh and SWDM4-5 Poplar Mineral Deciduous Swamp (39a and 19b of Figure 4) and is found within the surrounding 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	30 m
Habitat of Species of Conservation Concern												

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Marsh Breeding Bird Habitat MBBH1 (for Green Herons only)	This habitat includes all wetlands as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently it may be found in upland shrubs or forest a considerable distance from water. The following ELC communities should be considered: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: SW (Swamp), MA (Marsh) and Meadow (ME). Species of Conservation Concern: Black Tern Wilson's Phalarope Red-necked Grebe	The MEMM3 Dry-Fresh Mixed Meadow ecosite (28b of Figure 4) that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	N/A	✓	---	---	✓	---	---	Swamp (SW) and Meadow Marsh (MA), ecosites are found within the surrounding 50 m of the Project Location. Meadow (ME) ecosites are found both on the Project Location and within the surrounding 50 m and could provide habitat for marsh breeding birds. See Figure 7G and Figure 7P .	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Marsh Breeding Bird Habitat MBBH2 (for Green Herons only)		The MEMM3 Dry-Fresh Mixed Meadow ecosite (28a of Figure 4) that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	N/A	✓	---	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Marsh Breeding Bird Habitat MBBH3 (for Green Herons only)		The MEMM3 Dry-Fresh Mixed Meadow ecosite (28c of Figure 4) that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	N/A	✓	---	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Marsh Breeding Bird Habitat MBBH4 (for Green Herons only)		The MEMM4 Fresh-Moist Mixed Meadow ecosite (29a of Figure 4) that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	N/A	✓	---	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	0 m
Marsh Breeding Bird Habitat MBBH5 (for Green Herons only)		The MEMM4 Fresh-Moist Mixed Meadow ecosite (29b of Figure 4) that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	N/A	✓	---	---	✓	---	---		- Perimeter fence	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Marsh Breeding Bird Habitat MBBH6 (for Green Herons only)		The MEMM4 Fresh-Moist Mixed Meadow ecosite (29c of Figure 4) that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	N/A	✓	---	---	✓	---	---		- Perimeter fence - Access Roads - Solar Panels	0 m
Marsh Bird Breeding Habitat Generalized		Swamp (SW) Meadow Marsh (MA) and Meadow (ME), ecosites are found within the surrounding 50 m of the Project Location and will be considered Generalized candidate Significant Wildlife Habitat.	N/A	---	✓	---	---	---	✓		N/A	N/A
Woodland Area-sensitive Bird Breeding Habitat ASBB1	Habitats where interior forest breeding birds are breeding in forest stands or woodlots >30 ha (forest interior is defined as at least 200 m from the forest edge). These include any of the following Community Types: Forest (FO), Treed Swamp (SW) that are mature (>60 years old). Species of Conservation Concern: Canada Warbler Hooded Warbler Olive-sided Flycatcher	This potential habitat is made up of FODM5-7 Dry-Fresh Sugar maple-Black cherry Deciduous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists both in the Project Location and within the 50 m setback. (Woodland A)	N/A	✓	✓	---	✓	---	---	Woodland A is >30 ha and includes interior woodland habitat greater than 200 m from the forest edge habitat. As it is within the Project Location, it will be carried forward as Candidate Significant Wildlife Habitat (ASBB1). See Figure 7H .	- Perimeter fence - Solar panels - Access roads	0 m
Woodland Area-sensitive Bird Breeding Habitat Generalized		Potential habitat exists within the 50 m setback of the Project Location that will be considered Generalized Candidate Significant Wildlife Habitat.		---	✓	---	---	---	✓	Woodland C is >30 ha and includes interior habitat greater than 200 m from the forest edge. As it is not within the Project Location it will be carried forward as Generalized Candidate Significant Wildlife Habitat. See Figure 7P .	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Open Country Bird Breeding Habitat	Large grassland areas (including natural and cultural fields and meadows) are important to support grassland breeding bird species. Grassland areas > 30 ha, and do not include Class 1 or Class 2 agricultural lands. Habitat does not include fields with row-cropping or intensive hay or livestock pasturing in the last 5 years. This habitat can be found in Meadows (ME). Species of Conservation Concern: Short-eared Owl	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	Large grasslands >30 ha that are not currently being used for row crop, active hay fields, or livestock pasturing were not observed within the Project Location or 50 m setback.	N/A	N/A
Shrub/Early Successional Bird Breeding Habitat	Oldfield areas succeeding to shrub and thicket habitats >10 ha, that are not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years. This habitat can be found in Thickets (TH) and Savannas (SV). Species of Conservation Concern: Golden-winged Warbler	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	Thicket communities >10 ha that are not currently being used for row crop, hay fields, or livestock pasturing were not observed within the Project Location or 50 m setback.	N/A	N/A
Special Concern and Rare Wildlife Species												
American Gromwell AG1	Habitat of this species includes rich deciduous woodlands, wooded slopes, and shaded riverbanks. This conservative species prefers high quality woodlands where the original ground flora is largely intact. Blooming occurs throughout the month of June with fruiting through late August.	This potential habitat is made up of FODM5-7 Dry-Fresh sugar maple-Black Cherry Deciduous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists on the Project Location and within the 50 m setback. (Woodland A)	N/A	✓	✓	---	✓	---	---	Upland hardwood forests on and within 50 m of the Project Location have been considered Candidate Significant Habitat for American Gromwell. Other woodlands and forested areas within the Project Location and 50 m setback have been ruled on based on composition (ie. past disturbance (Woodland B) and small, sparse trees, which would not provide the richness or	- Perimeter fence - Solar panels - Access roads	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
American Gromwell AG2		This potential habitat is made up of FODM6 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location. (Woodland A)	N/A	---	✓	---	✓	---	---	adequate shade required for this species) See Figure 71 .	- Overhead distribution line	0 m
American Gromwell AG3		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location. (Woodland A)	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station - Main HV Substation	10 m
American Gromwell AG4		This potential habitat is made up of FODM5-1 Dry-Fresh Sugar Maple Deciduous Forest and FODM5-9 Dry-Fresh Sugar Maple Hardwood Deciduous Forest and exists within 50 m of the Project Location. (Woodland C)	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	8 m
American Gromwell AG5		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists within 50 m of the Project Location. (Woodland K)		---	✓	---	✓	---	---		- Overhead distribution line	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
American Gromwell AG6		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location. (Woodland D)		---	✓	---	✓	---	---		<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead distribution line 	0 m
Braun's Holly Fern	Braun's Holly Fern can be found in moist mixed forests. This species is an evergreen and can be seen all year round.	Habitat for this species does not exist within 50m of the Project Location.	N/A	---	---	✓	---	---	---	Habitat for this species does not exist within 50 m of the Project Location.	N/A	N/A
Green Dragon	The Green Dragon grows in somewhat wet to wet deciduous forests along streams, particularly maple forest and forest dominated by Red Ash and White Elm trees. This species blooms in May and June.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	There are no streams on the Project Location or within the 50 m setback that are in somewhat wet to wet deciduous forests.	N/A	N/A
Harbinger-of-Spring	Habitat of this species includes rich, mesic, woodlands with deciduous trees, bluffs, and wooded slopes along rivers.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	This type of habitat was not observed within the Project Location or the 50 m setback.	N/A	N/A
Hart's Tongue Fern	Hart's-tongue Fern grows on calcareous rocks in deep shade on slopes in deciduous forest. Most Ontario occurrences are in maple-beech forest. Established plants can grow in exposed, rocky crevices and on outcrops, but moist, mossy areas seem to be essential for spore germination and early plant development.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	This type of habitat was not observed within the Project Location or the 50 m setback.	N/A	N/A
Hill's Pondweed HP1	Hill's Pondweed is found in slow-moving streams, ditches, ponds, lakes and wetlands. It grows in clear, cold alkaline waters.	This potential habitat is made up of and OAO open aquatic area (33d of Figure 4) and exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	The open water that exists on the Project Location and within the 50 m setback is clear and is considered to be candidate significant habitat.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	7 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Hill's Pondweed HP3		This potential habitat is made up of and OAO open aquatic area (33a of Figure 4) and exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---	See Figure 7J .	- Perimeter fence - Solar panels - Access roads	0 m
Hill's Pondweed HP4		This potential habitat is made up of and OAO open aquatic area (33c of Figure 4) and exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels	9 m
Hill's Pondweed HP5		This potential habitat is made up of and OAO open aquatic area (33f of Figure 4) and exists on the Project Location.	N/A	✓	---	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Hill's Pondweed HP6		This potential habitat is made up of and OAO open aquatic area (33b of Figure 4) and exists on the Project Location.	N/A	✓	---	---	✓	---	---		- Access road	0 m
Rugulose Grapefern	This species is found on sandy shorelines of fluctuating lakes and ponds. Optimum identification period is June through August.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	Sandy shorelines of fluctuating lakes and ponds were not present on the Project Location or in the 50 m setback.	N/A	N/A
Scarlet Beebalm SB1	Scarlet Bee-balm is found in the moist woods of southern Ontario. Blooms June through September.	This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest (12e of Figure 4) and exists within 50m of the Project Location.	N/A	---	✓	---	✓	---	---	Habitat for this species exists in some of the woodland (WO) and the forest (FO) ecosites on and within 50 m of the Project Location. See Figure 7K .	- Perimeter fence - Solar panels - Access roads	10 m
Scarlet Beebalm SB2		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest (12f of Figure 4) and exists within 50m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	4 m
Scarlet Beebalm SB3		This habitat is made up of FODM6 Fresh-Moist Sugar Maple Deciduous Forest (13a of Figure 4) and exists within 50m of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Scarlet Beebalm SB4		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and FOCM4-1 Fresh-Moist White Cedar Coniferous Forest (12ea and 12b of Figure 4) and exists within 50m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Main HV Substation	10 m
Scarlet Beebalm SB5		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest (12d and 12g of Figure 4) and exists within 50m of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	0 m
Scarlet Beebalm SB6		This potential habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest (12c of Figure 4) and exists within 50m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Overhead distribution line	0 m
Scarlet Beebalm SB8		This potential habitat is made of WODM5-3 Fresh-Moist Manitoba Maple Deciduous Woodland (4a of Figure 4) and exists on the Project Location and within the 50 m setback.	N/A	✓	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	0 m
Shiny Wedge Grass	Shiny Wedge Grass inhabits dry, rocky, fertile soils on upper slopes and ridge crests in deciduous forests characterized by Hickory, Hop Hornbeam, White Ash, and Oak. Blooms May through June.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	This type of habitat was not observed within the Project Location or the 50 m setback area.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Soft-hairy False Gromwell SHFG1	This species prefers well drained soils in open woodlands or along roadsides. Blooming season is June- July.	This potential habitat is made of WODM4 Dry-Fresh Deciduous Woodland (57a of Figure 4) and exists on the Project Location and within the 50 m setback.	N/A	✓	✓	---	✓	---	---	The thicket (TH) communities and the WODM4 community could provide habitat for this species. See Figure 7L .	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Soft-hairy False Gromwell SHFG2		This potential habitat is made of WODM4 Dry-Fresh Deciduous Woodland (54a of Figure 4) and exists within the 50 m setback of the Project Location.	N/A	✓	✓	---	✓	---	---		- Perimeter fence - Solar panels	0 m
Soft-hairy False Gromwell SHFG3		This potential habitat is made up of THDM2 Dry-Fresh Deciduous Shrub Thicket (57b and 57c of Figure 4) and exists within the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Soft-hairy False Gromwell SHFG4		This potential habitat is made up of THMM2 Fresh Moist Mixed Thicket and THDM2-11 Hawthorn Deciduous Shrub Thicket (55b of Figure 4) and exists within the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	0 m
Soft-hairy False Gromwell SHFG5		This potential habitat is made up of THMM2 Fresh Moist Mixed Thicket (55a of Figure 4) and exists within the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Soft-hairy False Gromwell SHFG6		This potential habitat is made up of THDM2-11 Hawthorn Deciduous Shrub Thicket (53a of Figure 4) and exists within the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Access road	10 m
Tuberous Indian Plantain	This species prefers open sunny areas in wet, calcium-rich meadows or shoreline fens. In Ontario, it grows along river banks and in wetlands near Lake Huron. Plants flower in June.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	There are no calcium-rich meadows or shoreline fens on or within 50 m of the site. Additionally, this Project Location is not near lake Huron.	N/A	N/A
Common Nighthawk CN1	Traditional Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, mine tailings and along gravel roads and railways, they tend to occupy natural sites.	Potential habitat for Common Nighthawk exists in the WODM4 Dry-Fresh Deciduous Woodland community (57a of Figure 4) that is on and within 50 m of the Project Location.	N/A	✓	✓	---	✓	---	---	There are several areas on the Project Location and within 50 m the setback that will be considered candidate Significant Wildlife Habitat for Common Nighthawk. See Figure 7M.	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Common Nighthawk CN2		Potential habitat for Common Nighthawk exists in the WODM4 Dry-Fresh Deciduous Woodland community (57 and 57c of Figure 4) that exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Overhead distribution line	0 m
Common Nighthawk CN3		Potential habitat for Common Nighthawk exists in the THMM2 Fresh Moist Mixed Thicket community (55b of Figure 4) that exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	0 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Common Nighthawk CN4		Potential habitat for Common Nighthawk exists in the THMM2 Fresh Moist Mixed Thicket community (55a of Figure 4) that exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m
Common Nighthawk CN5		Potential habitat for the Common Nighthawk exists in the WODM4 Dry-Fresh Deciduous Woodland (56a of Figure 4) that exists within 50 m of the Project Location.	N/A	---	✓	---	✓	---	---		<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	2 m
Redheaded Woodpecker RHW1	The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching.	Potential habitat exists within FODM6-5 Fresh Moist Sugar Maple Hardwood Deciduous Forest (12a and 12b of Figure 4) that is within the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---	A portion of Woodland A could provide habitat for this species. See Figure 7N .	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV Substation 	10 m
Monarch	In Canada, Monarchs are most abundant in southern Ontario and Quebec where milkweed plants and breeding habitat are widespread. During late summer and fall, Monarchs from Ontario migrate to central Mexico where they spend the winter months. During migration, groups of Monarchs numbering in the thousands can be seen along the north shores of Lake Ontario and Lake Erie.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	This species would have been considered under Migratory Butterfly Stopover Areas, however, the Project is not located within 5 km of Lake Ontario. Further no areas within the Project Location or 50 m setback contained an abundance of milkweed conducive to Monarch habitat.	N/A	N/A
Clamp-tipped Emerald	This species occupies small forest streams with intermittent riffles and pools. Flight period is early July through mid-August.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	All forest streams are outside the 50 m setback.	N/A	N/A

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Forcipate Emerald	The forcipate emerald inhabits pools in bogs and small spring-fed forested streams from early June through August.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	There were no bogs or forested streams on the Project Location or within the 50 m setback.	N/A	N/A
Harlequin Darner HD1	This species can be found in bogs, and swamps May through July.	This potential habitat is made up of SWDM2-1 Black Ash Mineral Deciduous Swamp/MAMM3-1 mixed mineral Meadow Marsh Complex (37a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---	There were no bogs on site or within the 50 m setback of the Project Location but there are swamp (SW) ecosites that exist within the 50 m setback. See Figure 70 .	- Perimeter fence - Solar panels	30 m
Harlequin Darner HD2		This potential habitat is made up of SWDM4-5 Poplar Mineral Deciduous Swamp/SWTM2-1 Red-osier Dogwood deciduous Thicket Swamp Complex (40a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	30 m
Harlequin Darner HD3		This potential habitat is made up of SWMM5-1 Balsam Fir Hardwood Mixed Mineral Swamp (44a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels	20 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Harlequin Darner HD4		This potential habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp (47c of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	18 m
Harlequin Darner HD5		This potential habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp (47b of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	0 m
Harlequin Darner HD6		This potential habitat is made up of SWDM2-2 Green Ash mineral Deciduous Swamp (38a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Overhead distribution line	49 m
Harlequin Darner HD7		This potential habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp (45a, 42b and 42a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads - Main HV Substation	30 m
Harlequin Darner HD8		This potential habitat is made up of SWCO2-2 Tamarack Organic Coniferous Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp (35a and 45b of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		N/A	4 m

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Harlequin Darner HD9		This potential habitat is made up of SWDM4-5 White Cedar Hardwood Organic Mixed Swamp (39a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	30 m
Harlequin Darner HD10		This potential habitat is made up of SWMM1-1 White Cedar Hardwood Mixed Mineral Swamp (42c and 42d of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Overhead distribution line	0 m
Harlequin Darner HD11		This potential habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp (47a of Figure 4) and exists in the 50 m setback of the Project Location.	N/A	---	✓	---	✓	---	---		- Perimeter fence - Solar panels - Access roads	22 m
Greater Redhorse	The Greater Redhorse prefers the cool bottom waters of large streams with substantial flows.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	---	---	✓	---	---	---	There were no large streams on the Project Location or within the 50 m setback.	N/A	N/A
Animal Movement Corridors												

Wildlife Habitat	Definition of Habitat ^{1,2,3,4,5,6}	Habitat Composition: Attributes, Condition and Function	Photo Record (Appendix C)	Location		Status				Rationale for Status	Project Components within 50 m	Distance to Project Location (m)
				Within Project Location	Within 50 m of Project Location	Not Applicable	Candidate	Previously Evaluated Significant	Generalized Candidate Significant Wildlife Habitat*			
Amphibians	Corridors are determined based on the identification of significant breeding habitat for amphibians. Movement corridors between breeding habitat and summer habitat must be determined when amphibian breeding habitat is confirmed as significant wildlife habitat. Corridors may be found in all ecosites associated with water. Corridors should be at least 200 m wide with gaps <20 m, and, if following riparian area, with at least 15 m of vegetation on both sides of waterway.	<p>Potential habitat exists both within the Project Location and 50 m setback between where a unit of candidate wetland amphibian breeding habitat occurs in isolation from a woodland. The candidate amphibian corridor would be the space between the woodland and the wetland amphibian breeding habitat.</p> <p>Please note, amphibian corridors are only considered once wetland Amphibian Breeding Habitat has been evaluated as significant. Until this type of wildlife habitat is evaluated, amphibian corridors are carried forward in this NHA as candidate.</p>	N/A	N/A	---	---	✓	---	---	There are areas within the Project Location and 50 m setback area between candidate wetland amphibian breeding habitats and woodland habitat that may be suitable amphibian movement corridors. These candidate habitats cannot be mapped until further studies confirm the significance of the candidate wetland Amphibian Breeding Habitats. Based on this, candidate amphibian corridors will be brought forward as candidate Significant Wildlife Habitat.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Interter stations - Overhead distribution line - Main HV Substation 	0 m
Deer	Movement corridors must be determined when deer wintering habitat is confirmed as significant wildlife habitat. Corridors may be found in all forested ecosites. Corridors typically follow riparian areas, woodlots, and areas of physical geography (ravines or ridges). Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas, and should be at least 200 m wide with games <20m, and, if following riparian area, with at least 15 m of vegetation on both sides of waterway.	Potential habitat does not exist within the Project Location or 50 m setback.	N/A	N/A	---	✓	---	---	---	MNR did not identify significant deer wintering areas in or within 50 m of the Project Location or 50 m setback, thus deer movement corridors are not located within the Project Location or 50 m setback. Deer winter congregation area was carried forward for evaluation, however corridor characteristics connecting this wildlife habitat to other deer habitat area absent (ex. riparian areas, ravines, ridges, corridor routes unbroken by roads and residential areas, etc.)	N/A	N/A

Of the wildlife habitat reviewed during the site investigation work, the following habitats have been determined to be *candidate significant wildlife habitat*:

Seasonal Concentration Areas:

- Colonially Nesting Bird Breeding Habitat (Ground) (CNG1 , CNG2)
- Turtle Wintering Areas (TWA1, TWA2)

Specialised Habitats for Wildlife:

- Amphibian Breeding Habitat (Wetland) (ABHWE1 - ABHWE3, ABHWE5 - ABHWE14)
- Amphibian Breeding Habitat (Woodland) (ABHWO1 – ABHWO5)
- Turtle Nesting Areas (TNA1)
- Woodland Raptor Nesting Habitat (WRNH1)

Species of Conservation Concern:

- Woodland Area-Sensitive Bird Breeding Habitat (WSBB1)
- Marsh Breeding Bird Habitat (MBBH1-MBBH6)
- American Gromwell (AG1 - AG6)
- Hill’s Pondweed (HP1, HP3 - HP6)
- Scarlet Beebalm (SB1 – SB6, SB8)
- Soft-hairy False Gromwell (SHFG1 – SHFG6)
- Common Nighthawk (CN1 - CN5)
- Red-Headed Woodpecker (RHW1)
- Harlequin Darner (HD1 - HD11)

Animal Movement Corridors:

- Amphibian Movement Corridors

Other wildlife habitat that are located entirely outside of the Project Location but occur at least partially within the 50 m setback area and are not likely to be affected by Project components typically found within a solar facility will be categorized as “Generalized Candidate Significant Wildlife Habitat”, as outlined in **Appendix D** of the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR 2012), and will be treated as significant in the subsequent *NHA EIS*.

The following habitats, based on **Table 1** in Appendix D of the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR 2012), have been categorized together as *Generalized Candidate Significant Wildlife Habitat*:

- Bat Maternity Colony
- Turtle Wintering Areas
- Hill's Pondweed
- Scarlett Beebalm
- Amphibian Breeding Habitat (Wetland)
- Marsh Bird Breeding Habitat
- Shorebird Migratory Stopover and Staging Area
- Woodland Area Sensitive Bird Breeding Habitat
- Waterfowl Stopover and Staging Areas (Aquatic)
- Seeps and Springs

8. SUMMARY OF AMENDMENTS TO THE RECORDS REVIEW

Based on the results of the site investigations, the boundaries and extent of all natural features were confirmed and/ or refined. From a comparison of the features identified during the records review and the observations made during the site investigation, there are amendments required with respect to the natural features determined to exist within the Project Location and 50 m setback. These amendments apply to the size and location of woodland and wetland features and the addition of candidate and generalized candidate significant wildlife habitat. These amendments have been made to the mapping prepared during the records review (**Figure 3**).

Table 10 identifies any necessary corrections to the determinations made during the *NHA Records Review Report*, including the addition of natural features, the absence of natural features identified during the records review and the amendments to boundaries of relevant natural features located within 50 m of the Project Location.

Table 10: Amendments to the Natural Heritage Assessment Records Review

Natural Feature ID	Identified During Records Review?	Amendment to Records Review Required?	Source of Information for Amendment	Change in Distance Relative to Project Location?	Summary of Amendments
Wetlands					
Unevaluated Southern Wetland #1	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #2	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #3	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #4	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised
Unevaluated Southern Wetland #5	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #6	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised where wetland is within 50 m of the Project Location
Unevaluated Southern Wetland #7	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised
Unevaluated Southern Wetland #8	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #9	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised
Unevaluated Southern Wetland #10	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland confirmed to not exist within Project Location or surrounding 50 m.
Unevaluated Southern Wetland #11	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised
Unevaluated Southern Wetland #12	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #13	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised
Unevaluated Southern Wetland #14	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised
Unevaluated Southern Wetland #15	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland
Unevaluated Southern Wetland #16	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #17	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised.
Unevaluated Southern Wetland #18	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #19	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland confirmed to not exist within Project Location or surrounding 50 m.
Unevaluated Southern Wetland #20	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised.
Unevaluated Southern Wetland #21	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised.
Unevaluated Southern Wetland #22	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised.
Unevaluated Southern Wetland #23	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Boundaries of wetland revised.
Unevaluated Southern Wetland #24	Yes	Yes	NHA SI Wetland Delineation Field Survey	Yes	Wetland determined to not exist as mapped within Project Location or

Natural Feature ID	Identified During Records Review?	Amendment to Records Review Required?	Source of Information for Amendment	Change in Distance Relative to Project Location?	Summary of Amendments
					surrounding 50 m. Feature reclassified as woodland.
Unevaluated Southern Wetland #25	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #26	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #27	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #28	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #29	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #30	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #31	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Unevaluated Southern Wetland #32	No	Yes	NHA SI Wetland Delineation Field Survey	N/A	Addition of a previously unmapped unevaluated southern wetland.
Woodlands					
Woodland A	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland B	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland C	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland D	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland E	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland F	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland G	Yes	Yes	NHA SI Woodland Delineation	Yes	Woodland determined to not occur within Project Location or surrounding 50 m.
Woodland H	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland I	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland J	Yes	Yes	NHA SI Woodland Delineation	Yes	Woodland determined to not exist as mapped within Project Location or surrounding 50 m. Feature reclassified as a thicket.
Woodland K	Yes	Yes	NHA SI Woodland Delineation	No	Boundaries of woodland revised.
Woodland L	No	Yes	NHA SI Woodland Delineation	N/A	Addition of a previously unmapped woodland.
Woodland M	No	Yes	NHA SI Woodland Delineation	N/A	Addition of a previously unmapped woodland.
Wildlife Habitat					
Seasonal Concentration Areas					
Colonially Nesting Bird Breeding Habitat (Ground)	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Colonially Nesting Bird Habitat (Ground) within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Turtle Wintering Areas	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Turtle Wintering Areas within the Project location. This feature will be carried forward to the Evaluation of Significance.
Rare Vegetation Communities					
None identified within the Project Location or adjacent lands within 50					
Specialised Wildlife Habitat					

Natural Feature ID	Identified During Records Review?	Amendment to Records Review Required?	Source of Information for Amendment	Change in Distance Relative to Project Location?	Summary of Amendments
Turtle Nesting Area	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Turtle Nesting Area within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Amphibian Breeding Habitat (Wetland)	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Amphibian Breeding Habitat (Wetland) located on the Project Location and within the 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Amphibian Breeding Habitat (Woodland)	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Amphibian Breeding Habitat (Woodland) located on the Project Location and within the 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Woodland Raptor Nesting	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Woodland Raptor Nesting Habitat located on the Project Location and within the 50 m setback. This feature will be carried forward to the Evaluation of Significance.
<i>Habitat of Species of Conservation Concern</i>					
Marsh Bird Breeding Habitat	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Marsh Bird Breeding Habitat located within the Project Location. This feature will be carried forward to the Evaluation of Significance.
Woodland Area-Sensitive Bird Breeding Habitat	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Woodland Area-Sensitive Bird Breeding Habitat located within the Project Location and the 50 m setback. This feature will be carried forward to the Evaluation of Significance.
American Gromwell	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for American Gromwell located within the Project Location and 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Hill's Pondweed	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Hill's Pondweed located on the Project Location and within the 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Scarlet Beebalm	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Scarlett Beebalm within the Project Location and 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Soft- hairy False Gromwell	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Soft- hairy False Gromwell located within the Project Location and 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Common Nighthawk	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Common Nighthawk located within the Project Location and 50 m setback. This feature will be carried forward to the Evaluation of Significance.
Red-headed Woodpecker	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Red-headed Woodpecker located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Harlequin Darner	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Harlequin Darner located within the 50 m setback of the Project Location. This feature will be carried

Natural Feature ID	Identified During Records Review?	Amendment to Records Review Required?	Source of Information for Amendment	Change in Distance Relative to Project Location?	Summary of Amendments
					forward to the Evaluation of Significance.
<i>Animal Movement Corridors</i>					
Amphibian Movement Corridors	No	Yes	Site Investigation	Yes	Addition of Candidate Significant Wildlife Habitat for Amphibian Movement Corridors within the Project Location and 50 m setback area. This feature will be carried forward to the Evaluation of Significance.
<i>Generalized Candidate Significant Wildlife Habitat</i>					
Waterfowl Stopover and Staging Areas (Aquatic)	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Waterfowl Stopover and Staging Areas (Aquatic) located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Shorebird Migratory Stopover and Staging Areas	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Shorebird Migratory Stopover and Staging Areas located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Bat Maternity Colonies	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Bat Maternity Colonies located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Amphibian Breeding Habitat (Wetland)	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Amphibian Breeding Habitat (Wetland) located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Hill's Pondweed	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Hill's Pondweed located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Scarlet Beebalm	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Scarlet Beebalm located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Turtle Wintering Areas	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Turtle Wintering Areas located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Seeps and Springs	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Seeps and Springs located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Marsh Bird Breeding Habitat	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Marsh Bird Breeding Habitat located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.
Woodland Area-Sensitive Bird Breeding Habitat	No	Yes	Site Investigation	Yes	Addition of Generalized Candidate Significant Wildlife Habitat for Woodland Area-Sensitive Bird Breeding Habitat located within the 50 m setback of the Project Location. This feature will be carried forward to the Evaluation of Significance.

9. CONCLUSIONS

This report is intended to fulfill requirements for the *NHA Site Investigation Report* under O. Reg. 359/09. Based on the results of the site investigations, this report identified the accuracy of the records review, the addition of any previously unidentified natural features, the boundaries of natural features located within 50 m of the Project Location, and the distance of the natural feature from the Project Location (**Figures 7A-7P**).

This *NHA Site Investigation Report* is the second report in a series that will fulfill the *NHA* component of the REA process. Site investigations were carried out based on the results of a completed records review as well as consultation with the MNRF. Applicable natural features identified as being within 50 m of a project component will require an evaluation of significance based on information confirmed during the records review, site investigation and in consultation with appropriate agencies (REA Section 27). The natural features applicable to the Project are identified in **Table 11** and will be evaluated in the *NHA Evaluation of Significance Report*.

Table 11: Identified Natural Features Within 50 m of the Project Location

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Wetlands					
Unevaluated Southern Wetlands (4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32)	No	Yes	Yes**	No	N/A
Woodlands					
Unevaluated Southern Woodlands (A, B, C, D, E, F, H, I, K, L, M)	Yes	Yes	Yes	No	N/A
Candidate Significant Wildlife Habitat					
Seasonal Concentration Areas					
Waterfowl Stopover and Staging Areas (Aquatic) - Generalized	No	Yes	No	No	Yes
Shorebird Migratory Stopover Areas - Generalized	No	Yes	No	No	Yes
Bat Maternity Colonies - Generalized	No	Yes	No	No	Yes
Turtle Wintering Areas - TWA1, TWA2	Yes	Yes	Yes	No	N/A
Turtle Wintering Areas - Generalized	No	Yes	No	No	Yes

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Colonially- Nesting Bird Breeding Habitat (Ground) - CNG1, CNG2	No	Yes	Yes	No	N/A
<i>Rare Vegetation Communities</i>					
No applicable rare vegetation communities.					
<i>Specialised Wildlife Habitat</i>					
Woodland Raptor Nesting Habitat - WRNH1	No	Yes	Yes	No	N/A
Turtle Nesting Areas - TNA1	No	Yes	Yes	No	N/A
Seeps and Springs - Generalized	No	Yes	No	No	Yes
Amphibian Breeding Habitat (Woodland) - ABHWO1, ABHWO2, ABHWO3, ABHWO4, ABHWO5	Yes	Yes	Yes	No	N/A
Amphibian Breeding Habitat (Wetland) - ABHWE1, ABHWE2, ABHWE3, ABHWE5, ABHWE6, ABHWE7, ABHWE8, ABHWE9, ABHWE10, ABHWE11, ABHWE12, ABHWE13, ABHWE14	Yes	Yes	Yes	No	N/A
Amphibian Breeding Habitat (Wetland)	No	Yes	No	No	Yes

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
- Generalized					
<i>Habitat of Species of Conservation Concern</i>					
Marsh Bird Breeding Habitat - MBBH1, MBBH2, MBBH3, MBBH4, MBBH5, MBBH6	Yes	Yes	Yes	No	N/A
Marsh Bird Breeding Habitat - Generalized	No	Yes	No	No	Yes
Woodland Area- Sensitive Bird Breeding Habitat - ASBB1	Yes	Yes	Yes	No	N/A
Woodland Area- Sensitive Bird Breeding Habitat - Generalized	No	Yes	No	No	Yes
American Gromwell - AG1, AG2, AG3, AG4, AG5, AG6	Yes	Yes	Yes	No	N/A
Hill's Pondweed - HP1, HP3, HP4, HP5, HP6	Yes	Yes	Yes	No	N/A
Hill's Pondweed - Generalized	No	Yes	No	No	Yes
Scarlet Beebalm	Yes	Yes	Yes	No	N/A

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
- SB1, SB2, SB3, SB4, SB5, SB6, SB8					
Scarlet Beebalm - Generalized	No	Yes	No	No	Yes
Soft-hairy False Gromwell - SHFG1, SHFG2, SHFG3, SHFG4, SHFG5, SHFG6	Yes	Yes	Yes	No	N/A
Common Nighthawk - CN1, CN2, CN3, CN4, CN5	Yes	Yes	Yes	No	N/A
Redheaded Woodpecker - RHW1	No	Yes	Yes	No	N/A
Harlequin Darner - HD1, HD2, HD3, HD4, HD5, HD6, HD7, HD8, HD9, HD10, HD11,	No	Yes	Yes	No	N/A
<i>Animal Movement Corridors</i>					
Amphibian Movement Corridors	Yes	Yes	Yes	No	N/A
<i>Generalized Candidate Significant Wildlife Habitat</i>					
Waterfowl Stopover and Staging Areas (Aquatic)	No	Yes	No	No	Yes
Shorebird Migratory Stopover and Staging Areas	No	Yes	No	No	Yes
Bat Maternity Colonies	No	Yes	No	No	Yes

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Turtle Wintering Areas	No	Yes	No	No	Yes
Hill's Pondweed	No	Yes	No	No	Yes
Scarlet Beebalm	No	Yes	No	No	Yes
Seeps and Springs	No	Yes	No	No	Yes
Amphibian Breeding Habitat (Wetland)	No	Yes	No	No	Yes
Marsh Bird Breeding Habitat	No	Yes	No	No	Yes
Woodland Area-Sensitive Bird Breeding Habitat	No	Yes	No	No	Yes

*an evaluation would not be required if the natural feature is located entirely within the 50 m setback, it is being treated as significant (i.e., studies to evaluate significance will be done pre-construction), or it is assumed significant (i.e., studies to verify provincial significance will not be undertaken or wildlife habitat has been deemed largely unimpacted by the development of a solar facility). **Wetlands will be assessed using *Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects* of the Natural Heritage Assessment Guide for Renewable Energy Projects the (MNRF 2012).

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APPENDIX A
Field Notes



Property 15B - South Half



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028

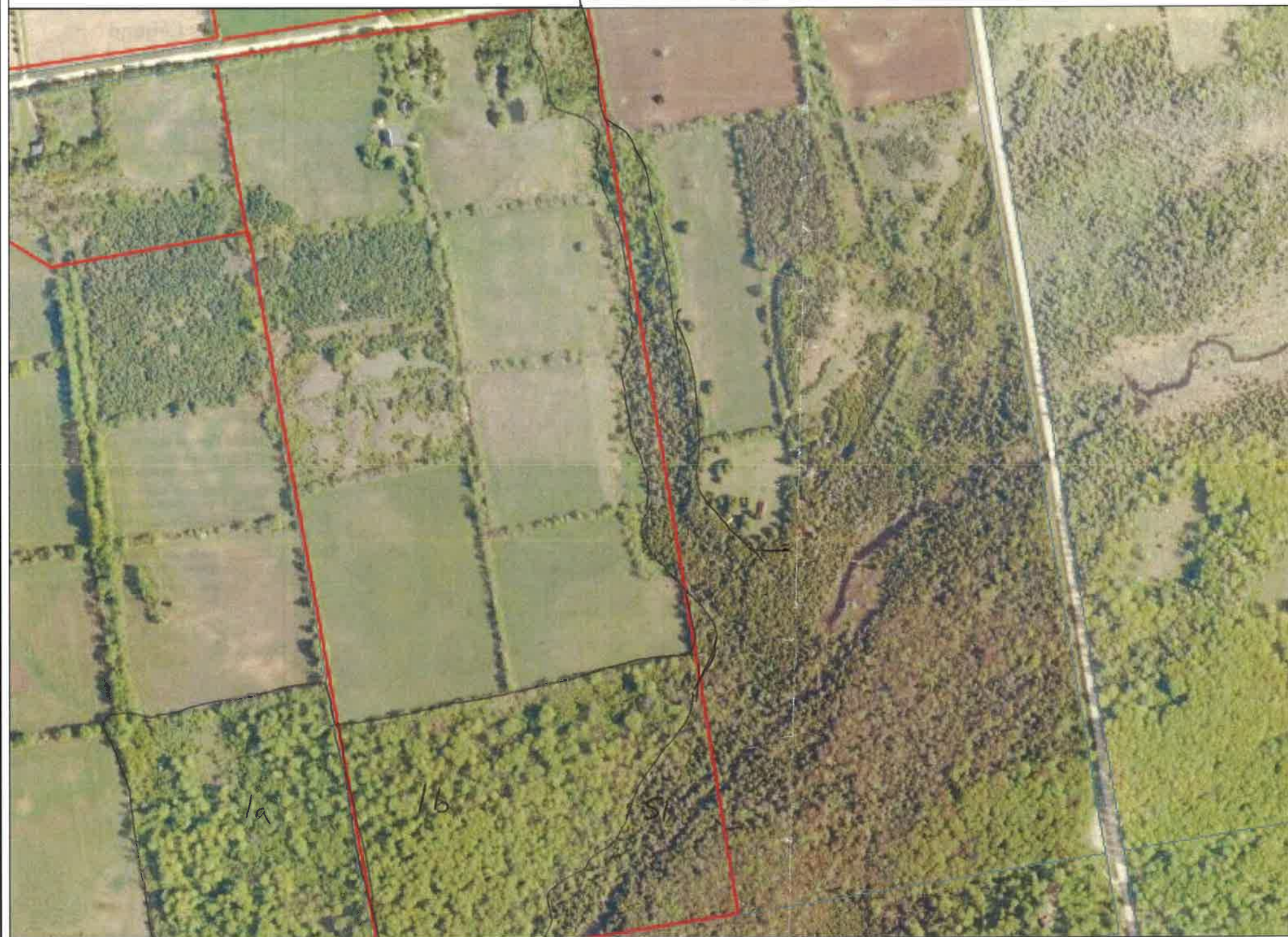


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Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Property 15B - North Half



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)



Scale: 1 : 9,028



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Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
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0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Legend

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- Unevaluated Wetland
- Woodland**
- Woodland
- Area of Natural & Scientific Interest (ANSI)**
- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI
- Natural Heritage System**
- Greenbelt Plan (Natural Heritage System)
- Niagara Escarpment Plan (Escarpment Natural)
- Niagara Escarpment Plan (Escarpment Protection)
- Oak Ridges Moraine Conservation Plan (Natural Core Area)
- Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.4 0 0.19 0.4 Kilometers

Scale: 1 : 7,357



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Legend

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 - Unevaluated Wetland
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 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
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0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Location 9 - East Half



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
- Provincially Significant Wetland Evaluated
- Non-Provincially Significant Wetland Evaluated
- Unevaluated Wetland
- Woodland**
- Woodland
- Area of Natural & Scientific Interest (ANSI)**
- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI
- Natural Heritage System**
- Greenbelt Plan (Natural Heritage System)
- Niagara Escarpment Plan (Escarpment Natural)
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- Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Location 9 - West Half



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Legend

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 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
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 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Legend

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 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Legend

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- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unassessed Wetland
- Woodland**
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 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
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 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)



Scale: 1 : 9,028



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Legend

-  Conservation Reserve
-  Provincial Park
- Wetland**
 -  Provincially Significant Wetland: Evaluated
 -  Non-Provincially Significant Wetland: Evaluated
 -  Unevaluated Wetland
- Woodland**
 -  Woodland
- Area of Natural & Scientific Interest (ANSI)**
 -  Provincially Significant Life Science ANSI
 -  Provincially Significant Earth Science ANSI
- Natural Heritage System**
 -  Greenbelt Plan (Natural Heritage System)
 -  Niagara Escarpment Plan (Escarpment Natural)
 -  Niagara Escarpment Plan (Escarpment Protection)
 -  Oak Ridges Moraine Conservation Plan (Natural Core Area)
 -  Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 11**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

- 1- Fresh-Moist Sugar Maple
Hardwood Dec. For. FODM6-5
- 2- White Cedar Hardwood
Organic Mixed Swamp ~~SWM1-1~~ ^{SWM1-1}
- 3- White Cedar Hardwood Mineral
Mixed Swamp SWMM1-1
- 4- Green Ash Mineral Deciduous
Swamp SWDM2-2
- 5- Mixed Graminoid Mineral Meadow
Marsh MAMM1-16
- 6- Hawthorn Deciduous Shrub Thicket
THDM2-11
- 7- Graminoid Meadow - MEG

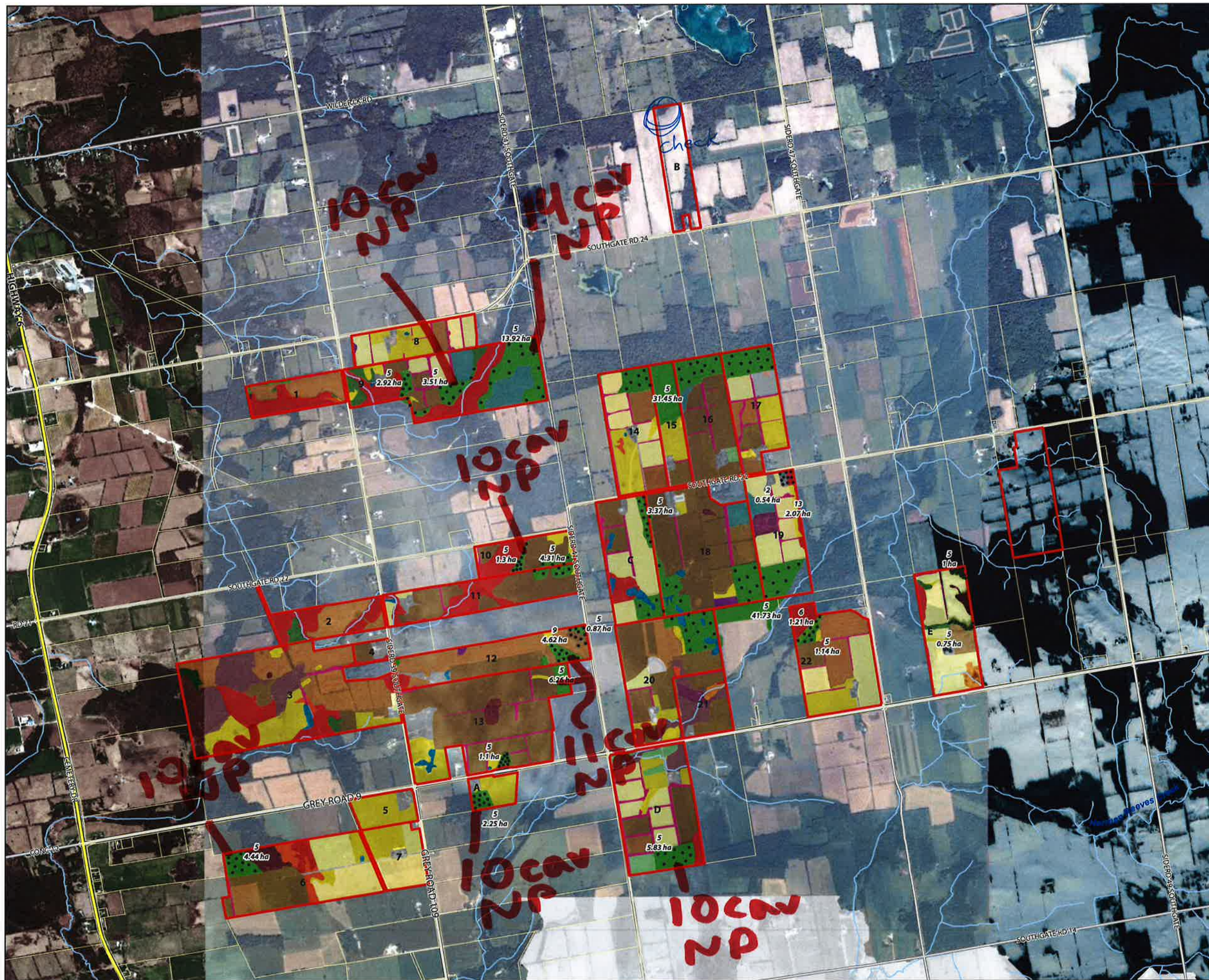
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd



PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

BAT SURVEY POINTS

- Bat Survey Point
- ▭ Project Location (Optional Lands)
- ▭ Parcel Boundary
- Watercourse
- 1. CVC: 4: Extraction
- 2. CVR: 4: Rural Residential Property
- 3. FOC: Coniferous Forest
- 4. FOCM6: Naturalized Coniferous Plantation
- 5. FOD: Deciduous Forest
- 6. FOM: Mixed Forest
- 7. MAM: Meadow Marsh
- 8. MEM: Mixed Meadow
- 9. OAGM1: Annual Row Crop
- 10. OAGM2: Perennial Cover Crop
- 11. OAGM4: Open Pasture
- 12. OAO: Open Aquatic
- 13. SWC: Coniferous Swamp
- 14. SWD: Deciduous Swamp
- 15. SWM: Mixed Swamp
- 16. SWT/MAM: Swamp Thicket and Meadow Marsh Complex
- 17. SWT: Swamp Thicket
- 18. TAGM1: Coniferous Plantation
- 19. TAGM5: Fencerow
- 20. THD: Deciduous Thicket
- 21. THM: Mixed Thicket



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: MB
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\PDR



PROJ. IFC: 149154
STATUS: DRAFT
DATE: 6/12/2014

* candidate habitat.

31
20
10
30
12 1

Candidate Bat Maternity Roost Data Form

Property 12/13

Page 1 of 2

Use this form in FOD, FOM

Project Name: Shack

Project #:

Polygon Size:

Community Age: Young/Mid-Age/Mature/Old Growth

Start Time: 13:45

End Time: 15:15

Date: May 13 14

Surveyor(s): Jonathan Harris

Polygon ID

Weather Conditions: cc-80%, 23°C, wind-3

Plot Centre: Pre-mapped / Site survey

sugar maple - hardwood fOD

GPS

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: 17)	Comments	
Plot 1	2	0520041 4882668		44
Plot 2	0	0519999 4882685		45
Plot 3	0	0519968 4882659		46
Plot 4	0	0519926 4882663		48
Plot 5	0	0519883 4882647		43
Plot 6	3	0519889 4882701		49
Plot 7	0	0519852 4882735		42
Plot 8	0	0519828 4882770		41
Plot 9	1	0519905 4882730		50
Plot 10	0	0519948 4882708		47
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Total Snag Density = total # cavity trees / (# plots x .05ha)

$6(10 \times 0.05) = 12 \text{ trees}/0.5 = 24 \text{ trees/ha}$

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)

Plots = 12.6m radius (≈ 0.05ha)

y. hawk hawk
white tail hawk
wild turkey
fish-eat-the-pulpit

bloodroot

G. chipmunk.

GRFL
chestnut-sided warbler
BLJA
SOSP
BAOR

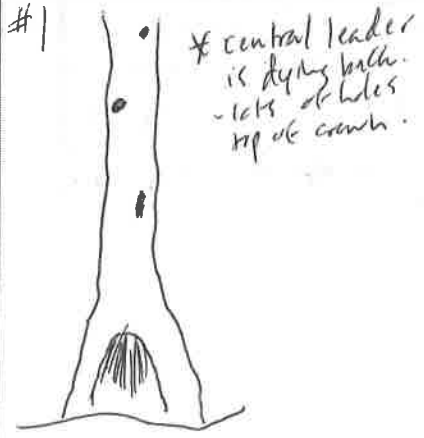
Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM	Notes	Photo Number(s)
1	Fayugra	~4	79	1-6.5m	~20	0520051 4882665	Poor condition	71-74
2	Acer sac	1	48	~8m	~15	0520037 4882680		75-76
3	Acer sac.	1	74	~8m	~20	0519878 4882704		77-78
4	Acer sac	1	37	~6m	~15	0519905 4882725		79-80
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
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30								

GPS
54
55
56
57

Sketch candidate trees with multiple cavities, identifying the location of cavities



* candidate habitat.

Candidate Bat Maternity Roost Data Form		Peperity 10		Page 1 of 2	
Use this form in <input checked="" type="radio"/> OD, FOM		Project #:		Community Age: Young/Mid-Age/Mature/Old Growth	
Project Name: <u>Southgate</u>		Polygon Size:		Surveyor(s): <u>Jonathan Harris</u>	
Start Time: <u>0815</u>		End Time: <u>0945</u>		Date: <u>May. 13.14</u>	
Polygon ID:		Weather Conditions: <u>overcast, 16% wind-2</u>		Plot Centre: <input checked="" type="radio"/> Pre-mapped <input type="radio"/> Site survey	
Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: <u>17</u>)		Comments	
Plot 1	0	0519623	4883593.	Plot abundant <u>Thyoc</u> in 2-10m layer.	
Plot 2	1	0519604	4883556		
Plot 3	0	0519596	4883518		
Plot 4	0	0519580	4883482		
Plot 5	0	0519561	4883451		
Plot 6	0	0519576	4883427		
Plot 7	1	0519516	4883378		
Plot 8	1	0519544	4883386		
Plot 9	0	0519575	4883393		
Plot 10	0	0519544	4883419		
Plot 11					
Plot 12					
Plot 13					
Plot 14					
Plot 15					
Plot 16					
Plot 17					
Plot 18					
Plot 19					
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Plot 30					
Plot 31					
Plot 32					
Plot 33					
Plot 34					
Plot 35					

APS
80
79
78
77
76
75
73
72
71
74

Total Snag Density = total # cavity trees / (# plots x .05Ha) $3 / (10 \times 0.05) = 6 \text{ trees}/0.5 \text{ ha} = 12 \text{ trees/ha}$
 Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) [Plots = 12.6m radius (= 0.05ha)]

- WTSP
- AMCR
- chestnut-sided warbler
- BJA
- BWA
- dusky yellow violet
- large-flowered yellowthroat.
- canada violet
- common blue violet.
- red millium

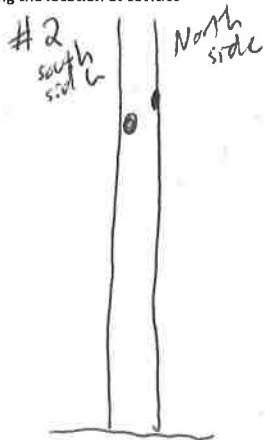
Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM		Notes	Photo Number(s)
1	Acersac	1	38	~2.5m	~12m	0519592	4883546	GPS-046	17, 18
2	Acersac	2	36	~4-5m	~15m	0519514	4883387	047	26-28
3	Acersac	1	47	~4m	~15m	0519524	4883891	048	29-30
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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29									
30									

Sketch candidate trees with multiple cavities, identifying the location of cavities

N. fruit lily
white willow.



Other wild life observed during surveys

SPDE RUGR
 RTHA
 YBSA
 OVEN
 NOFL

1/3

AURO GTRR AMGO
 BLTA E. Santa walla** BARS - f/o woodlot
 ACFL SOSP NLFR
 BLWZ GACA RBAK
 CSLWA BAOR COGR

Property 18/1a/20/C

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM Page 1 of 2

Project Name: Sooty Throat Project #: 14/154 Polygon Size: _____ Community Age: Young/Mid-Age/Mature/Old Growth Mid Age

Start Time: 11:20 End Time: 14:30 Date: May 12 2014 Surveyor(s): RLB

Polygon ID: 20 (15d) Weather Conditions: Temp 20°C Cloud 100% Wind 82-3 Plot Centre: Pre-mapped Site survey

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: _____)	Comments
Plot 1 ^{GPS 209}	0	520951, 4882732	
Plot 2 ^{GPS 210}	1	521073, 4882756	Cavity tree - S&CT 1
Plot 3 ^{GPS 207}	2	521130, 4882849	Sta. 207 moved slightly due to small bottle point
Plot 4 ^{GPS 214}	0	521146, 4882996	
Plot 5 ^{GPS 219}	1	521062, 4883025	
Plot 6 ^{GPS 217}	0	520935, 4883015	
Plot 7 ^{GPS 206}	0	520914, 4882892	
Plot 8 ^{GPS 208}	0	520941, 4882805	
Plot 9 ^{GPS 201}	0	521013, 4882878	
Plot 10 ^{GPS 199}	0	520902, 4882985	
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Total Snag Density = total # cavity trees / (# plots x .05Ha) $6 / (34 \times 0.05) = 3.5 \text{ trees/0.05Ha} = 70 \text{ trees/Ha}$

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 12.6m radius (= 0.05ha)

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees							Page 2 of 2		
Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30									
Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM		Notes	Photo Number(s)
56 of 30	1	ACERSAS	1	32 cm	15m	20m	521068, 4882752	cavity facing west on dead limb branch	4270-4271
56 of 30	2	ALERUB	1	25 cm	8m	20m	521139, 4882849	low vertical cavity south side	4273-4274
56 of 30	3	ALERUB	2	30 cm	2.5, 8m	20m	521131, 4882957	low cavity distinct high cavity obscured	4275-4276
56 of 30	4	ACERSAS	2	32 cm	12m, 15m	20m	521084, 4883020	cavity old & cavity young slightly west side tree	4290-4293
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
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22									
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24									
25									
26									
27									
28									
29									
30									

high cavity may be standard

Sketch candidate trees with multiple cavities, identifying the location of cavities

large stroke nest pits - 37/88
 RTHA? doesn't appear active.
 atop a branch
 GPS - 60
 0520582
 4883074

Candidate Bat Maternity Roost Data Form
 Use this form in FOD, FOM
 Project Name: Southgate Project #: _____ Polygon Size: _____ Community Age: Young/Mid-Age/Mature/Old Growth
 Start Time: 0800 End Time: 0940 Date: May 14, 14 Surveyor(s): Jonathan Harris
 Polygon ID: _____ Weather Conditions: overcast, 100% w-0 Plot Centre: Pre-mapped / Site survey

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: 17)	Comments
Plot 1	0	0520612 4883019	
Plot 2	0	0520733 4883047	
Plot 3	0	0520873 4883129	
Plot 4	0	0520835 4883245	abundant regrowth; only one ≥ 25cm DBH
Plot 5	0	0520760 4883260	only one tree ≥ 25cm DBH
Plot 6	0	0520675 4883137	
Plot 7	0	0520541 4883092	
Plot 8	0	0520095 4883415	regrowth - no ≥ 25cm DBH
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

GPS
 203
 229
 230
 205
 213
 198
 227
 228

Total Snag Density = total # cavity trees / (# plots x .05Ha) $(0(34 \times 0.05)) = 3.5 \text{ trees/0.05ha} \approx 70 \text{ trees/ha}$
 Number of Plots: Sites ≤ 10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) | Plots = 12.6m radius (= 0.05ha)

white trillium
 toothwort.
 y. foot lily
 downy yellow } violet.
 common blue }
 Canada

raccoon
 chipmunk
 E. Squirrel
 Chf. } woodchuck
 NLR } ponds

BLJA
 chestnut-sided.
 NCI
 AMBO
 evening grosbeak.
 HAWO

Candidate Bat Maternity Roost Data Form

Property 18/19/2010

Use this form in FOM, FOM

Page 1 of 2

Project Name: 2010-10

Project #:

Polygon Size:

Community Age: Young/Mid-Age/Mature/Old Growth

Start Time: 15:45

End Time: 17:15

Date: May 13 14

Surveyor(s): Jonathan Harris

Polygon ID:

Weather Conditions: CC-80%, 30°C, w-3

Plot Centre: Pre-mapped Site survey

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: 17)	Comments	GPS
Plot 1	0	0521831 4883426		196
Plot 2	0	0521751 4883396		210
Plot 3	0	0521666 4883366		202
Plot 4	0	0521727 4883289		217
Plot 5	0	0521660 4883198		226
Plot 6	1	0521624 4883271		224
Plot 7	0	0521565 4883163		220
Plot 8	0	0521425 4883134		221
Plot 9	1	0521436 4883201		204
Plot 10	0	0521366 4883235		211
Plot 11	0	0521347 4883299		225
Plot 12	0	0521313 4883371	no trees ≥ 25 cm DBH	214
Plot 13	0	0521412 4883319		200
Plot 14	0	0521492 4883250		222
Plot 15	0	0521545 4883316		197
Plot 16	0	0521474 4883398		223
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Total Snag Density = total # cavity trees / (# plots x .05ha)

6 / (34 x 0.05)

3.5 trees / 0.05ha

3 trees / 0.05ha

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)

Plots = 12.6m radius (= 0.05ha)

y. bark like
white millium
red trillium.

sharp-lobed hepatrea.

OBV
BLSA
INBU
Scarlet tanager
Ruffed Grouse

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM	Notes	Photo Number(s)
1	Acersac	1	39	~8	~15	0521618 4883278	GPS-058	81/82
2	Acersac	1	29	~6	~10	0521444 4883201	059	85/86
3								
4								
5								
6								
7								
8								
9								
10								
11								
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28								
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30								

Sketch candidate trees with multiple cavities, identifying the location of cavities

Candidate Bat Maternity Roost Data Form

Property 12

Use this form in FOD/FOM

Page 1 of 2

Project Name: Schizoc

Project #:

Polygon Size:

Community Age: Young/Mid-Age/Mature/Old Growth

Start Time: 12:30

End Time: 13:30

Date: May 13, 14

Surveyor(s): Jonathan Harris

Polygon ID:

Weather Conditions: partly CC - 20%, 23% wind 3

Plot Centre: Pre-mapped Site survey

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM	(Zone: <u>17</u>)	Comments
Plot 1	0	0520058	4882860	* change ELC - Feb has been removed for 7-line, survey stations need to be moved in field (x5)
Plot 2	0	0520044	4882880	
Plot 3	0	0520021	4882821	
Plot 4	0	0520004	4882888	
Plot 5	1	0519974	4882907	
Plot 6	0	0520022	4882906	
Plot 7	0	0520045	4882901	
Plot 8	0	0520084	4882911	
Plot 9	0	0520075	4882894	
Plot 10	0	0520094	4882859	
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
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Plot 26				
Plot 27				
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Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

GPS
53
58
59
52
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56
57

Total Snag Density = total # cavity trees / (# plots x .05ha) $(10 \times 0.05) = 2 \text{ trees} / 0.5 \text{ ha} = 4 \text{ trees/ha}$

Number of Plots: Sites ≤ 10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) | Plots = 12.6m radius (= 0.05ha)

dammy yellow violet red trillium
c. blue violet wild ginger
y. trout lily blood root
white trillium sharp-lobed hepatica.

$(10 \times .05) = 2 \text{ trees} / 0.5 \text{ ha} = 4 \text{ trees/ha}$

nw edge of
FOD

GPS-51
0519948
4882911

53
0520115
4882834

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM		Notes	Photo Number(s)
1	Acacia	1	46	~4m	~15m	051998	4882912	GPS-52	57,58
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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27									
28									
29									
30									

Sketch candidate trees with multiple cavities, identifying the location of cavities

BoBo
calling from
OAG-M2.

nest - stick nest, in Prunser;
doesn't appear active.
pic - 10
possibly raptor or crow

Candidate Bat Maternity Roost Data Form		Property 14, 15, 16, 17		Page 1 of 2
Use this form <input checked="" type="checkbox"/> FOD, FOM		Project #:	Polygon Size:	Community Age: Young/Mid-Age/Mature/Old Growth
Project Name: Southgate	Start Time: 11:48	End Time: 16:04	Date: May 12, 14	Surveyor(s): Jonathan Harris
Polygon ID	Weather Conditions: overcast, 20°C, wind-1		Plot Centre: <u>Pre-mapped</u> / Site survey	
Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: 17T)	Comments	
Plot 1	1	0520429 4884844	maple-hardwood fad; trees ≥ 25cm DBH occasional.	
Plot 2	1	0520425 4884966	maple-hardwood fad	
Plot 3	0	0520465 4884899	"	
Plot 4	0	0520534 4884877	" Prunser dominant.	
Plot 5	0	0520530 4884952	"	
Plot 6	0	0520571 4884995	"	
Plot 7	0	0520593 4884929	"	
Plot 8	0	0520620 4884875	" Prunser dominant.	
Plot 9	0	0520853 4885004	" - more regen growth	
Plot 10	0	0520948 4885046	" - more raspberry	
Plot 11	0	0521005 4885059	"	
Plot 12	0	0521066 4885033	"	
Plot 13	0	0521154 4885087	"	
Plot 14	0	0521283 4885110	"	
Plot 15	0	0521396 4885122	"	
Plot 16	0	0521496 4885145	"	
Plot 17	0	0521581 4885167	"	
Plot 18	0	0521573 4885080	"	
Plot 19	0	0521609 4885017	"	
Plot 20	0	0521524 4885018	"	
Plot 21	0	0521497 4885090	"	
Plot 22	0	0521432 4885055	"	
Plot 23	0	0521419 4884986	"	
Plot 24	0	0521358 4885049	"	
Plot 25	0	0521263 4885048	"	
Plot 26	0	0521286 4884965	"	
Plot 27	0	0521130 4884988	"	
Plot 28	0	0521040 4884990	"	
Plot 29	0	0520928 4884971	"	
Plot 30	1	0520934 4884902	"	
Plot 31	0	0520876 4884921	"	
Plot 32				
Plot 33				
Plot 34				
Plot 35				

G.P.S
1888189
1651
178
1711
195
193
190
187
186
176
185
185
184
174
172
1661
1671
194
1681
183
1701
191
175
177
173
1691
179
182
180
181
192

Total Snag Density = total # cavity trees / (# plots x .05Ha) = 3 / (31 x 0.05) = 1.9 trees / 0.05Ha
 Number of Plots: Sites ≤ 10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) [Plots = 12.6m radius (= 0.05Ha)]

wild ginseng 0 wild leek 0
 y. trout lily 0 early meadow ve. R
 white trillium 0 yellow violet R
 red trillium R carolina spring beauty R
 yellow bellwort R large-flowered bellwort R
 blue cohosh 0 common blue violet R

evening grosbeak. NOFI
 BSA
 ch. snout-sided purple Finch
 warbler
 thrush
 hermit
 AMBO
 AMGO
 HAWO
 G.A.P.W
 BCCIT

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM		Notes	Photo Number(s)
1	ACERSAC	1	36	~3m	~7-8m	0520416	4884840	GPS-043	1,2
2	FRAXAUL	1	59	~2.5m	~10m	0520428	4884948	GPS-044	6,7
3	ACERSAC	1	49	~4.5m	~12m	0520945	4884901	GPS-045	15,16
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Sketch candidate trees with multiple cavities, identifying the location of cavities

SHOCK nest
 raptor or crow?
 0519905 4883366
 atop a Astersac.
 ~ 10-15m.

Pils - 44/45
 doesn't appear
 active.

* red-headed
 woodpecker (x2)
 observed in FOD

Candidate Bat Maternity Roost Data Form

Property 10/11

Use this form in FOD, FOM

Page 1 of 2

Project Name: Southgate

Project #: 140154

Polygon Size:

Community Age: Young/Mid-Age/Mature/Old Growth

Start Time: 10:01

End Time: 11:40

Date: May 13 14

Surveyor(s): Jonathan Harris

Polygon ID

Weather Conditions: overcast, 18°C, wind - 3/4

Plot Centre: Pre-mapped / Site survey

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: 17)	Comments	CPS
Plot 1	0	0519686 4883378	similar forest as FOD to the west.	64
Plot 2	0	0519759 4883354		65
Plot 3	0	0519862 4883350		68
Plot 4	0	0519917 4883356		70
Plot 5	0	0519964 4883390		63
Plot 6	0	0519958 4883482	* Hawthorn thicket inclusion	61
Plot 7	0	0519925 4883429		62
Plot 8	0	0519885 4883399	abundant faxane regem. saplings.	66
Plot 9	1	0519853 4883428		69
Plot 10	1	0519755 4883431		67
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Total Snag Density = total # cavity trees / (# plots x .05ha) = 2 / (10 x 0.05) = 4 trees / 0.5ha = 8 trees/ha

Number of Plots: Sites ≤ 10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) | Plots = 12.6m radius (= 0.03ha)

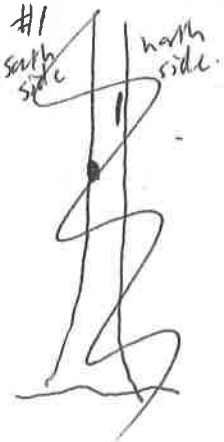
- red willow
- white willow
- common blue violet
- downy yellow violet
- Canada violet
- toothwort
- Y. trout lily
- Carolina spring beauty
- bloodroot
- G. strawberry
- shepherd-purse
- hepatica
- red squirrel
- G.B.A
- house wren
- WTD
- AMGO
- AMRO
- SosP
- garter snake

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM	Notes	Photo Number(s)
1	Acer sac	4	23	3-5m				31-37
2	Acer sac	1	57	~4m	~15	0519840 4883431	CPS-49	50-51
3	Acer sac	1	30	~6m	~15	0519752 4883431	50	55, 56
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
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27								
28								
29								
30								

Sketch candidate trees with multiple cavities, identifying the location of cavities



Other wild life
ground hogs
BL SA
LWSL

CORA } corn field
AMLR }
FASL }

Candidate Bat Maternity Roost Data Form Property 13 (10)

Use this form in FOD, FOM, Page 1 of 2
 Project Name: 50/10/10 Project #: 149154 Polygon Size: _____ Community Age: Young/Mid-Age/Mature/Old Growth
 Start Time: 16:40 End Time: 17:16 Date: May 13 2014 Surveyor(s): RLB
 Polygon ID: 13 (10) Weather Conditions: Wind 15-20 (NW) 30% Temp 25 Plot Centre: Pre-mapped Site survey

Plot Number	# cavity trees ≥ 25cm dbh	Plot Centre UTM (Zone: _____)	Comments
Plot 1 ^{CP} 21	0	519404, 4881795	Ridge, limitation beside hawthorn thicket, no trees > 25cm
Plot 2 ^{CP} 22	0	519414, 4881824	ACERSAS regn beside dead pine in limitation, most trees under 25cm
Plot 3 ^{CP} 24	0	519429, 4881852	ACERSAS regn most trees under 25cm.
Plot 4 ^{CP} 25	0	519444, 4881877	Open ACERSAS regn.
Plot 5 ^{CP} 30	0	519446, 4881893	ACERSAS hedge & regn
Plot 6 ^{CP} 26	0	519469, 4881862	ACERSAS hedge & regn
Plot 7 ^{CP} 27	1	519482, 4881837	ACERSAS hedge with PRUNSER, MALVUM, PINURUS
Plot 8 ^{CP} 28	0	519473, 4881809	MALVUM, hawthorn thicket to ULMUAMP, ACERSAS
Plot 9 ^{CP} 27	0	519455, 4881833	hawthorn thicket to open ACERSAS regn
Plot 10 ^{CP} 23	0	519437, 4881803	ULMUAMP, PRUNSER, MALVUM hawthorn
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Total Snag Density = total # cavity trees / (# plots x .05Ha) $1/(10 \times 0.05) = 2 \text{ trees}/0.5 \text{ ha} = 4 \text{ trees/ha}$
 Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) | Plots = 12.6m radius (= 0.05ha)

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM	Notes	Photo Number(s)
56625 1	ALCASAS	1	52	4m	15m	519486, 4881845	Cavity on E side can't be seen	4409-4410
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
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26								
27								
28								
29								
30								

Sketch candidate trees with multiple cavities, identifying the location of cavities

ELC SOILS ONTARIO	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

PIA	PP	Dr	Position	Aspect	%	Type	Class	Z	UTM		
									EASTING	NORTHING	
1	A	5	3	1	-	-	sample	a	17	520951	4894951
2											
3											
4											
5											

SOIL TEXTURE x HORIZON	1	2	3	4	5
A					
20cm					
B 52cm					
C ↓120					

A	TEXTURE	L				
	COURSE FRAGMENTS	nonp				
B	TEXTURE	SiL				
	COURSE FRAGMENTS	nonp				
C	TEXTURE	Si				
	COURSE FRAGMENTS	nonp				
	EFFECTIVE TEXTURE	Si				
	SURFACE STONINESS	2				
	SURFACE ROCKINESS	1				

DEPTH TO / OF					
MOTTLES	gqg				
GLEYS	gqg				
BEDROCK	gqg				
WATER TABLE	gqg				
CARBONATES	20				
DEPTH OF ORGANICS	0				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	2				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST	SITE: <i>Sandy Soil Property 12</i>
	POLYGON:
	DATE: <i>June 5 2014</i>
	SURVEYOR(S): <i>RLB</i>

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
 ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COL.
	1	2	3	4	
ALBEGAS	A	A	O	A	
PRUNSER	A	A			
FAGUERA	O				
BETUALL	P				
FRAXAME			O		
CORNALT			O		
SAMBAC			O		
RIBECYN			R		
VITIKIP			R		
PRUNVIR			R		
RUBUIDA			O	O	

SPECIES CODE	LAYER				COL.
	1	2	3	4	
CIRCLUT				A	
SOLA-DUL				R	
ALLITLI				O	
blue chabach				O	
VIOLCAI				A	
TRILGRA				A	
GERAROB				O	
UVULGRA				R	
ERITAME				O-A	
CARECOS				O	
Jack-in-the-pulpit				O	
TALLOFF				R	
ACTA-PAC				R	
CYSTERA				R	
POLY PUB				R	
MAIARAC				R-O	
Carex gracillima				O	
hatched cowfoot				R	
DRY-LANT				O	
TIARCOR L				R	

ELC MANAGEMENT / DISTURBANCE	SITE:				SCORE †
	POLYGON:				
	DATE:				
	SURVEYOR(S):				
DISTURBANCE / EXTENT	0	1	(2)	3	
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

New ID # 14015

ELC WILDLIFE		SITE: Eastgate 90th Property 12	
		POLYGON:	
		DATE: June 5 2014	
		SURVEYOR(S): NLS	
		START TIME: 1220	END TIME:

TEMP (°C): 20	CLOUD (10th): 20	WIND: 3	PRECIPITATION: none
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

<input type="checkbox"/>	VERNAL POOLS	<input checked="" type="checkbox"/>	SNAGS
<input type="checkbox"/>	HIBERNACULA	<input checked="" type="checkbox"/>	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	TAWD	OB	partial	1					
B	REVI	OB		1					
B	EALW	OB		1					
B	OVEN	OB		1					
M	LITA	OB	fallen	1					

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT

SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY
A = ANXIETY BEHAVIOUR

D = DISPLAY
N = NEST BUILDING

P = PAIR
V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION
NE = EGGS
AE = NEST ENTRY

NU = USED NEST
NY = YOUNG

FY = FLEDGED YOUNG
FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED
DP = DISTINCTIVE PARTS
TK = TRACKS
SI = OTHER SIGNS (specify)

VO = VOCALIZATION
HO = HOUSE/DEN
FE = FEEDING EVIDENCE

CA = CARCASS
FY = EGGS OR YOUNG
SC = SCAT

New ID# 14615

Southgate Solar Property 12e Wetland 2 is ELL community 2

Site: Southgate Solar Property 12e 12e Observer (s): RLB Date: June 5

Wetland 2 is MAM bldg Wetland 2 ELL community 2

Field No: 1 Wetland Type: Palustrine Site Type: S Dominant Form: H
 % Open Water: <5% Water Depth (cm): <12cm Depth of Organics (cm): 23cm
 Soil: A Silt Depth to Mottles (cm): 0 Gley (cm): 0
 B Depth to Mottles (cm): Gley (cm):
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species³)
 h FRAX NIG¹ TILIA M² ULM M²
 c THU OCC³
 dc, dh, ds
 ts
 ls
 gc MATT STR² ONOC SEN¹ EQUI ARV² ATHY FIL²
 ne CARB VUL² POA PAL²
 be
 re
 ff
 f
 su
 m

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

Field No: 2 Wetland Type: Palustrine Site Type: M Dominant Form: NP
 % Open Water: <5% Water Depth (cm): 22cm Depth of Organics (cm):
 Soil: A Depth to Mottles (cm): Gley (cm):
 B Depth to Mottles (cm): Gley (cm):
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species³)
 h
 c
 dc, dh, ds
 ts
 ls CORN STO² SPIR ALB²
 gc
 ne PHAL ALU¹
 be
 re
 ff
 f
 su
 m

Rare Species (Local, Regional, Provincial): pics 5123-5125	Wildlife Notes:
---	-----------------

Site: Southgate Solar Properties 12012e Observer (s): PLS Date: June 5 2014

Wetland
3 is
Cattail
Grassland
Marsh
within
SW
pasture
area

Field No: 3 Wetland Type: Palustrine Site Type: M Dominant Form: CP
 % Open Water: 22% Water Depth (cm): 20cm Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 re PHALARIS
 be _____
 re Typha sp.
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial): PLS 5127-5130 Wildlife Notes:

Wetland
4 is
small
MANN
in SE
pasture
area

Field No: 4 Wetland Type: Palustrine Site Type: M Dominant Form: NP
 % Open Water: None Water Depth (cm): 0 Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 re PHALARIS SCIRPACEA
 be _____
 re TYPHA SP.
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial): PLS 6002-6003 Wildlife Notes:



Location 9 - East Half

10
11
12
13
14
15
16
17
18
19
20



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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Location 9 - West Half



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)



Scale: 1 : 9,028



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SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 12**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:5,400



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate.mxd



PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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ELC SOILS ONTARIO	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

Slope							UTM				
P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING	
1	4	4	3	2	N	12	comp	E	17	521269	4995763
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A ↓ 30				
	B ↓ 75				

stony →

A	TEXTURE	SIL				
	COURSE FRAGMENTS	none				
B	TEXTURE	L				
	COURSE FRAGMENTS	5%				
C	TEXTURE					
	COURSE FRAGMENTS					
	EFFECTIVE TEXTURE	L				
	SURFACE STONINESS	2				
	SURFACE ROCKINESS	0				

DEPTH TO / OF					
MOTTLES	999				
GLEYS	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	0				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	2				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST	SITE: <i>Sutherland Solar Project</i>
	POLYGON:
	DATE: <i>July 23 2014</i>
	SURVEYOR(S): <i>T. R. J. S. L. B.</i>

16017

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
 ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COL.
	1	2	3	4	
ACERAS	A	D			
PRUNSER	O	O			
FAGUGRA	O	O			
CORNALT		O			
SMILNER			R		

SPECIES CODE	LAYER				COL.
	1	2	3	4	
blor, lych				A	
ATHYFIL				O	
DRYDIN				O	
CIRCLUT				O-A	
maidehairten				O	
GERAROS				O	
JACKINBIT				O	
IMPACAP				R	
ACTAPAC				R	
Carex plantaginifolia				O	
MAITSIK				R	
red trillium				R	
ASARCAN				R	
CIRCLUT				O	
VELBUTH				R	
CAMPORAP				R	
GALETET				R	
AGRIGRY				R	
Viola sp				O	
MAIAPAC				R	
ACTARUB				R	
Carex acutata					

→ colour + ratio

GPS 343 - 6.1m DBH - 4cm diameter
 GPS 344 - 6.1m DBH 1cm

ELC MANAGEMENT / DISTURBANCE	SITE:				
	POLYGON:				
	DATE:				
	SURVEYOR(S):				
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE	SITE:	
	POLYGON:	
	DATE:	
	SURVEYOR(S):	
START TIME:	END TIME:	

TEMP (°C): 20	CLOUD (10th): 100	WIND: 3	PRECIPITATION: light rain
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:			
VERNAL POOLS		✓	SNAGS
HIBERNACULA		✓	FALLEN LOGS

SPECIES LIST:										
TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#	
B	REVI	VO		1						
B	EAWD	VO		1						
B	GTBL	VO		1						

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT

SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY

A = ANXIETY BEHAVIOUR

D = DISPLAY

N = NEST BUILDING

P = PAIR

V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION

NE = EGGS

AE = NEST ENTRY

NU = USED NEST

NY = YOUNG

FY = FLEDGED YOUNG

FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED

DP = DISTINCTIVE PARTS

TK = TRACKS

SI = OTHER SIGNS (specify)

VO = VOCALIZATION

HO = HOUSE/DEN

FE = FEEDING EVIDENCE

CA = CARCASS

FY = EGGS OR YOUNG

SC = SCAT



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
- Provincially Significant Wetland Evaluated
- Non-Provincially Significant Wetland Evaluated
- Unevaluated Wetland
- Woodland**
- Woodland
- Area of Natural & Scientific Interest (ANSI)**
- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI
- Natural Heritage System**
- Greenbelt Plan (Natural Heritage System)
- Niagara Escarpment Plan (Escarpment Natural)
- Niagara Escarpment Plan (Escarpment Protection)
- Oak Ridges Moraine Conservation Plan (Natural Core Area)
- Oak Ridges Moraine Conservation Plan (Natural Linkage Area)



Scale: 1 : 9,028



This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources (OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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ELC SOILS ONTARIO	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

Slope							UTM				
P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING	
1	A	S	3	2	NW	4	compd	C	17	519443	4881822
2											
3											
4											
5											

CWS
267

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A ↓ 1/4 cu B stony → 63 cu				

A	TEXTURE	L				
	COURSE FRAGMENTS	none				
B	TEXTURE	f-s L				
	COURSE FRAGMENTS	<5%, 2mm				
C	TEXTURE					
	COURSE FRAGMENTS					
	EFFECTIVE TEXTURE	f-s L				
	SURFACE STONINESS	0				
	SURFACE ROCKINESS	0				

DEPTH TO / OF					
MOTTLES	999				
GLEYS	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	0				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	2				
SOIL SURVEY MAP					
LEGEND CLASS					

cm b apple.

ELC PLANT SPECIES LIST	SITE: Santiago Salas Property 13 (formal) 10
	POLYGON:
	DATE: June 19, 2014
	SURVEYOR(S): LLB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
 ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COL.
	1	2	3	4	
MALVUM		O			
ACERAS	O	O			
PRUNSER	R	O			
THUSOC			L		
ULMAME		RO			
PINURES		R			
VITIRIP				O-A	
PRUNVIR				O-A	
Crataegus sp.		O	O		
Autumnus Div			O		
CORNALT			R		
Amelanchier sp.			R-E		
VIBULEN			R		
CLEMVIR				R	
Malus sp.				R	

SPECIES CODE	LAYER				COL.
	1	2	3	4	
CHRYLCO				O	
BROMINE				O-A	
ERIGANN				R	
PLANLAN				O	
ASUSYR				R	
Waldersumpson				R	
FRANVIR				O	
DACTALO				O-A	
HIERPLO				O	
PLANLAN				O	
HIERPRA				R	
DAUCCAR				R	
Lid basil				R	
RANUACR				R	
TRAGPRA				R	
POACOMP				O	
TRIFPRA				R	

ELC MANAGEMENT / DISTURBANCE		SITE:			
		POLYGON:			
		DATE:			
		SURVEYOR(S):			
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE		SITE: Southgate Solar Property 13 (formerly 10)							
		POLYGON:							
		DATE: Jun 19 2014							
		SURVEYOR(S): RLB							
		START TIME: 1:50		END TIME:					
TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:						
CONDITIONS:									
POTENTIAL WILDLIFE HABITAT:									
VERNAL POOLS			SNAGS						
HIBERNACULA			FALLEN LOGS						
SPECIES LIST:									
TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	LCFL	VO		*					
B	LAOR	VO		*					
B	AMFO	VO		**					
B	BCCH	VO		*					
B	WBU	VO		*					
L	northern crocod	OB		*					

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT

SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY

A = ANXIETY BEHAVIOUR

D = DISPLAY
N = NEST BUILDING

P = PAIR
V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION

NE = EGGS

AE = NEST ENTRY

NU = USED NEST
NY = YOUNG

FY = FLEDGED YOUNG
FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED

DP = DISTINCTIVE PARTS

TK = TRACKS

SI = OTHER SIGNS (specify)

VO = VOCALIZATION
HO = HOUSE/DEN
FE = FEEDING EVIDENCE

CA = CARCASS
FY = EGGS OR YOUNG
SC = SCAT

ELC SOILS ONTARIO	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

		Slope			UTM					
P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1	A	35	5	-	-	Complex	a	17	519355	4991819
2										
3										
4										
5										

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 23cm				
	B ₁ 44cm				

A	TEXTURE	SIL			
	COURSE FRAGMENTS	none			
B	TEXTURE	FSL			
	COURSE FRAGMENTS	5%			
C	TEXTURE				
	COURSE FRAGMENTS				
	EFFECTIVE TEXTURE	FSL			
	SURFACE STONINESS	0			
	SURFACE ROCKINESS	0			

DEPTH TO / OF					
MOTTLES	35				
GLEYS	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	0				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	5				

SOIL SURVEY MAP					
LEGEND CLASS					

stony →

CDS
268

non-unique
cont. app.

ELC PLANT SPECIES LIST	SITE: <i>Soilless Solar Property 13</i>
	POLYGON: <i>2</i>
	DATE: <i>June 19 2014</i>
	SURVEYOR(S): <i>LLB</i>

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
 ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COL.
	1	2	3	4	
POAUBAL	R				
ALCERSAS	R				
MALUPUM	R				
ULMUAME			R		
SALIDIS				R	
Cratogeomys sp.			R		
Melospiza sp.			R		
CORNSTO				R	

SPECIES CODE	LAYER				COL.
	1	2	3	4	
BROMINE				A	
PHALARU				A	
POA PRAT				O	
CHEYLAEU				O	
SILVWAEU				R	
Field hawkweed				R	
Carex blanda				R	
RANUACK				R	
Carex flava				R	
SOLIRUA				R	
FRAGVUR				O	
DAUCCAR				R	
ACHIMIL				R	
DACTELO				O	
Field pussy toes				R	
Wild basil				R	
VICICRA				O	
Asclepias				R	
EQUINYE				R	
Solidago sp.				O	

likely
Canada

(formal)
60

formerly 10

ELC MANAGEMENT / DISTURBANCE	SITE:				
	POLYGON:				
	DATE:				
	SURVEYOR(S):				
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE	SITE: Southeast Solar Property 15	
	POLYGON: 2	
	DATE: June 19 2014	
	SURVEYOR(S): RLB	
START TIME: 12:50		END TIME: 13:37

TEMP (°C): 20	CLOUD (10th): 20	WIND: 2	PRECIPITATION: none
---------------	------------------	---------	---------------------

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

<input checked="" type="checkbox"/> VERNAL POOLS - 2 small permanent ponds	SNAGS
HIBERNACULA	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
H	CWRFL	OB	several in pond						
B	CUCKOO	OB	flown to thicket						
B	RLWHL	OB							

FAUNAL TYPE CODES (TY):
 B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):
 BREEDING BIRD - POSSIBLE:
 SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
 T = TERRITORY D = DISPLAY P = PAIR
 A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
 DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
 NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
 AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
 OB = OBSERVED VO = VOCALIZATION CA = CARCASS
 DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
 TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
 SI = OTHER SIGNS (specify)

ELC MANAGEMENT / DISTURBANCE	SITE:				
	POLYGON:				
	DATE:				
	SURVEYOR(S):				
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE	SITE: Southgate Solar Property 13	
	POLYGON: 3	
	DATE: Jun 19 2014	
	SURVEYOR(S): JCLB	
START TIME: 13:45	END TIME:	

TEMP (°C): 20	CLOUD (10th): 20	WIND: 3	PRECIPITATION: none
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

<input checked="" type="checkbox"/> WETLAND POOLS	<input checked="" type="checkbox"/> SNAGS
<input checked="" type="checkbox"/> HIBERNACULA potential pile of logs w/ side of road	<input checked="" type="checkbox"/> FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	SOSP	VO		-					
B	KLJBL	DB	several						
B	CDYE	VO		-					
B	LJAVI	VO		-					
H	GRFR	VO		-					
B	COGR	VO							
B	EANI	VO							
B	BAOP	VO							
B	BCH	VO							

FAUNAL TYPE CODES (TY):
 B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):
 BREEDING BIRD - POSSIBLE:
 SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
 T = TERRITORY D = DISPLAY P = PAIR
 A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
 DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
 NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
 AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
 OB = OBSERVED VO = VOCALIZATION CA = CARCASS
 DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
 TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
 SI = OTHER SIGNS (specify)

Formally 10

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: <i>Sustainable Solar Property 3</i>	POLYGON: <i>4</i>	
	SURVEYOR(S): <i>PLB</i>	DATE: <i>June 19 2014</i>	TIME: start <i>15:00</i> finish <i>16:00</i>
	UTMZ:	UTME:	UTMN:
	POLYGON DESCRIPTION		

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL	<input type="checkbox"/> ORGANIC	<input type="checkbox"/> LACUSTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANKTON	<input type="checkbox"/> LAKE
<input type="checkbox"/> WETLAND	<input type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE	<input type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> POND
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> PARENT MIN.	<input type="checkbox"/> BOTTOMLAND		<input type="checkbox"/> FLOATING-LVD.	<input type="checkbox"/> RIVER
	<input type="checkbox"/> ACIDIC BEDRK.	<input type="checkbox"/> TERRACE		<input type="checkbox"/> GRAMINOID	<input type="checkbox"/> STREAM
	<input type="checkbox"/> BASIC BEDRK.	<input type="checkbox"/> VALLEY SLOPE		<input type="checkbox"/> FORB	<input type="checkbox"/> MARSH
	<input type="checkbox"/> CARB. BEDRK.	<input type="checkbox"/> TABLELAND		<input type="checkbox"/> LICHEN	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> ROLL UPLAND		<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> FEN
		<input type="checkbox"/> CLIFF		<input type="checkbox"/> DECIDUOUS	<input type="checkbox"/> BOG
		<input type="checkbox"/> TALUS		<input type="checkbox"/> CONIFEROUS	<input type="checkbox"/> BARREN MEADOW
		<input type="checkbox"/> CREVICE / CAVE		<input type="checkbox"/> MIXED	<input type="checkbox"/> PRAIRIE
		<input type="checkbox"/> ALVAR			<input type="checkbox"/> THICKET
		<input type="checkbox"/> ROCKLAND	<input type="checkbox"/> COVER		<input type="checkbox"/> SAVANNAH
		<input type="checkbox"/> BEACH / BAR	<input type="checkbox"/> OPEN		<input type="checkbox"/> WOODLAND
		<input type="checkbox"/> SAND DUNE	<input type="checkbox"/> SHRUB		<input type="checkbox"/> FOREST
		<input type="checkbox"/> BLUFF	<input type="checkbox"/> FREED		<input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	24	4	<i>ALER 5/5 PRUN 5/12 FRAX 1/1</i>
2 SUB-CANOPY			
3 UNDERSTOREY			
4 GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
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STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
-----------------	------	---------	---------	------

DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50
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ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	PIIONEER	YOUNG	MID-AGE	<input checked="" type="checkbox"/> MATURE	OLD GROWTH
------------	----------	-------	---------	--	------------

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS:	(cm)	
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	(cm)	

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	ELC CODE
COMMUNITY SERIES:	
ECOSITE:	
VEGETATION TYPE:	<i>Fresh-Moist Sugar maple Hardwood Deciduous forest F00m6-5</i>
INCLUSION	
COMPLEX	

Notes:

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

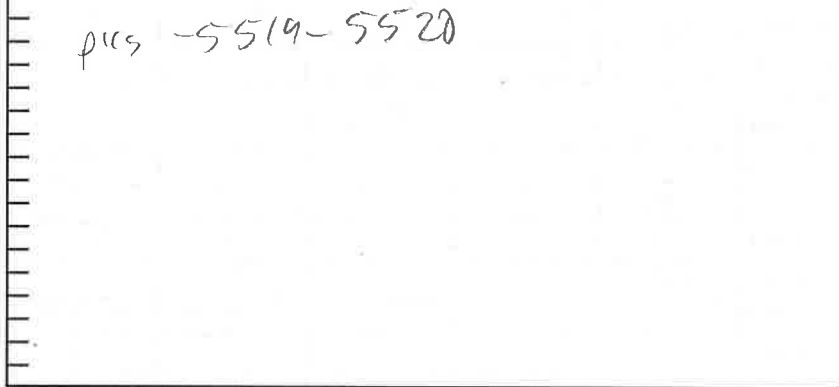
TREE TALLY BY SPECIES:

SPECIES	PRISM FACTOR					TOTAL	REL. AVG
	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5		
<i>PRUN 5/12</i>	<i>2</i>						
<i>FRAX 1/1</i>	<i>1</i>						
<i>ALER 5/5</i>	<i>4</i>						
TOTAL						100	
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

--

COMMUNITY PROFILE DIAGRAM



Notes:

Site: Southgate Solar Property 13 Observer (s): RLB Date: June 19 2014

Wetland 1
is ELL
Community
3

Field No: 1 Wetland Type: Isolated Site Type: S Dominant Form: H
 % Open Water: 40% Water Depth (cm): 50cm Depth of Organics (cm): 30cm
 Soil: A Oh > 30cm fine sand > 90cm Depth to Mottles (cm): 0 Gley (cm): 0
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species³)
 h POITHE¹
 c _____
 dc, dh, ds _____
 ts _____
 ls COANSTO² RHAMCAT³
 gc ONDSEN¹ EQUINIV² (MPACAP²
 ne PHALARU Cerec crinita²
 be _____
 re _____
 ff LEMNIN²
 f _____
 su _____
 m _____
 Rare Species (Local, Regional, Provincial): pics 5504-5507 Wildlife Notes:

Wetland 2
is MAM
inclusion
of ELL
Community
3

Field No: 2 Wetland Type: Isolated Site Type: M Dominant Form: :
 % Open Water: none Water Depth (cm): 0 Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species³)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____
 Rare Species (Local, Regional, Provincial): _____ Wildlife Notes:

Site: Southgate Solar Property 13

Observer (s): RLB

Date: June 19 2014

Wetland
3
is dead swamp
beside
poplar
swamp
ELL
(comm. 3)

Field No: 3 Wetland Type: Isolated Site Type: S Dominant Form: dh
 % Open Water: 50% Water Depth (cm): 50cm Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, (dh), ds POPPAR
 (ts) Salix sp.
 ls _____
 gc _____
 ne _____
 be _____
 re _____
 ff LEMNIN?
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

Field No: _____ Wetland Type: _____ Site Type: _____ Dominant Form: _____
 % Open Water: _____ Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

ELC MANAGEMENT / DISTURBANCE	SITE:				
	POLYGON:				
	DATE:				
	SURVEYOR(S):				
DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE	SITE: SG. C, 20, 18, 19	
	POLYGON: 1a/1b	
	DATE: June 26, 14	
	SURVEYOR(S): SWH	
START TIME: 10:09	END TIME: 1520	

TEMP (°C): 28 CLOUD (10th): 30 WIND: 2 PRECIPITATION: none

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

VERNAL POOLS	<input checked="" type="checkbox"/>	SNAGS
HIBERNACULA	<input checked="" type="checkbox"/>	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
H	AMCO	OB							
B	AmcR	VO							
B	wood thrush	VO							

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT

SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY

A = ANXIETY BEHAVIOUR

D = DISPLAY

N = NEST BUILDING

P = PAIR

V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION

NE = EGGS

AE = NEST ENTRY

NU = USED NEST

NY = YOUNG

FY = FLEDGED YOUNG

FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED

DP = DISTINCTIVE PARTS

TK = TRACKS

SI = OTHER SIGNS (specify)

VO = VOCALIZATION

HO = HOUSE/DEN

FE = FEEDING EVIDENCE

CA = CARCASS

FY = EGGS OR YOUNG

SC = SCAT

ELC MANAGEMENT / DISTURBANCE		SITE:				SCORE †
DISTURBANCE / EXTENT		0	1	2	3	
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS		
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT		
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE		
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT		
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT		
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR		
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
NOISE	NONE	SLIGHT	MODERATE	INTENSE		
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
FIRE	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY		
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE		
OTHER	NONE	LIGHT	MODERATE	HEAVY		
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE		

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE		SITE: SG C, 18.119, 20	
POLYGON:		2	
DATE:		Dec. 26.14	
SURVEYOR(S):		JWH	
START TIME:		10:45	END TIME: 11:15

TEMP (°C): 20 CLOUD (10th): 10 WIND: 2 PRECIPITATION: none

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

VERNAL POOLS	SNAGS
HIBERNACULA	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
	SOSP	VO							

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT

SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY

A = ANXIETY BEHAVIOUR

D = DISPLAY

N = NEST BUILDING

P = PAIR

V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION

NE = EGGS

AE = NEST ENTRY

NU = USED NEST

NY = YOUNG

FY = FLEDGED YOUNG

FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED

DP = DISTINCTIVE PARTS

TK = TRACKS

SI = OTHER SIGNS (specify)

VO = VOCALIZATION

HO = HOUSE/DEN

FE = FEEDING EVIDENCE

CA = CARCASS

FY = EGGS OR YOUNG

SC = SCAT

1/4/93

Site: 56 Popery

Observer(s): Jonathan Harris Date: Dec 26.14

5

Field No: M1 Wetland Type: Marsh Site Type: P Dominant Form: ne

% Open Water: 5-10 Water Depth (cm): ~50cm Depth of Organics (cm): 20cm

Soil: A sandy loam Depth to Mottles (cm): _____ Gley (cm): 20cm
B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage: Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

h _____
c _____

dc, dh, ds _____

ts _____

ls _____

gc sensitive fern²

ne Phalaris, scirpes, carex¹

be water smart weed², water plantain^P

re _____

ff _____

f _____

su _____

m _____

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
WFR
GRFR
pics -
292/293.

Field No: M2 Wetland Type: Marsh Site Type: PI Dominant Form: : NE

% Open Water: 5 Water Depth (cm): ~30cm Depth of Organics (cm): 20

Soil: A sandy loam Depth to Mottles (cm): _____ Gley (cm): 20
B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage: Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

h _____

c _____

dc, dh, ds _____

ts _____

ls _____

gc _____

ne carex sp², Phalaris^P

be _____

re _____

ff lesser duckweed

f _____

su _____

m _____

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
NLFR
GRFR
pics
294/295

2/3

5/21/9

Site: _____ Observer (s): _____ Date: _____

Field No: S1 Wetland Type: Swamp Site Type: P Dominant Form: C

% Open Water: 5 (circled) Water Depth (cm): _____ Depth of Organics (cm): 1

Soil: A Silty Sand Depth to Mottles (cm): 25 Gley (cm): 999
B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage: Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

(h) Yellow birch, Acer sap

(c) Thuja occ Abic bal

dc, dh, ds _____
ts _____

ls _____

(gc) wood fern, sensitive fern, ostrich fern

ne _____
be _____

re _____
ff _____

f _____
su _____

(m) _____

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

Field No: M3 Wetland Type: Marsh Site Type: I Dominant Form: :RE

% Open Water: 5 Water Depth (cm): >50cm Depth of Organics (cm): _____

Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage: Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

h _____
c _____

dc, dh, ds Maple sp.

ts _____
ls corn stk

(gc) water horse tail^P

(ne) Phalaris^P, Carex^L

be _____

(re) Typha lat, blue flag

(ff) lesser duckweed

f _____
su _____

m _____

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

RWB
GRGR
P.L. 303

richs along the shore, can't get soil comp presumed to be similar to other MAM.

3/3

Site: _____ Observer (s): _____ Date: _____

Field No: M4 Wetland Type: Marsh Site Type: I Dominant Form: NE

% Open Water: 10 Water Depth (cm): 50cm Depth of Organics (cm): ~20cm

Soil: A LVFS Depth to Mottles (cm): _____ Gley (cm): 20cm

B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage: Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

h _____

c _____

dc, dh, ds _____

ts _____

ls _____

gc _____

(ne) Phalaris¹

be _____

re _____

ff _____

(f) yellow pond lily

su _____

(m) _____

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

GRFR

PIC-304

Field No: M5 Wetland Type: Marsh Site Type: I Dominant Form: NE

% Open Water: 5 Water Depth (cm): >50 Depth of Organics (cm): ~20

Soil: A LVFS Depth to Mottles (cm): _____ Gley (cm): 20

B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage: Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

h _____

c _____

dc, dh, ds _____

ts _____

ls _____

gc _____

(ne) Phalaris, carex^P

be _____

(e) blue flag^P

ff _____

(f) water smartweed^P

su _____

m _____

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

GRFR

PIC-305

Bn tree
0521082 4883865

Site: 56 Property 18

Observer (s): DWH

Date: June 27, 14

Field No: 9452 Wetland Type: Swamp Site Type: I Dominant Form: h

% Open Water: 30 Water Depth (cm): >50cm Depth of Organics (cm): ~10

Soil: A w/e Depth to Mottles (cm): 999 Gley (cm): 999

B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage:

Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

(h) Populare, Alnus^P, Salix²

c

dc, (dh), ds Populare^P

ts red-barked elderberry, corn alt¹

(s) Cornst¹, W. Trip²

(gc) sensitive fern¹, bittersweet nightshade²

ne Carex sp.

be

re

(ff) Lesser Duckweed²

f

su

(m)

Rare Species (Local, Regional, Provincial):

keep hitting rock at bottom, w/o soil auger.

Wildlife Notes:

RWBL
P.L. 320

Field No: _____ Wetland Type: _____ Site Type: _____ Dominant Form: _____

% Open Water: _____ Water Depth (cm): _____ Depth of Organics (cm): _____

Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____

B _____ Depth to Mottles (cm): _____ Gley (cm): _____

Presence of Seepage:

Presence of Iron Precipitates:

Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)

h

c

dc, dh, ds

ts

ls

gc

ne

be

re

ff

f

su

m

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

Site: Southgate Solar

Observer (s): RLB

Date: Sept 12 2014

Field No: _____ Wetland Type: Palustrine Site Type: M Dominant Form: Np
 % Open Water: 0 Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A Mire Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc ASTEPUN², ASTELAN², SOLIRUC, EUTHGRA, LOSEKAL, Common Winesap, Silvered
 ne Juncus sp.¹, Eleocharis sp.², Carex flava², Canada blue jay², Scurati, P. mixed Grass.
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____
 Rare Species (Local, Regional, Provincial): pic 6845 Wildlife Notes:

Small Mixed Meadow Marsh on property

Silvered mixed Grass

Field No: _____ Wetland Type: _____ Site Type: _____ Dominant Form: _____
 % Open Water: _____ Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____
 Rare Species (Local, Regional, Provincial): _____ Wildlife Notes:

Site: Southgate Sole Property 12-13 Observer (s): RLB Date: Sept 12 2014

reed canopy grass Meadow Marsh on N edge of property 12 x 13

reed canopy grass Meadow Marsh in middle of property 13

Field No: _____ Wetland Type: Isolated Site Type: M Dominant Form: Ne
 % Open Water: None Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts COLNOSTO², LUCUNA^P
 ls _____
 gc ONDENSEN^P, SILADUL^P
 (ne) PHALARU^P, Woolgrass^P
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial): pic 6867 Wildlife Notes:

Field No: _____ Wetland Type: Isolated Site Type: M Dominant Form: Ne
 % Open Water: 10% Water Depth (cm): 10cm Depth of Organics (cm): _____
 Soil: A mineral Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h POPULUS^P
 c _____
 dc, dh, ds _____
 (ts) SALICER², POPULUS^P, SALICET^P, SALICEB^P
 ls _____
 gc BIOCCER^P, EURYMAC^P, ASTERON^P
 (ne) PHALARU^P, Woolgrass^P
 be _____
 re TYPHLAT^P PHRAVUS^P
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial): pics 6892-6893, 6894 Wildlife Notes: CRINE

Site: Southern Solar Observer (s): RLB Date: Sept 12 2014

Small
Mixed
Meadow
Marsh
on
Property
19

Field No: _____ Wetland Type: isolated Site Type: M Dominant Form: gc
 % Open Water: _____ Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A Miaval Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc SOLLRUG EUPANAC EUTHORA ASTELAT
 ne SCIRATR Carex sp
 be _____
 re TYPHLAT
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial): _____ Wildlife Notes: _____
pics 6922-6927

Field No: _____ Wetland Type: _____ Site Type: _____ Dominant Form: _____
 % Open Water: _____ Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____

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

Site: Southgate Solar Property 12 Observer (s): PLS Date: July 4 2014

Wetland
1 is
same as
ELL
community
2

Field No: 1 Wetland Type: Palustrine Site Type: S Dominant Form: C
 % Open Water: <10% Water Depth (cm): 20cm Depth of Organics (cm): 120
 Soil: A Oh → 120 Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 (h) BETULA & ALNUS²
 (c) THUS¹ TSUGA² PICEA²
 dc, dh, ds _____
 ts _____
 ls _____
 (gc) CALYPTA² IMBICAP² MITENUS² wild sarsaparilla²
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 (m) _____

Rare Species (Local, Regional, Provincial): pics 5703-5705 Wildlife Notes: _____

Field No: _____ Wetland Type: _____ Site Type: _____ Dominant Form: _____
 % Open Water: _____ Water Depth (cm): _____ Depth of Organics (cm): _____
 Soil: A _____ Depth to Mottles (cm): _____ Gley (cm): _____
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc _____
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____

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

Site: Southgate Solar Property II Observer (s): RLS Date: July 23 2014

Wetland
1 is
ELC
community
1

Field No: 1 Wetland Type: Palustrine Site Type: S Dominant Form: C
 % Open Water: none Water Depth (cm): 0 Depth of Organics (cm): 23
 Soil: A Oh → 23cm S1S → 27cm Depth to Mottles (cm): 0 Gley (cm): 0
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h) ACERUS² FRAXIN² POPULUS
 c) THUJOC¹ ABIEBAL¹ LARICAR² TSUGCAN^P
 dc, dh, ds _____
 ts _____
 ls PHAMALN^P
 gc) MAIACAN² Crested shrub fern^P CALT PAL² wild sarsaparilla² Marsh fern²
 ne _____
 be _____
 re _____
 ff _____
 f _____
 su _____
 m) _____

Rare Species (Local, Regional, Provincial): pics 6010-6011

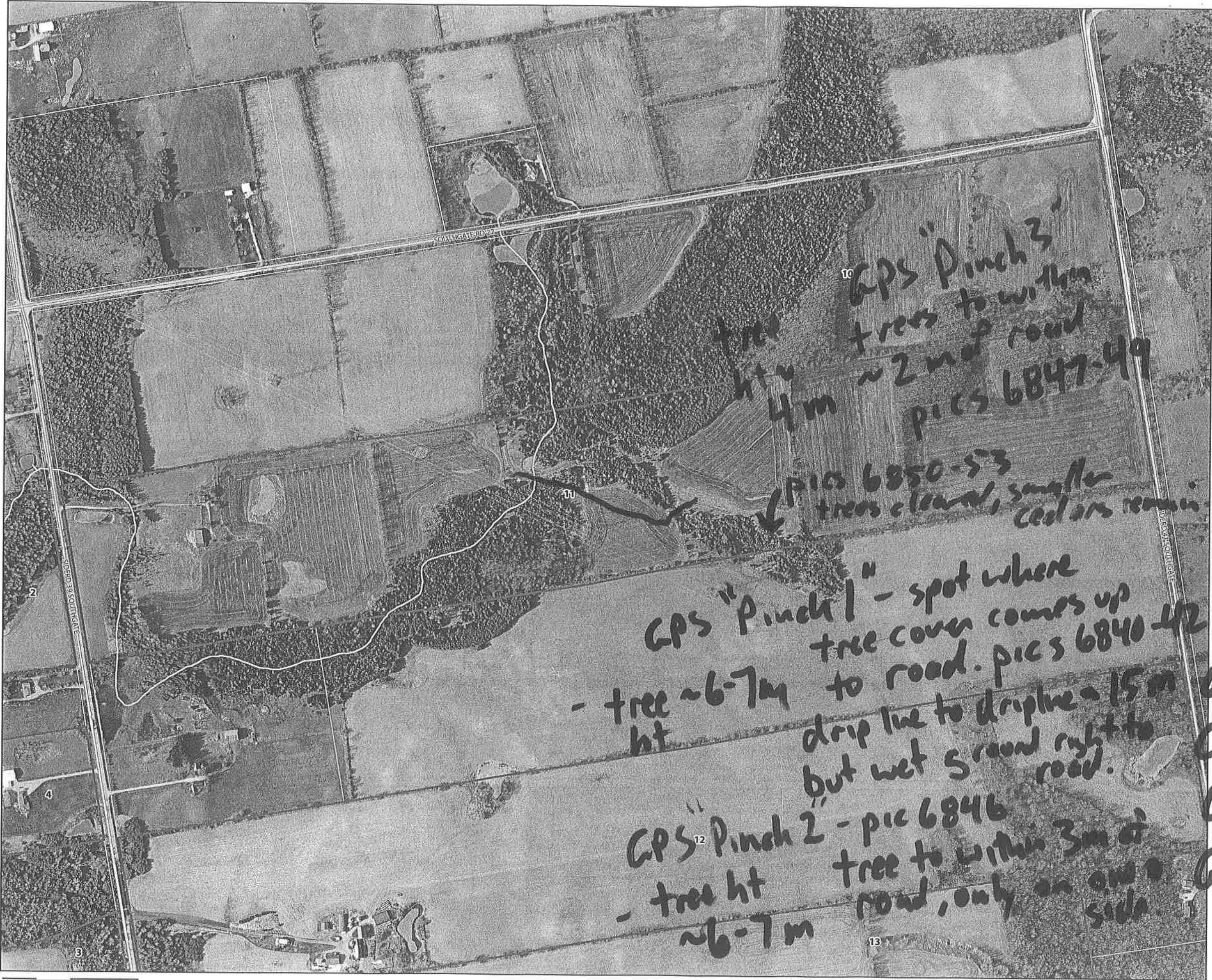
Wildlife Notes:

Wetland
2 is
ELC
community
2

Field No: 2 Wetland Type: Palustrine Site Type: M Dominant Form: : ne
 % Open Water: < 5% Water Depth (cm): 10 cm Depth of Organics (cm): 24 cm
 Soil: A Oh → 24cm S1S → 27cm Depth to Mottles (cm): 0 Gley (cm): 0
 B _____ Depth to Mottles (cm): _____ Gley (cm): _____
 Presence of Seepage: Presence of Iron Precipitates:
 Forms % (Circle those ≥25%) Species (dominant species¹, secondary species², present species^P)
 h _____
 c _____
 dc, dh, ds _____
 ts _____
 ls _____
 gc) Silverweed² water smartweed² IMPACAP² DNOC SEN²
 ne) Canada blue joint PINELARU¹
 be _____
 re _____
 ff _____
 f _____
 su _____
 m _____

Rare Species (Local, Regional, Provincial): pics 6017 - 6018

Wildlife Notes:



Road truck
GPS'd width 5m.

SOUTHGATE SOLAR PROJECT

Hydro line clearing

INITIAL CONSTRAINTS
Property 11 ~ 60m

- low trees some
areas trees removed.

- Watercourse
- Leased Property
- Possible Leased Property
- Parcel Boundary
- Water Body

GPS 460 → pic 6820 East

GPS 461 → pics 6821-22
East.

GPS 462 → pics 6823-25
East

GPS Clvt 1 → pics 6826-27

GPS 463 - pics 6828-30

GPS 464 - pics 6831-33

GPS 465 - pics 6834-36

GPS Clvt 2 - pics 6837-39

GPS "Pinch 3"
trees to within
~ 2m of road
pics 6847-49
tree ht ~ 4m

pics 6850-53
trees cleared, smaller
cedars remain

GPS "Pinch 1" - spot where
tree cover comes up
to road. pics 6840-42
- tree ~ 6-7m ht
drip line to dripline ~ 15m
but wet ground right to
road.

GPS "Pinch 2" - pic 6846
- tree ht ~ 6-7m
tree to within 3m of
road, only on one side

MAP DRAWING INFORMATION:
DATA PROVIDED BY: JIP
MAP CREATED BY: JIP
MAP CHECKED BY: JIP
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014

- Layers
 - Southgate_Solar_Property_11_w...
 - tident
 - ACTIVE LOG 015 007
 - ACTIVE LOG 019 006
 - ACTIVE LOG 197; ACTIVE LOG
 - Access_Roads_Cables
 - Feature
 - Cable
 - Access_Road
 - Access Road
 - 149154-02-LAY-1-fenceline.dwg
 - 149154-02-LAY-1-fenceline.d
 - 149154-02-LAY-1-fenceline.d
 - 149154-02-LAY-1-fenceline.d
 - 149154-02-LAY-1-fenceline.d
 - 149154-02-LAY-1-fenceline.d
 - Access_Roads_Cables
 - Focal_Raster_to_Contour selectio
 - 5 m Contour
 - Roads
 - ROAD_CLASS
 - Freeway
 - Highway
 - Arterial Road
 - Collector Road
 - Minor Road
 - utilline
 - Watercourse
 - PERMANENCY
 - Permanent Watercourse
 - Intermittent Watercourse
 - Project_Location
 - Project Location
 - Project_Location_120m_Setback
 - Project Location 120 m Setbac
 - Project_Location_300m_Setback
 - Project Location 300 m Setbac
 - LRO16_selected_PINs_14-9154
 - Parcel Boundary
 - selected_parcel_LRO16_order2074
 -
 - OMAF_Soil
 - Lots_Concessions
 - 210514_ELC
 - 210514_FLIC



Sept 12 2014

Property 11

Hydro line clearing

cleared areas / MAMM3-1
areas

Veg list

MM1 pic 6845

SOLIRUG - 0

Canada bluejoint - 0

ASTELAN - 0

Silverweed - A

ASTEPUN - 0-A

SLIRATR

Fringed brome

TYPHLAT - R

EUTHGRA - 0

LOBEKAL - 0

ELEOCHARIS SP. 0

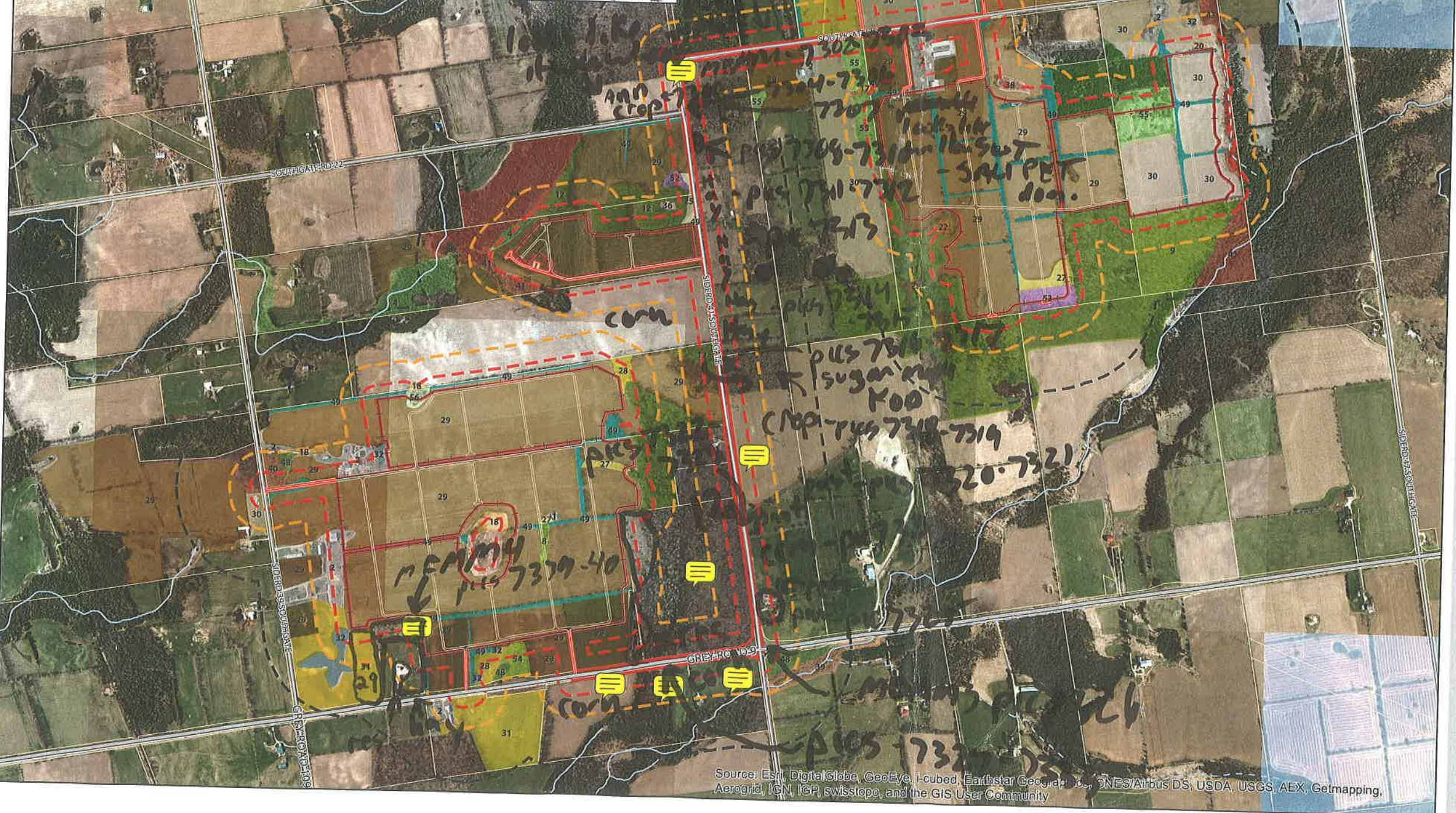
JUNCUS SP. A

BONESET - 0

Carex flava - 0

- | | |
|--|--|
| 1. CVC_4: | 32. OAO: Open |
| 2. CVR_4: Rural Residential | 33. SWC: Coniferous |
| 4. FOCM4-1: Fresh-Moist White Cedar Coniferous | 35. SWDM2-1: Black Ash Mineral Deciduous Swamp/MAMM3-1: Mixed Mineral Meadow Marsh Complex |
| 5. FOCM6-1: Dry-Fresh White Pine Naturalized Coniferous | 36. SWDM2-2: Green Ash Mineral Deciduous Swamp |
| 8. FODM11: Naturalized Deciduous Hedgerow | 37. SWDM4-5: Poplar Mineral Deciduous |
| 9. FODM5-1: Dry-Fresh Sugar Maple Deciduous Forest | 38. SWDM4-5: Poplar Mineral Deciduous Swamp/SWTM2-1: Red-osier Dogwood Deciduous Thicket Swamp Complex |
| 10. FODM5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest | 39. SWM: Mixed Swamp |
| 11. FODM5-9: Dry-Fresh Sugar Maple Hardwood Deciduous Forest | 40. SWM4-1: White Cedar - Hardwood Organic Mixed |
| 12. FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest | 41. SWMM1-1: White Cedar Hardwood Mineral Mixed |
| 17. MAMM1-2: Cattail Graminoid Mineral Meadow | 43. SWMM5-1: Balsam Fir Hardwood Mixed Mineral |
| 18. MAMM1-3: Reed Canary Grass Graminoid Mineral Meadow Marsh | 44. SWMO1-1: White Cedar Hardwood Organic Mixed |
| 20. MAMM3-1: Mixed Mineral Meadow Marsh | 46. SWT3: Willow Mineral Deciduous Thicket |
| 22. MASM1-1: Cattail Mineral Shallow | 48. TAGM1: Coniferous |
| 23. MASM1-14: Reed Canary Grass Mineral Shallow | 49. TAGMS: |
| 24. MASM1-4: Narrow-Leaved Sedge Mineral Shallow | 52. THDM2-1: Hawthorn Deciduous Shrub |
| 25. MEG: Graminoid Meadow | 53. THDM2: Dry-Fresh Deciduous Shrub |
| 27. MEMM3: Dry-Fresh Mixed Meadow | 54. WODM4-3: Dry-Fresh Sugar Maple Deciduous |
| 28. MEMM4: Fresh-Moist Mixed Meadow | 55. WODM4: Dry-Fresh Deciduous |
| 29. OAGM1: Annual Row Crop | 56. WODM5-3: Fresh-Moist Manitoba Maple Deciduous |
| 30. OAGM2: Perennial Cover | |
| 31. OAGM4: Open Pasture | |

*pic 7301
Sugar Maple
FOO*



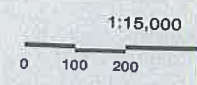
SOUTHGATE SOLAR PROJECT

FIGURE 4 ECOLOGICAL LAND CLASSIFICATION

- Access Road
- Fence
- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary

Sticky Note
20JLP 9/29/2014 4:06 PM

need this all along here
within 50 m- looks mostly
agricultural?



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 9/29/2014

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

ELC SOILS ONTARIO	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

P/A	PP	Dr	Slope				UTM			
			Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1										
2										
3										
4										
5										

SOIL	1	2	3	4	5
TEXTURE x HORIZON					

A	TEXTURE					
	COURSE FRAGMENTS					
B	TEXTURE					
	COURSE FRAGMENTS					
C	TEXTURE					
	COURSE FRAGMENTS					
	EFFECTIVE TEXTURE					
	SURFACE STONINESS					
	SURFACE ROCKINESS					

DEPTH TO / OF	1	2	3	4	5
MOTTLES					
GLEYS					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					

SOIL SURVEY MAP	
LEGEND CLASS	

ELC PLANT SPECIES LIST	SITE: <i>Sawthistle Solar</i>
	POLYGON: <i>M-EMM4 on edge of property</i>
	DATE: <i>Sept 30 2014</i>
	SURVEYOR(S): <i>RLB</i>

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
 ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COL.
	1	2	3	4	
<i>ARCTICUSAS</i>	<i>R</i>				
<i>red raspberry</i>			<i>R</i>		

SPECIES CODE	LAYER				COL.
	1	2	3	4	
<i>SALICAN</i>				<i>O</i>	
<i>PIHALABU</i>				<i>O</i>	
<i>RUBINE</i>				<i>A</i>	
<i>ARCTMUN</i>				<i>R</i>	
<i>DAUCCAL</i>				<i>B</i>	

near SW corner

M EMM4 pics 7339-7340

P. 1 of 2
 Sept 10 2014

Santiago Solan

Property 20 & 21 Hydro Corridor
 & Property 14, 16, 18, 19

Tree ht measurements 16:30 - 20:00

Weather	GPS	PIC
Temp - 20°C	447	6805 - 6806 MEMM
cloud 100%	448	6807 - 6808 MAM - ryan
steady rain	449	6809 - 6810 MEMM
Wind B2-3	450	6811 - 6812 code mem
	451	6813 MEMM
	452	6814 - 6816 MEMM Plan
	453	6817 - 6819 MAM SWIT

Tree heights

Property 19

25m from
 Any line
 measured

GPS
 19DL1
 19CL1

Clim - Rd
 degrees → Left Right %
 bottom # 6 - 11
 top # 34 - 68 % → deg

19DL2
 19CL2

4 - 5
 # 29 + 54

Southgate Solar

P. 2 of 2

Sept 10 2014

Property 13

13 DL1

13 CL1

Bot

Top

Left

20

Right

-7

+37

(east, north view blocked)

CPS stopped

13 DL2

13 CL2 (454)

22 M from 13 DL2

Bot

Top

Left

5

19

Right %

-9

+35

(east, north view blocked)

Property 14

14 DL1 (458)

14 CL1 (459)

Bottom

Top

L

12

+37

R

-3

+73

%

My eye height. 1.73m



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

① - Fresh - Moist Sugar Maple - Hardwood Deciduous Forest. FODM 6-5

② - Fence row TAGMS



Scale: 1 : 9,028



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Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

- White Cedar-Hardwood Organic Mixed Swamp.
- Real Canary Grass Graminoid Mineral Meadow Marsh MAMM1-3
- Fresh-Moist White Cedar Coniferous Forest FOCM4-1
- Fresh-Moist Manitoba Maple Deciduous Woodland WODMS-3
- Coniferous Plantation TAGM1

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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9. Extraction
CVC_4



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

- Poplar Minor Deciduous Swamp SWDM 4-5
- Fresh-Moist Mixed Meadow MEMM 4
- Dry-Fresh Sugar Maple Deciduous Woodland WODM 4-3
- Naturalized Deciduous Hedgerow FODM 11
- Fresh-Moist Sugar Maple-Hardwood Deciduous Forest FODM 6-5
- Dry-Fresh Mixed Meadow MEMM 3
- Meadow Marsh MAM
- Coniferous Plantation TAGM 1



Scale: 1 : 9,028



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Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

1. Fresh-Moist Sugar Maple-Hardwood Deciduous Forest FODM 6-5
2. Mixed Willow ^{Deciduous} Organic Thicket Swamp. SWT02-6
3. Sedge Graminoid Organic Meadow Marsh Inclusion MAN01-6
4. Coniferous Plantation TAGM1

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,028



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6. Dry-Fresh
Deciduous
Shrub Thicket
THDM2

7. Dry-Fresh
White Pine
Naturalized
Coniferous
Plantation
FOCM6-1

8. Dry-Fresh
Deciduous
Woodland
WODM4

1. Dry-Fresh
Sugar Maple -
Hardwood
Deciduous Forest
FODM5-9

2. Ca Hail
Mineral Shallow
Marsh
MASM1-1

3. Reed Canary
Grass Mineral
Shallow Marsh.
MASM1-14

4. Poplar Mineral
Deadlow Swamp
SWDM4-5
with a
Red Osier Dogwood
Mineral Deciduous
Thicket Swamp
SWTM2-1
Complex

5. Dry-Fresh
Mixed Meadow
MEMM3



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
 - Niagara Escarpment Plan (Escarpment Natural)
 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)



Scale: 1 : 9,028



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Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
- Area of Natural & Scientific Interest (ANSI)**
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- Natural Heritage System**
 - Greenbelt Plan (Natural Heritage System)
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 - Oak Ridges Moraine Conservation Plan (Natural Linkage Area)

① Dry-Fresh Sugar Maple
Deadwood Forest
FODMS-1

② Balsam Fir - Hardwood Mixed Mineral Swamp
SLWMS-1

③ Coniferous Plantation
TAAM1



Scale: 1 : 9,028



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8. Reed Canary-
Grass Mineral
Shallow Marsh
MASM1-14

9. Narrow-leaved
Sedge Mineral
Shallow Marsh
MASM1-4

10. Power
Generation
CVI-4
(hydro line
clearing)

1. Dry-Fresh
Sugar Maple -
Hardwood
Deciduous
Forest
FODMS-9

2. Poplar-
Conifer Mixed
Mineral Swamp

3. Mixed Mineral
Meadow Marsh
MAMM3-1

4. Mixed Willow
Organic Deciduous
Thicket Swamp
SWTO2-6

5. Balsam Fir
Hardwood Mixed
Mineral Swamp
SWMMS-1

6. Extraction
CVC-4

7. Dry-Fresh
Mixed Meadow
MEMM3



Legend

- Conservation Reserve
- Provincial Park
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Woodland**
 - Woodland
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 - Greenbelt Plan (Natural Heritage System)
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 - Niagara Escarpment Plan (Escarpment Protection)
 - Oak Ridges Moraine Conservation Plan (Natural Core Area)
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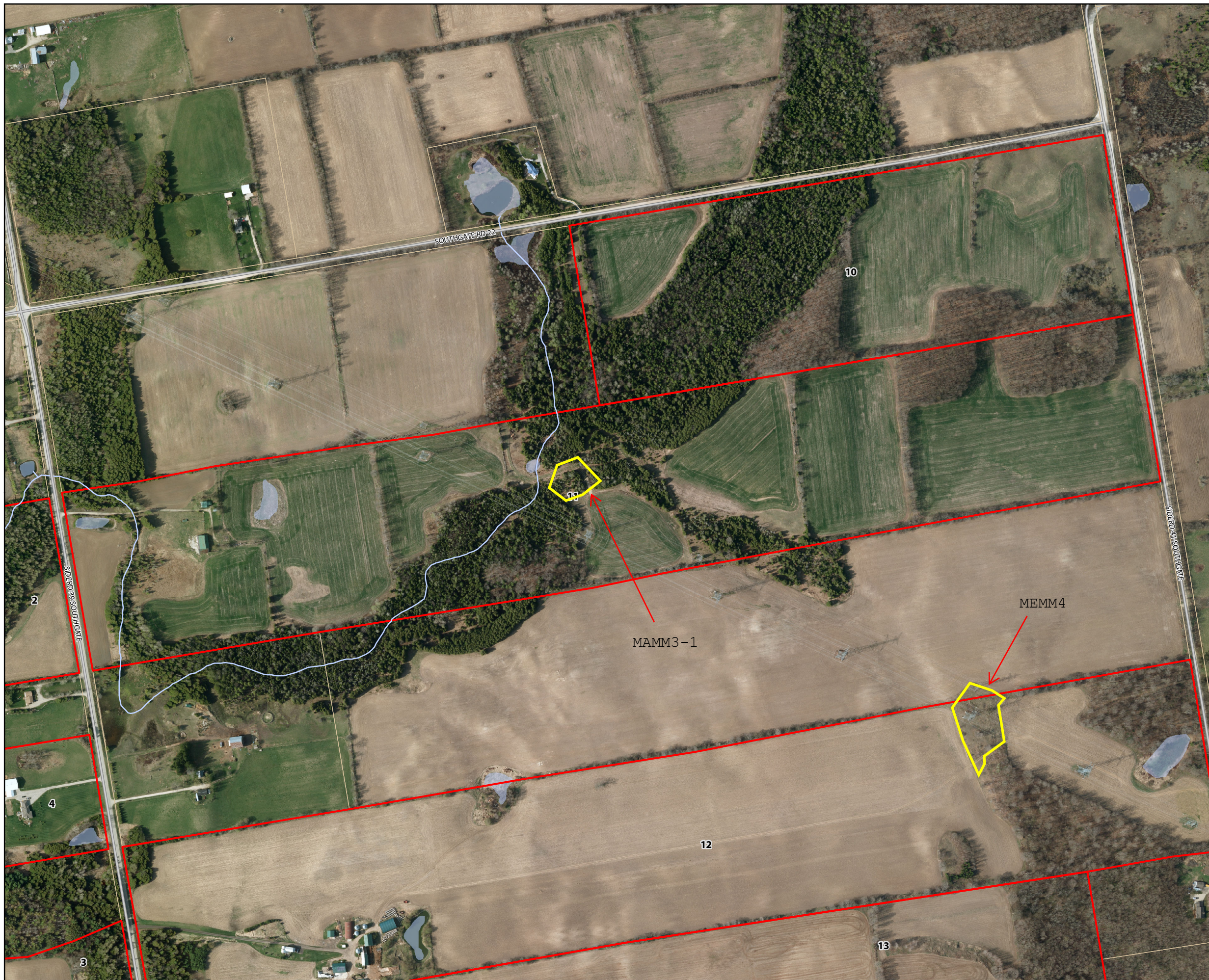
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




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SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 11**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:5,400



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd








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DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 12**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:5,400



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






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SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 19**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:4,400



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DATE: 7/28/2014



FODM6-5

17

9

14

15

16

18






SOUTHGATE RD 22

C

0 50 100 200 m

SOUTHGATE SOLAR PROJECT

INITIAL CONSTRAINTS Property 14

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:4,400



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MAP PROJECTION: NAD 1983 UTM Zone 17N

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




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STATUS: DRAFT
DATE: 7/28/2014



FODM6

SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 10**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:2,800



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




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STATUS: DRAFT
DATE: 7/28/2014



0 50 100 200 m

SOUTHGATE SOLAR PROJECT

INITIAL CONSTRAINTS Property 11

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:5,400



MAP DRAWING INFORMATION:
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MAP PROJECTION: NAD 1983 UTM Zone 17N

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






PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 12**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:5,400



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd








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STATUS: DRAFT
DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 13**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

FODM6-5

SWMM1-1

CVR 4

MEMM4

OAGM2

OAGM1

OAGM2

OAGM1

CVR 4

A

1:4,700



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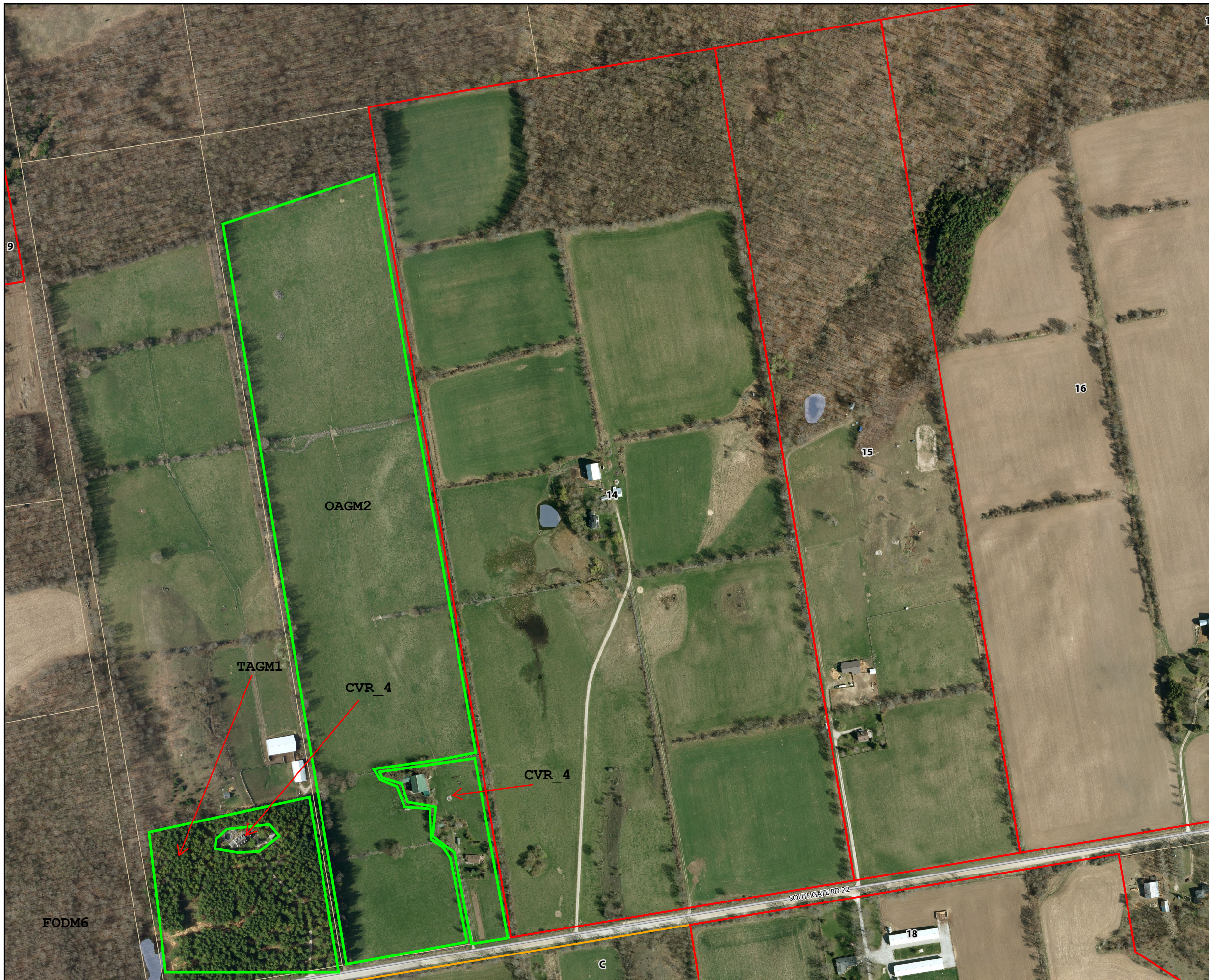
MAP CREATED BY: GM
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MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd








PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014

0 50 100 200 m



SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 14**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:4,400



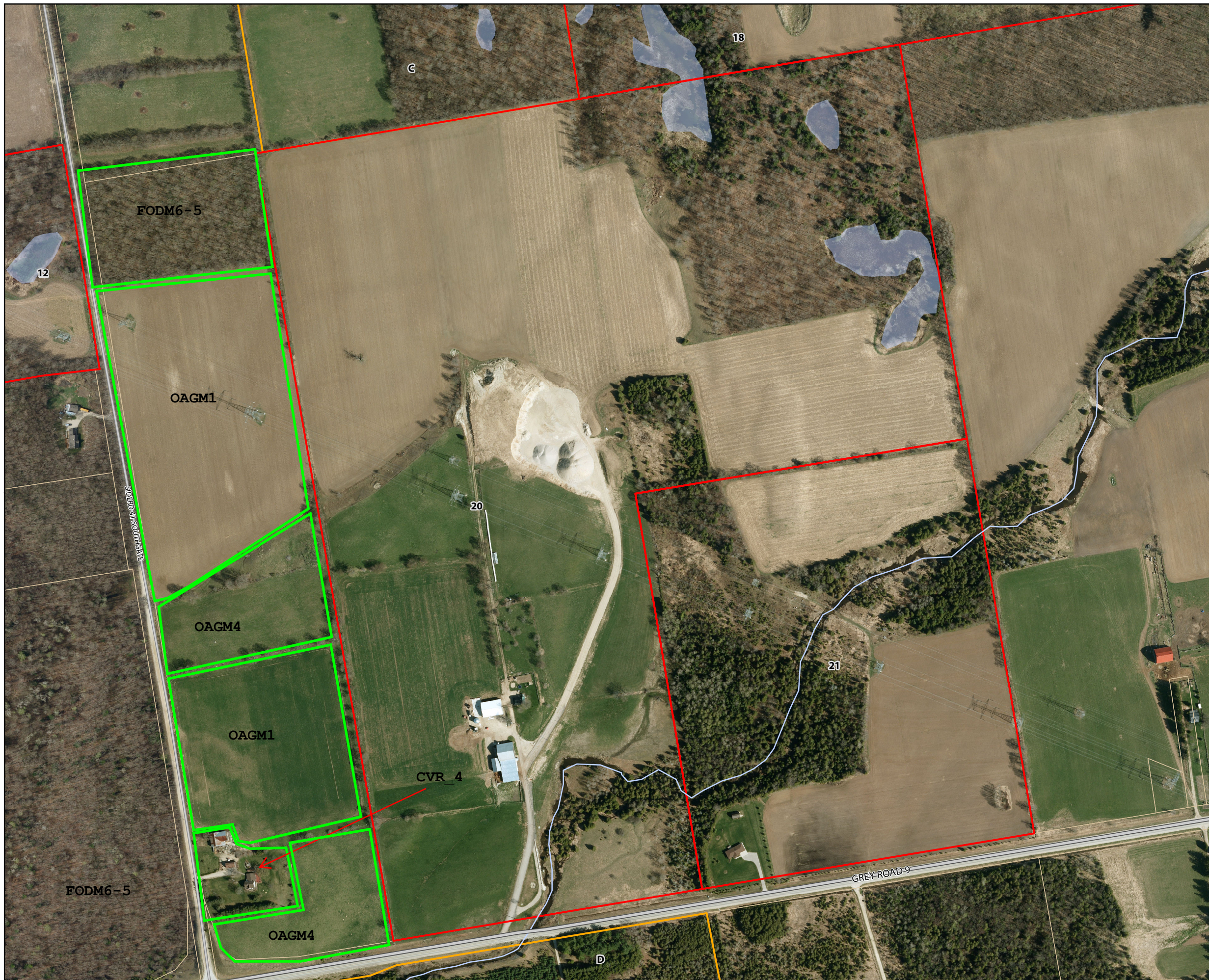
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MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

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






PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

**INITIAL CONSTRAINTS
Property 20**

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:4,600



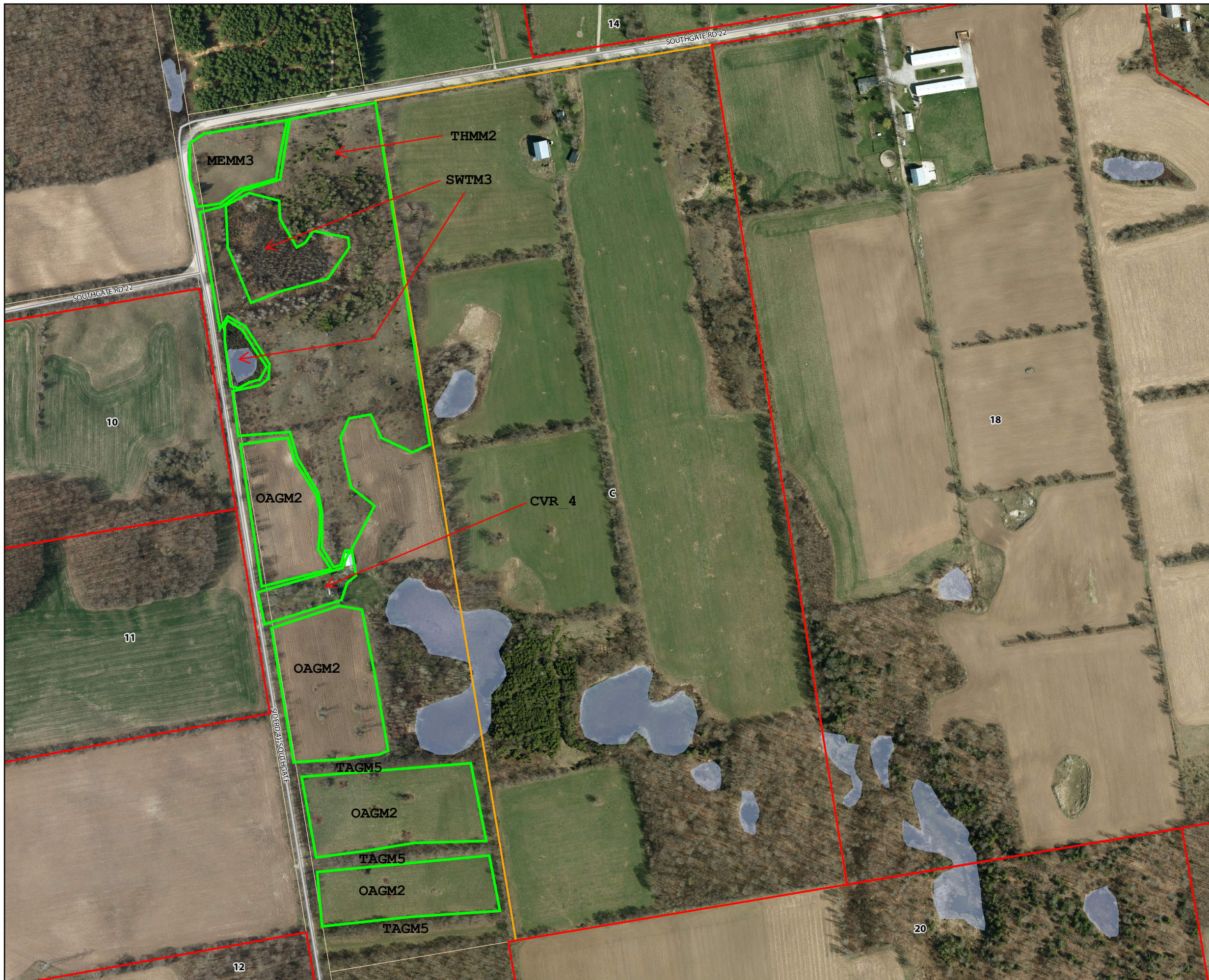
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DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd








PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

INITIAL CONSTRAINTS Property C

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:4,400



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
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MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd








PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014



SOUTHGATE SOLAR PROJECT

INITIAL CONSTRAINTS Property D

-  Watercourse
-  Leased Property
-  Possible Leased Property
-  Parcel Boundary
-  Water Body

1:4,500



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PROJECT: 149154
STATUS: DRAFT
DATE: 7/28/2014

Turtle/colonial bird nesting survey field sheet;

Date: 10-08-14 Observer: DJC

GPS 17T 0519278, 4882274

Temp 10°C

Cloud Cover 100%

Wind 23 Km W/gusts 38 Precipitation Rain/ice pellets

Soil type Top - Organics Bottom sandy loam

Soil depth Top - 4-7" Bottom 20" +

Organics mixed with soil: YES NO

Percent of organics 20%

Sand pile dimensions: Length 25m Width 7m height 2.5m

Distance to waterbody directly adjacent

Observations: Appears to be a healthy wetland. No visible signs of herptiles but all conditions are good for habitat. 2 green herons and one black crowned night heron observed, all having mature plumage. No nests were found during this survey, but there are suitable trees surrounding the wetland for them. This wetland is however located approx 150m west of location marked on map for survey. Location marked on map is an area of large elevation ~~with~~ difference (exposed) 50% gravel, 50% sand, no visible organics mixed in sand

Turtle/colonial bird nesting survey field sheet; Date: 10-08-14 Observer: DJC

GPS 17T 0521157, 4883177

Temp 10°C Cloud Cover 100%

Wind 23 km/h W gusts 32 km/h Precipitation rain

Soil type silt / agregatos

Soil depth N/A

Organics mixed with soil: YES NO

Percent of organics 0-4" = 10% 4"+ less than 5% (more gravel)


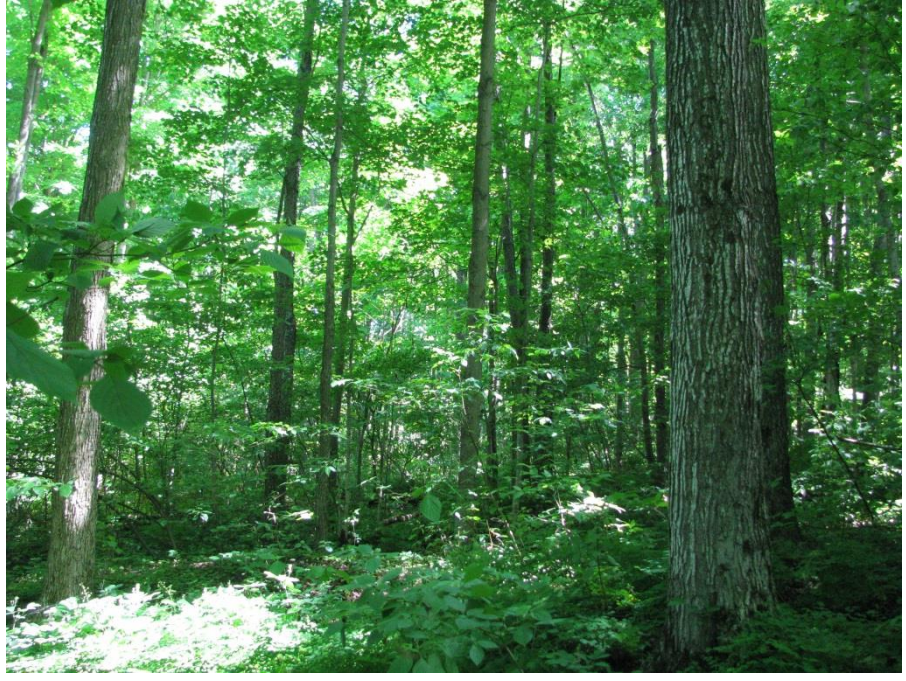
Sand pile dimensions: Length N/A Width N/A



Distance to waterbody N/A



Observations Meadow. No open water, no sign of colonial bird nesting areas. Flushed 1 ruffed grouse





APPENDIX B
Site Photographs



<p>Photo 1</p> <p>June 5, 2014</p> <p>Notes:</p> <p>FODM5-7</p> <p>Dry-Fresh Sugar Maple- Black Cherry Deciduous Forest</p>	
<p>Photo 2</p> <p>June 19, 2014</p> <p>Notes:</p> <p>FODM6-5</p> <p>Fresh-Moist Sugar Maple-Hardwood Deciduous Forest</p>	



<p>Photo 3</p> <p>June 19, 2014</p> <p>Notes:</p> <p>FODM11</p> <p>Naturalized Deciduous Hedgerow</p>	
<p>Photo 4</p> <p>June 27, 2014</p> <p>Notes:</p> <p>FOCM4-1</p> <p>Fresh-Moist White Cedar Coniferous Forest</p>	



<p>Photo 5</p> <p>June 27, 2014</p> <p>Notes:</p> <p>FOCM6-1</p> <p>Dry-Fresh White Pine Naturalized Coniferous Plantation</p>	
<p>Photo 6</p> <p>June 27, 2014</p> <p>Notes:</p> <p>WODM4</p> <p>Dry-Fresh Deciduous Woodland</p>	

<p>Photo 7</p> <p>June 19, 2014</p> <p>Notes:</p> <p>WODM4-3</p> <p>Dry-Fresh Sugar Maple Deciduous Woodland</p>	
<p>Photo 8</p> <p>July 4, 2014</p> <p>Notes:</p> <p>WODM5-3</p> <p>Fresh-Moist Manitoba Maple Deciduous Woodland</p>	

<p>Photo 9</p> <p>June 10, 2014</p> <p>Notes:</p> <p>THDM2-11</p> <p>Hawthorn Deciduous Shrub Thicket</p>	
<p>Photo 10</p> <p>June 26, 2014</p> <p>Notes:</p> <p>THDM2</p> <p>Dry-Fresh Deciduous Shrub Thicket</p>	

<p>Photo 11</p> <p>September 30, 2014</p> <p>Notes:</p> <p>THMM2</p> <p>Fresh-Moist Mixed Thicket</p>	
<p>Photo 12</p> <p>July 23, 2014</p> <p>Notes:</p> <p>SWCO2-2</p> <p>Tamarack Organic Coniferous Swamp</p>	

<p>Photo 13</p> <p>July 4, 2014</p> <p>Notes:</p> <p>SWMO1-1</p> <p>White Cedar-Hardwood Organic Mixed Swamp</p>	
<p>Photo 14</p> <p>June 5, 2014</p> <p>Notes:</p> <p>SWDM2-1/MAMM3-1</p> <p>Black Ash Mineral Deciduous Swamp/Mixed Mineral Meadow Marsh Complex</p>	

<p>Photo 15</p> <p>June 10, 2014</p> <p>Notes:</p> <p>SWDM2-2</p> <p>Green Ash Mineral Deciduous Swamp</p>	 A photograph showing a dense forest with a variety of green trees and undergrowth. A large, light-colored fallen log lies horizontally across the foreground. The background is filled with tall, thin trees and thick foliage.
<p>Photo 16</p> <p>June 19, 2014</p> <p>Notes:</p> <p>SWDM4-5</p> <p>Poplar Mineral Deciduous Swamp</p>	 A photograph of a forest interior. Two large, light-colored tree trunks are prominent in the foreground. The background is filled with dense green vegetation, including tall grasses and other trees. The lighting is bright, suggesting a sunny day.



<p>Photo 17</p> <p>June 27, 2014</p> <p>Notes:</p> <p>SWDM4-5/SWTM2-1</p> <p>Poplar Mineral Deciduous Swamp/ Red- Osier Dogwood Mineral Deciduous Swamp Thicket Complex</p>	
<p>Photo 18</p> <p>July 23, 2014</p> <p>Notes:</p> <p>SWMM1-1</p> <p>White Cedar Hardwood Mineral Mixed Swamp</p>	

Photo 19

July 4, 2014

Notes:

SWMM5-1

Balsam Fir-Hardwood
Mixed Mineral Swamp



Photo 20

June 5, 2014



Notes:



MAMM1-2

Cattail Graminoid
Mineral Meadow Marsh
within pasture on
Property 14.



<p>Photo 21</p> <p>July 4, 2014</p> <p>Notes:</p> <p>MAMM1-3</p> <p>Reed Canary Grass Graminoid Mineral Meadow Marsh</p>	
<p>Photo 22</p> <p>July 4, 2014</p> <p>Notes:</p> <p>MAMM3-1</p> <p>Mixed Mineral Meadow Marsh</p>	

<p>Photo 23</p> <p>June 26, 2014</p> <p>Notes:</p> <p>MASM1-1</p> <p>Cattail Mineral Shallow Marsh</p>	
<p>Photo 24</p> <p>June 26, 2014</p> <p>Notes:</p> <p>MASM1-14</p> <p>Reed Canary Grass Mineral Shallow Marsh</p>	

<p>Photo 25</p> <p>June 26, 2014</p> <p>Notes:</p> <p>MEMM3</p> <p>Dry-Fresh Meadow Mixed</p>	
<p>Photo 26</p> <p>June 19, 2014</p> <p>Notes:</p> <p>MEMM4</p> <p>Fresh-Moist Meadow Mixed</p>	

APPENDIX C

Species



APPENDIX C1

Species Tables

Table C1: Vascular Plant and Bryopyhte Species Identified as Potentially Occurring in the General Area of the Project Location

Scientific Name	Common Name	Conservation Status					Information Source	Observed in Field
		National	Provincial		Coefficient of Conservation	Coefficient of Wetness	NHIC ⁴	
		SARA ¹	ESA, 2007 ²	SRank ³				
VASCULAR PLANTS & BRYOPYHTES								
<i>Lithospermum latifolium</i>	American Gromwell*	---	---	S3	9	5	●	
<i>Elaeagnus umbellata</i>	Autumn Olive	---	---	SE3	0	3		●
<i>Polystichum braunii</i>	Braun's Holly Fern*	---	---	S3	9	5	●	
<i>Valeriana officinalis</i>	Common Valerian	---	---	SE3	0	2		●
<i>Arisaema dracontium</i>	Green Dragon*	SC	SC	S3	9	-3	●	
<i>Erigenia bulbosa</i>	Harbinger-of-Spring*	---	---	S3	9	5	●	
<i>Asplenium scolopendrium var. americanum</i>	Hart's Tongue Fern*	SC	SC	S3	10	5	●	
<i>Potamogeton hillii</i>	Hill's Pondweed*	SC	SC	S2	8	-5	●	
<i>Botrychium rugulosum</i>	Rugalose Grapefern*	---	---	S2	6	5	●	

Scientific Name	Common Name	Conservation Status					Information Source	Observed in Field
		National	Provincial		Coefficient of Conservation	Coefficient of Wetness	NHIC ⁴	
		SARA ¹	ESA, 2007 ²	SRank ³				
<i>Monarda didyma</i>	Scarlet Beebalm*	---	---	S3	8	8	●	
<i>Sphenopholis nitida</i>	Shiny Wedge Grass*	---	---	S1	10	5	●	
<i>Lithospermum parviflorum</i>	Soft-hairy False Gromwell*	---	---	S2	---	---	●	
<i>Arnoglossum plantagineum</i>	Tuberous Indian-Plantain*	---	SC	---	---	---	●	

¹Species at Risk Act; ²Endangered Species Act; ³SRank Code (see below); ⁴MNRF NHIC Database; For all codes, please see **Appendix C2**. ● denotes occurrence record; --- denotes no information, no status or not applicable; * denotes Species of Conservation Concern.

Table C2: Wildlife Species Identified as Potentially Occurring in the General Area of the Project Location

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
BIRDS												
<i>Empidonax alnorum</i>	Alder Flycatcher	---	---	S5B		•						•
<i>Botaurus lentiginosus</i>	American Bittern	---	---	S4B		•						
<i>Anas rubripes</i>	American Black Duck	---	---	S4		•						
<i>Fulica americana</i>	American Coot	---	---	S4B		•						
<i>Corvus brachyrhynchos</i>	American Crow	---	---	S5B		•						•
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B		•						•
<i>Falco sparverius</i>	American Kestrel	---	---	S4		•						
<i>Setophaga ruticilla</i>	American Redstart	---	---	S5B		•						•
<i>Turdus migratorius</i>	American Robin	---	---	S5B		•						•
<i>Anas americana</i>	American Wigeon	---	---	S4		•						
<i>Scolopax minor</i>	American Woodcock	---	---	S4B		•						
<i>Haliaeetus leucocephalus</i>	Bald Eagle*	---	SC	S4B, SZN								
<i>Icterus galbula</i>	Baltimore Oriole	---	---	S4B		•						•
<i>Ceryle alcyon</i>	Belted Kingfisher	---	---	S4B		•						•

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNRF ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Chlidonias niger</i>	Black Tern*	---	SC	S3B	•	•						
<i>Mniotilta varia</i>	Black-and-white Warbler	---	---	S5B		•						•
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	---	---	S5B		•						
<i>Dendroica fusca</i>	Blackburnian Warbler	---	---	S5B		•						
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5		•						•
<i>Nycticorax nycticorax</i>	Black-Crowned Night Heron*	---	---	S3B, S3N		•						
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	---	---	S5B		•						•
<i>Dendroica virens</i>	Black-throated Green Warbler	---	---	S5B		•						•
<i>Poliophtila caerulea</i>	Blue-gray Gnatcatcher	---	---	S4B		•						
<i>Vireo solitarius</i>	Blue-headed Vireo	---	---	S5B		•						
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5		•						•
<i>Anas discors</i>	Blue-winged Teal	---	---	S4		•						
<i>Vermivora pinus</i>	Blue-winged Warbler	---	---	S4B		•						
<i>Buteo platypterus</i>	Broad-winged Hawk	---	---	S5B		•						
<i>Certhia americana</i>	Brown Creeper	---	---	S5B		•						
<i>Toxostoma rufum</i>	Brown Thrasher	---	---	S4B		•						
<i>Molothrus ater</i>	Brown-headed Cowbird	---	---	S4B		•						•

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Branta canadensis</i>	Canada Goose	---	---	S5		•						•
<i>Cardellina canadensis</i>	Canada Warbler*	THR	SC	S4B		•						
<i>Aythya valisineria</i>	Canvasback*	---	---	S1B, S4N		•						
<i>Thryothorus ludovicianus</i>	Carolina Wren	---	---	S4		•						
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B		•						•
<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	---	---	S5B		•						•
<i>Spizella passerina</i>	Chipping Sparrow	---	---	S5B		•						•
<i>Spizella pallida</i>	Clay-coloured Sparrow	---	---	S4B		•						
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	---	---	S4B		•						
<i>Quiscalus quiscula</i>	Common Grackle	---	---	S5B		•						•
<i>Gavia immer</i>	Common Loon	---	---	S5B, S5N		•						
<i>Mergus merganser</i>	Common Merganser	---	---	S5B, S5N		•						
<i>Gallinula chloropus</i>	Common Moorhen	---	---	S4B, SZN		•						
<i>Chordeiles minor</i>	Common Nighthawk*	THR	SC	S4B		•						

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Corvus corax</i>	Common Raven	---	---	S5		•						
<i>Gallinago gallinago</i>	Common Snipe (Wilson's Snipe)	---	---	S5B, SZN		•						•
<i>Geothlypis trichas</i>	Common Yellowthroat	---	---	S5B		•						•
<i>Accipiter cooperii</i>	Cooper's Hawk	---	---	S4B, SZN		•						
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	---	---	S5B		•						
<i>Picoides pubescens</i>	Downy Woodpecker	---	---	S5		•						•
<i>Sialia sialis</i>	Eastern Bluebird	---	---	S5B		•						•
<i>Tyrannus tyrannus</i>	Eastern Kingbird	---	---	S4B		•						•
<i>Sayornis phoebe</i>	Eastern Phoebe	---	---	S5B		•						•
<i>Otus asio</i>	Eastern Screech-owl	---	---	S4		•						
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	---	---	S4B		•						
<i>Contopus virens</i>	Eastern Wood-pewee*	---	SC	S4B		•						•
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA		•						•
<i>Spizella pusilla</i>	Field Sparrow	---	---	S4B		•						•
<i>Anas strepera</i>	Gadwall	---	---	S4B		•						
<i>Regulus satrapa</i>	Golden-crowned Kinglet	---	---	S5B		•						

Scientific Name	Common Name	Conservation Status			Information Source						Observed in Field	
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹		MNR ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	---	---	S4B, SZN		•						•
<i>Dumetella carolinensis</i>	Gray Catbird	---	---	S4B		•						•
<i>Ardea herodias</i>	Great Blue Heron	---	---	S4		•						
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	---	---	S4B		•						•
<i>Casmerodius albus</i>	Great Egret*	---	---	S2B		•						
<i>Bubo virginianus</i>	Great Horned Owl	---	---	S4		•						
<i>Butorides virescens</i>	Green Heron	---	---	S4B		•						
<i>Anas crecca</i>	Green-winged Teal	---	---	S4		•						
<i>Picoides villosus</i>	Hairy Woodpecker	---	---	S5		•						•
<i>Catharus guttatus</i>	Hermit Thrush	---	---	S5B		•						
<i>Larus argentatus</i>	Herring Gull	---	---	S5B, S5N		•						
<i>Lophodytes cucullatus</i>	Hooded Merganser	---	---	S5B, S5N		•						
<i>Wilsonia citrina</i>	Hooded Warbler*	THR	SC	S3B	•							
<i>Eremophila alpestris</i>	Horned Lark	---	---	S5B, SZN		•						

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Carpodacus mexicanus</i>	House Finch	---	---	SNA		•						
<i>Passer domesticus</i>	House Sparrow	---	---	SNA		•						•
<i>Troglodytes aedon</i>	House Wren	---	---	S5B		•						•
<i>Passerina cyanea</i>	Indigo Bunting	---	---	S4B		•						•
<i>Charadrius vociferus</i>	Killdeer	---	---	S5B, S5N		•						•
<i>Empidonax minimus</i>	Least Flycatcher	---	---	S4B		•						
<i>Aythya affinis</i>	Lesser Scaup	---	---	S4		•						
<i>Melospiza lincolnii</i>	Lincoln's Sparrow	---	---	S5B		•						
<i>Asio otus</i>	Long-eared Owl	---	---	S4		•						
<i>Dendroica magnolia</i>	Magnolia Warbler	---	---	S5B		•						
<i>Anas platyrhynchos</i>	Mallard	---	---	S5		•						•
<i>Cistothorus palustris</i>	Marsh Wren	---	---	S4B		•						
<i>Falco columbarius</i>	Merlin	---	---	S5B		•						
<i>Zenaida macroura</i>	Mourning Dove	---	---	S5		•						•
<i>Oporornis philadelphia</i>	Mourning Warbler	---	---	S4B		•						•
<i>Cygnus olor</i>	Mute Swan	---	---	SNA		•						
<i>Vermivora ruficapilla</i>	Nashville Warbler	---	---	S5B		•						

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Cardinalis cardinalis</i>	Northern Cardinal	---	---	S5		•						
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B		•						•
<i>Accipiter gentilis</i>	Northern Goshawk	---	---	S4		•						
<i>Circus cyaneus</i>	Northern Harrier	---	---	S4B		•						
<i>Mimus polyglottos</i>	Northern Mockingbird	---	---	S4		•						
<i>Anas acuta</i>	Northern Pintail	---	---	S5		•						
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	---	---	S4B		•						•
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	---	---	S4		•						
<i>Anas clypeata</i>	Northern Shoveler	---	---	S4		•						
<i>Seiurus noveboracensis</i>	Northern Waterthrush	---	---	S5B		•						•
<i>Contopus cooperi</i>	Olive-sided Flycatcher*	THR	SC	S4B		•						
<i>Icterus spurius</i>	Orchard Oriole	---	---	S4B		•						
<i>Pandion haliaetus</i>	Osprey	---	---	S5B		•						
<i>Seiurus aurocapillus</i>	Ovenbird	---	---	S4B		•						•
<i>Podilymbus podiceps</i>	Pied-billed Grebe	---	---	S4B, S4N		•						
<i>Dryocopus pileatus</i>	Pileated Woodpecker	---	---	S5		•						
<i>Carduelis pinus</i>	Pine Siskin	---	---	S4B		•						

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Dendroica pinus</i>	Pine Warbler	---	---	S5B		•						
<i>Carpodacus purpureus</i>	Purple Finch	---	---	S4B		•						•
<i>Progne subis</i>	Purple Martin	---	---	S4B		•						
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	---	---	S4		•						
<i>Mergus serrator</i>	Red-breasted Merganser	---	---	S4B, S5N		•						
<i>Sitta canadensis</i>	Red-breasted Nuthatch	---	---	S5		•						
<i>Vireo olivaceus</i>	Red-eyed Vireo	---	---	S5B		•						•
<i>Aythya americana</i>	Redhead*	---	---	S2B, S4N		•						
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker*	THR	SC	S4B		•						
<i>Podiceps grisegena</i>	Red-necked Grebe*	---	---	S3B, S4N		•						
<i>Buteo lineatus</i>	Red-shouldered Hawk*	SC	---	S4B		•						
<i>Buteo jamaicensis</i>	Red-tailed Hawk	---	---	S5		•						
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	---	---	S4		•						•
<i>Larus delawarensis</i>	Ring-billed Gull	---	---	S5B, S4N		•						

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNRF ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Aythya collaris</i>	Ring-necked Duck	---	---	S5		•						
<i>Phasianus colchicus</i>	Ring-necked Pheasant	---	---	SNA		•						
<i>Columba livia</i>	Rock Dove	---	---	SNA		•						
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	---	---	S4B		•						•
<i>Regulus calendula</i>	Ruby-crowned Kinglet	---	---	S4B		•						
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	---	---	S5B		•						
<i>Oxyura jamaicensis</i>	Ruddy Duck	---	---	S4B, S4N		•						
<i>Bonasa umbellus</i>	Ruffed Grouse	---	---	S4		•						•
<i>Grus canadensis</i>	Sandhill Crane	---	---	S5B		•						
<i>Passerculus sandwichensis</i>	Savannah Sparrow	---	---	S4B		•						•
<i>Piranga olivacea</i>	Scarlet Tanager	---	---	S4B		•						•
<i>Cistothorus platensis</i>	Sedge Wren	---	---	S4B		•						
<i>Accipiter striatus</i>	Sharp-shinned Hawk	---	---	S5B, SZN		•						
<i>Asio flammeus</i>	Short-eared Owl*	SC	SC	S2N, S4B	•	•						
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B		•						•

Scientific Name	Common Name	Conservation Status			Information Source						Observed in Field	
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹		MNRF ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Porzana carolina</i>	Sora	---	---	S4B, SZN		•						
<i>Actitis macularia</i>	Spotted Sandpiper	---	---	S5		•						•
<i>Melospiza georgiana</i>	Swamp Sparrow	---	---	S5B		•						
<i>Tachycineta bicolor</i>	Tree Swallow	---	---	S4B		•						
<i>Cygnus buccinator</i>	Trumpeter Swan	---	---	S4		•						
<i>Cathartes aura</i>	Turkey Vulture	---	---	S5B		•						•
<i>Bartramia longicauda</i>	Upland Sandpiper	---	---	S4B		•						
<i>Catharus fuscenscens</i>	Veery	---	---	S4B		•						•
<i>Pooecetes gramineus</i>	Vesper Sparrow	---	---	S4B		•						
<i>Rallus limicola</i>	Virginia Rail	---	---	S5B		•						
<i>Vireo gilvus</i>	Warbling Vireo	---	---	S5B		•						•
<i>Sturnella neglecta</i>	Western Meadowlark*	---	---	S3B		•						
<i>Sitta carolinensis</i>	White-breasted Nuthatch	---	---	S5		•						•
<i>Zonotrichia albicollis</i>	White-throated Sparrow	---	---	S5B		•						•
<i>Meleagris gallopavo</i>	Wild Turkey	---	---	S5		•						•
<i>Empidonax traillii</i>	Willow Flycatcher	---	---	S5B, SZN		•						

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Phalaropus tricolor</i>	Wilson's Phalarope*	---	---	S3B		•						
<i>Troglodytes troglodytes</i>	Winter Wren	---	---	S5B		•						
<i>Aix sponsa</i>	Wood Duck	---	---	S5		•						
<i>Hylocichla mustelina</i>	Wood Thrush*	---	SC	S4B		•						•
<i>Dendroica petechia</i>	Yellow Warbler	---	---	S5B		•						•
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	---	---	S5B		•						•
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	---	---	S4B, SZN		•						•
<i>Dendroica coronata</i>	Yellow-rumped Warbler	---	---	S5B		•						
<i>Vireo flavifrons</i>	Yellow-throated Vireo	---	---	S4B		•						
MAMMALS												
<i>Castor canadensis</i>	American Beaver	---	---	S5			•					
<i>Ursus americanus</i>	American Black Bear	---	---	S5			•					
<i>Mustela vison</i>	American Mink	---	---	S5			•					
<i>Sorex hoyi</i>	American Pygmy Shrew	---	---	S4			•					
<i>Eptesicus fuscus</i>	Big Brown Bat	---	---	S5			•					
<i>Lynx rufus</i>	Bobcat	---	---	S4			•					
<i>Sorex cinereus</i>	Cinereus (Masked) Shrew	---	---	S5			•					

Scientific Name	Common Name	Conservation Status			Information Source						Observed in Field	
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹		MNR ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Ondatra zibethicus</i>	Common Muskrat	---	---	S5			•					
<i>Canis latrans</i>	Coyote	---	---	S5			•					•
<i>Peromyscus maniculatus</i>	Deer Mouse	---	---	S5			•					
<i>Tamias striatus</i>	Eastern Chipmunk	---	---	S5			•					•
<i>Sylvilagus floridanus</i>	Eastern Cottontail	---	---	S5			•					
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	---	---	S5			•					
<i>Mustela erminea</i>	Ermine	---	---	S5			•					
<i>Parascalops breweri</i>	Hairy-tailed Mole	---	---	S4			•					
<i>Lasiurus cinereus</i>	Hoary Bat	---	---	S4			•					
<i>Mustela nivalis</i>	Least Weasel	---	---	SU			•					
<i>Mustela frenata</i>	Long-tailed Weasel	---	---	S4			•					
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	---	---	S5			•					
<i>Microtus pennsylvanicus</i>	Meadow Vole	---	---	S5			•					
<i>Erethizon dorsatum</i>	North American Porcupine	---	---	S5			•					
<i>Lontra canadensis</i>	Northern River Otter	---	---	S5			•					
<i>Blarina brevicauda</i>	Northern Short-tailed Shrew	---	---	S5			•					
<i>Procyon lotor</i>	Raccoon	---	---	S5			•					
<i>Vulpes vulpes</i>	Red Fox	---	---	S5			•					

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNR ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	---	---	S5			•					•
<i>Lasionycteris noctivagans</i>	Silver Haired Bat	---	---	S4			•					
<i>Sorex fumeus</i>	Smoky Shrew	---	---	S5			•					
<i>Lepus americanus</i>	Snowshoe Hare	---	---	S5			•					
<i>Glaucomys volans</i>	Southern Flying Squirrel	---	---	S4			•					
<i>Clethrionomys gapperi</i>	Southern Red-backed Vole	---	---	S5			•					
<i>Condylura cristata</i>	Star-nosed Mole	---	---	S5			•					
<i>Mephitis mephitis</i>	Striped Skunk	---	---	S5			•					
<i>Perimyotis subflavus</i>	Tri-Coloured Bat*	END	---	S3?			•					
<i>Peromyscus leucopus</i>	White –footed Mouse	---	---	S5			•					
<i>Odocoileus virginianus</i>	White-tailed Deer	---	---	S5			•					•
<i>Marmota monax</i>	Woodchuck	---	---	S5			•					
<i>Napaeozapus insignis</i>	Woodland Jumping Mouse	---	---	S5			•					
HERPETOFAUNA												
<i>Rana catesbeiana</i>	American Bullfrog	---	---	S4				•				
<i>Bufo americanus</i>	American Toad	---	---	S5				•				•
<i>Necturus maculosus</i>	Common Mudpuppy	---	---	S4				•				
<i>Chelydra serpentina</i>	Common Snapping Turtle*	SC	SC	S4	•			•				

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNRF ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake	---	---	S5				•				•
<i>Lampropeltis triangulum</i>	Eastern Milksnake*	SC	SC	S3				•			•	
<i>Notophthalmus viridescens louisianensis</i>	Eastern (Central) Newt	---	---	S4?				•				
<i>Thamnophis sauritus septentrionalis</i>	Eastern Ribbonsnake*	SC	SC	S3				•			•	
<i>Hyla versicolor</i>	Gray Treefrog	---	---	S5				•				•
<i>Rana clamitans</i>	Green Frog	---	---	S5				•				•
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	---	---	S5				•				
<i>Rana septentrionalis</i>	Mink Frog	---	---	S5				•				
<i>Storeria dekayi</i>	Northern Brown Snake	---	---	S5				•				
<i>Rana pipiens</i>	Northern Leopard Frog	---	---	S5				•				•
<i>Graptemys geographica</i>	Northern Map Turtle*	SC	SC	S3				•				
<i>Plethodon cinereus</i>	Northern (Eastern) Redback Salamander	---	---	S5				•				
<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake	---	---	S5				•				
<i>Nerodia sipedon sipedon</i>	Northern Watersnake	---	---	S5				•				

Scientific Name	Common Name	Conservation Status			Information Source							Observed in Field
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹	MNRF ¹⁰	
		SARA ¹	ESA, 2007 ²	SRank ³								
<i>Rana palustris</i>	Pickerel Frog	---	---	S4				•				
<i>Ambystoma maculatum</i>	Spotted Salamander	---	---	S4				•				
<i>Pseudacris crucifer</i>	Spring Peeper	---	---	S5				•				•
<i>Pseudacris triseriata</i>	Western Chorus Frog* (Great Lakes-St. Lawrence Population)	THR	---	S3				•				
<i>Rana sylvatica</i>	Wood Frog	---	---	S5				•				•
INSECTS												
<i>Epitheca canis</i>	Beaverpond Baskettail	---	---	S5					•			
<i>Ladona julia</i>	Chalk-fronted Corporal	---	---	S5					•			
<i>Somatochlora tenebrosa</i>	Clamp-tipped Emerald*	---	---	S2S3	•							
<i>Plathemis lydia</i>	Common Whitetail	---	---	S5					•			
<i>Cordulegaster diastatops</i>	Delta-spotted Spiketail	---	---	S4					•			
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	---	---	S5					•			
<i>Calopteryx maculata</i>	Ebony Jewelwing	---	---	S5					•			
<i>Somatochlora forcipata</i>	Forcipate Emerald*	---	---	S3					•			
<i>Libellula quadrimaculata</i>	Four-spotted Skimmer	---	---	S5					•			
<i>Gomphaeschna furcillata</i>	Harlequin Darner*	---	---	S3	•							
<i>Danaus plexippus</i>	Monarch*	---	SC	S2N,								•

Scientific Name	Common Name	Conservation Status			Information Source						Observed in Field	
		National	Provincial		NHIC ⁴	OBBA ⁵ Square # 17NJ18 17NJ28	Mammals ⁶	Ontario Nature ⁷	Odonata Atlas ⁸	Butterfly Atlas ⁹		MNRF ¹⁰
		SARA ¹	ESA, 2007 ²	SRank ³								
				S4B								
<i>Nymphalis antiopa</i>	Mourning Cloak	---	---	S5								•
<i>Pieris oleracea</i>	Mustard White	---	---	S4						•		
<i>Phyciodes cocyta</i>	Northern Crescent	---	---	S5								•
<i>Calopteryx aequabilis</i>	River Jewelwing	---	---	S5					•			
<i>Aeshna umbrosa</i>	Shadow Darner	---	---	S5					•			
<i>Satyrrium liparops</i>	Striped Hairstreak	---	---	S5						•		
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	---	---	S5					•			
<i>Sympetrum obtrusum</i>	White-faced Meadowhawk	---	---	S5					•			
<i>Limenitis arthemis</i>	White Admiral	---	---	S5								•

¹Species at Risk Act; ²Endangered Species Act; ³SRank Code (see below); ⁴MNRF NHIC Database; ⁵Ontario Breeding Bird Atlas; ⁶Dobbyn (1994); ⁷Ontario Nature (2010) Ontario Reptile and Amphibian Atlas; ⁸Ontario Odonata Atlas; ⁹Toronto Entomologists Association (2013) Ontario Butterfly Atlas Online. For all codes, please see **Appendix C2**. • denotes occurrence record and/or project location includes species range; --- denotes no information, no status or not applicable; * denotes Species of Conservation Concern.



APPENDIX C2

Species Codes

Overview of Codes for the Conservation Status of Species

Federal Conservation Status

Federal Status: Status assigned by the Committee on the Status of Endangered Wildlife in Canada. (COSEWIC, 2007) and listed under the *Species at Risk Act*

- EXT Extinct. A wildlife species that no longer exists.
- EXP Extirpated. A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
- END Endangered. A wildlife species facing imminent extirpation or extinction.
- THR Threatened. A wildlife species likely to become endangered if limiting factors are not reversed.
- SC Special Concern. A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
- DD Data Deficient - A wildlife species for which there is inadequate information to make a direct, or indirect, assessment of its risk of extinction.
- NAR Not At Risk. A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Provincial Conservation Status

Provincial Status: Status assigned by the Ontario Ministry of Natural Resources (OMNR, 2006) under the *Endangered Species Act, 2007*

- EXT Extinct. A species that no longer exists anywhere.
- EXP Extirpated. A species that no longer exists in the wild in Ontario but still occurs elsewhere.
- END Endangered. A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.
- THR Threatened. A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
- SC Special Concern. A species with characteristics that make it sensitive to human activities or natural events.

- DD Data Deficient. A species for which there is insufficient information for a provincial status recommendation.
- NAR Not At Risk. A species that is currently not listed as risk.

Provincial (S) Rank

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (2007) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.

- S1 *Critically Imperiled.* Extremely rare in Ontario; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.
- S2 *Imperiled.* Very rare in Ontario; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.
- S3 *Vulnerable.* Rare to uncommon in Ontario; usually between 20 & 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.
- S4 *Apparently Secure.* Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.
- S5 *Secure.* Very common and demonstrably secure in Ontario.
- SH Historically known from Ontario, but not verified recently (typically not recorded in the province in the last 20 years); however suitable habitat is thought to be still present in the province and there is reasonable expectation that the species may be rediscovered.

- SR Reported for Ontario, but without persuasive documentation which would provide a basis for either accepting or rejecting the report.
- SRF Reported falsely from Ontario.
- SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.
- SE Exotic; not believed to be a native component of Ontario's flora.
- S? Not Ranked Yet, or if following a ranking, Rank Uncertain (e.g. S3?). S? Species have not had a rank assigned.
- SU Unrankable, often because of low search effort or cryptic nature of the species, there is insufficient information available to assign a more accurate rank; more data is needed.

Coefficient of Conservatism (CC) Definition (Plants)

Each native taxon was assigned a rank of 0 to 10 ("coefficient of conservatism") based on its degree of fidelity to a range of synecological parameters. Plants found in a wide variety of plant communities, including disturbed sites, were assigned ranks of 0 to 3. Taxa that typically are associated with a specific plant community, but tolerate moderate disturbance, were assigned ranks of 4 to 6. Rankings of 7 to 8 were applied to those taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance. Those plants with high degrees of fidelity to a narrow range of synecological parameters were assigned a value of 9 to 10

Wetness Index (CW) (Plants)

The wetness index gives an indication of where plant species are typically found. A wetness value (coefficient of wetness) between -5 and 5. A value of -5 was assigned to Obligate Wetland (OBL) species and a value of 5 to Obligate Upland species (UPL), with intermediate values assigned to the remaining categories. The wetland categories and their corresponding values are as follows:

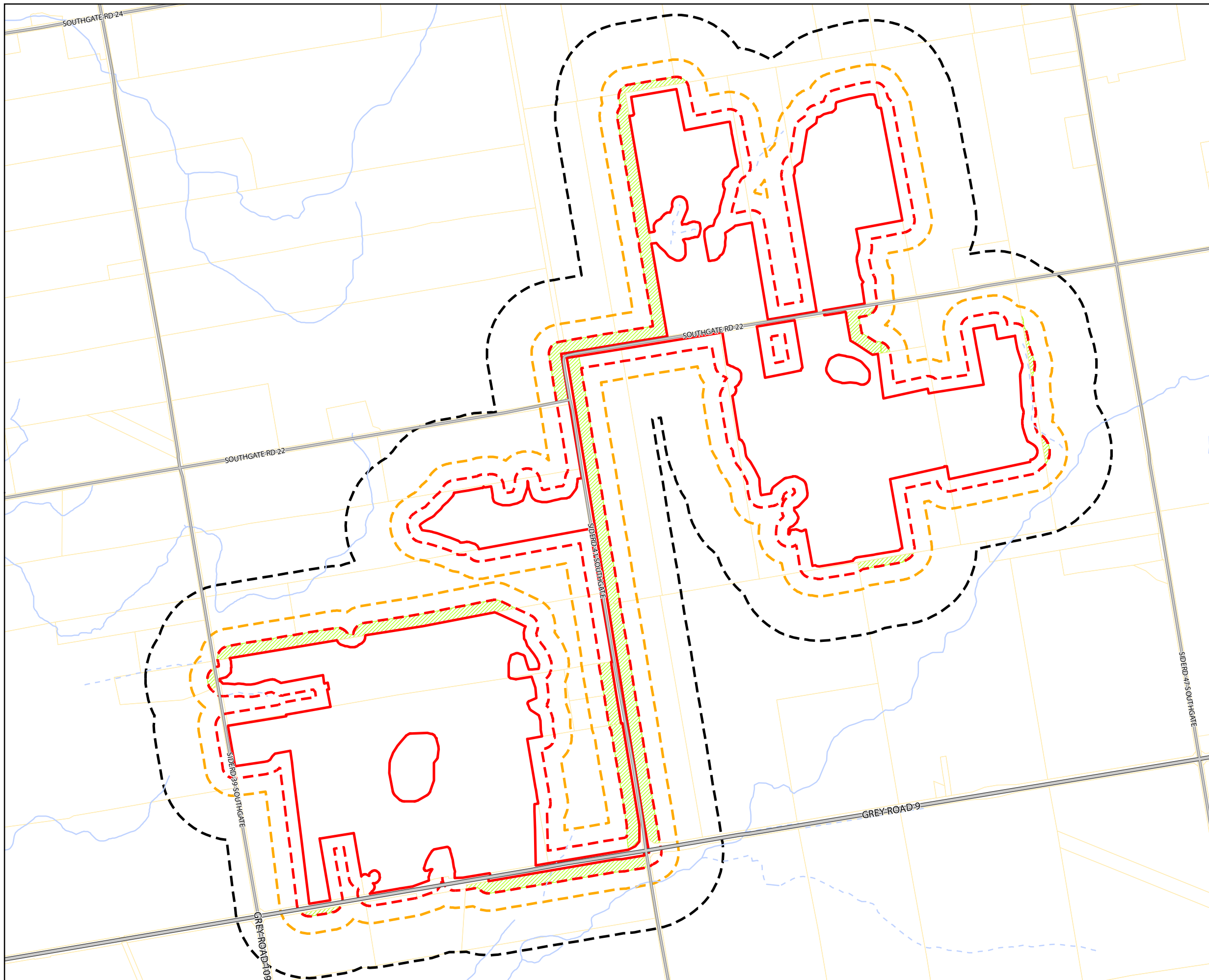
These categories are defined as follows:

OBL	-5	OBL	Obligate Wetland	Occurs almost always in wetlands under natural conditions >
-----	----	-----	------------------	---

				99% probability).
FACW+	-4	FACW	Facultative Wetland	Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability).
FACW	-3			
FACW-	-2			
FAC +	-1	FAC	Facultative	Equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability).
FAC 0				
FAC-	1			
FACU+	2	FACU	Facultative Upland	Occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33 % probability).
FACU	3			
FACU-	4			
UPL 5		UPL	Obligate Upland	Occurs almost never in wetlands under natural conditions (estimated <1 % probability).

APPENDIX D

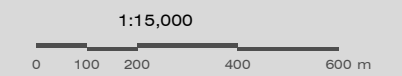
Supplemental Mapping



SOUTHGATE SOLAR PROJECT

**FIGURE D1
ACCESS TO ADJACENT LANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Area of Alternative Site Investigation



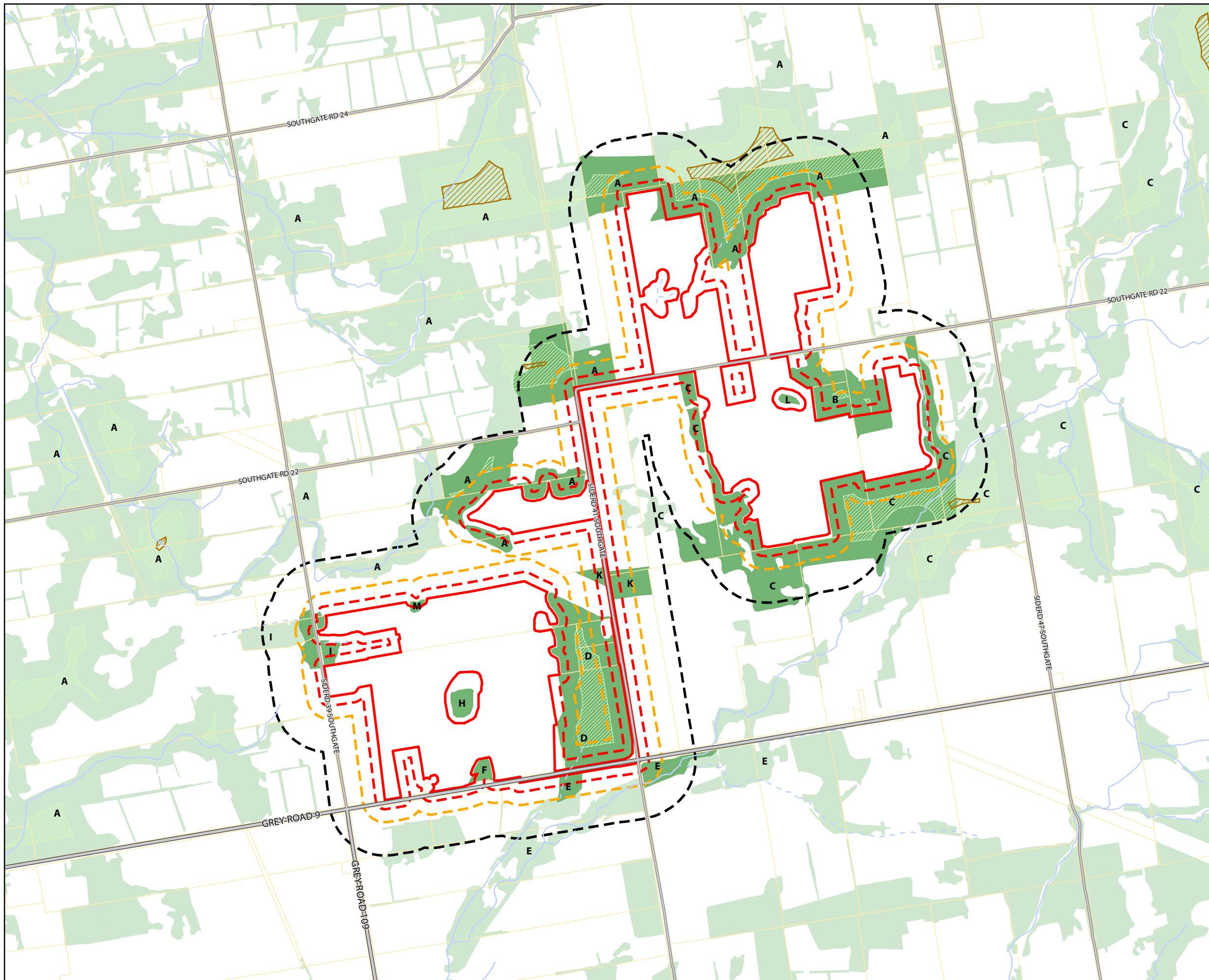
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 11/28/2014



SOUTHGATE SOLAR PROJECT

**FIGURE D2
SUPPLEMENTAL WOODLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- 200 m Woodland Interior
- 100 m Woodland Interior
- Dillon Delineated Woodland
- Woodland
- Woodlands_2015

1:20,000
0 100 200 400 600 m



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 1/9/2015

Table D1: Size of ELC Polygons

ID	ELC Code	Area (ha)
1a	CVC_4: Extraction	0.1
2a	CVR_4: Rural Residential Property	0.68
2b	CVR_4: Rural Residential Property	1.93
2c	CVR_4: Rural Residential Property	3.75
2d	CVR_4: Rural Residential Property	0.82
2e	CVR_4: Rural Residential Property	0.77
2f	CVR_4: Rural Residential Property	2.13
2g	CVR_4: Rural Residential Property	0.94
2h	CVR_4: Rural Residential Property	0.93
2i	CVR_4: Rural Residential Property	0.75
2j	CVR_4: Rural Residential Property	1.2
2k	CVR_4: Rural Residential Property	0.92
2l	CVR_4: Rural Residential Property	0.32
2m	CVR_4: Rural Residential Property	0.66
2n	CVR_4: Rural Residential Property	0.61
2o	CVR_4: Rural Residential Property	1.63
2p	CVR_4: Rural Residential Property	1.34
2q	CVR_4: Rural Residential Property	0.48
2r	CVR_4: Rural Residential Property	0.62
2s	CVR_4: Rural Residential Property	0.67
4a	FOCM4-1: Fresh-Moist White Cedar Coniferous Forest	0.34
4b	FOCM4-1: Fresh-Moist White Cedar Coniferous Forest	0.5
5a	FOCM6-1: Dry-Fresh White Pine Naturalized Coniferous Plantation	6.86
8a	FODM11: Naturalized Deciduous Hedgerow	0.36
9a	FODM5-1: Dry-Fresh Sugar Maple Deciduous Forest	7.45
10a	FODM5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	2.36
10b	FODM5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	10.71
11a	FODM5-9: Dry-Fresh Sugar Maple Hardwood Deciduous Forest	34.56
12a	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	3.85
12b	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	1.3
12c	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	24.95
12d	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	0.87
12e	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	16.73
12f	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	10.05
12g	FODM6-5: Fresh-Moist Sugar Maple Hardwood Deciduous Forest	3.29
13a	FODM6: Fresh-Moist Sugar Maple Deciduous Forest	10.86
18a	MAMM1-2: Cattail Graminoid Mineral Meadow Marsh	0.47

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18b	MAMM1-2: Cattail Graminoid Mineral Meadow Marsh	0.25
19a	MAMM1-3: Reed Canary Grass Graminoid Mineral Meadow Marsh	0.34
19b	MAMM1-3: Reed Canary Grass Graminoid Mineral Meadow Marsh	0.69
19c	MAMM1-3: Reed Canary Grass Graminoid Mineral Meadow Marsh	0.15
19d	MAMM1-3: Reed Canary Grass Graminoid Mineral Meadow Marsh	0.04
21a	MAMM3-1: Mixed Mineral Meadow Marsh	0.82
21b	MAMM3-1: Mixed Mineral Meadow Marsh	0.23
21c	MAMM3-1: Mixed Mineral Meadow Marsh	0.12
23a	MASM1-1: Cattail Mineral Shallow Marsh	0.32
24a	MASM1-14: Reed Canary Grass Mineral Shallow Marsh	0.31
26a	MEG: Graminoid Meadow	0.42
28a	MEMM3: Dry-Fresh Mixed Meadow	0.39
28b	MEMM3: Dry-Fresh Mixed Meadow	0.96
28c	MEMM3: Dry-Fresh Mixed Meadow	0.08
28d	MEMM3: Dry-Fresh Mixed Meadow	0.83
28e	MEMM3: Dry-Fresh Mixed Meadow	0.31
29a	MEMM4: Fresh-Moist Mixed Meadow	0.83
29b	MEMM4: Fresh-Moist Mixed Meadow	0.59
29c	MEMM4: Fresh-Moist Mixed Meadow	0.96
30a	OAGM1: Annual Row Crop	8.17
30b	OAGM1: Annual Row Crop	17.01
30c	OAGM1: Annual Row Crop	1.13
30d	OAGM1: Annual Row Crop	30.88
30e	OAGM1: Annual Row Crop	4.85
30f	OAGM1: Annual Row Crop	1.6
30g	OAGM1: Annual Row Crop	7.06
30h	OAGM1: Annual Row Crop	51.31
30i	OAGM1: Annual Row Crop	1.38
30j	OAGM1: Annual Row Crop	3.56
30k	OAGM1: Annual Row Crop	6.16
30l	OAGM1: Annual Row Crop	4.53
30m	OAGM1: Annual Row Crop	26.52
30n	OAGM1: Annual Row Crop	0.44
30o	OAGM1: Annual Row Crop	2.86
30p	OAGM1: Annual Row Crop	39.76
30q	OAGM1: Annual Row Crop	3.63
30r	OAGM1: Annual Row Crop	28.76
30s	OAGM1: Annual Row Crop	2.37
30t	OAGM1: Annual Row Crop	1.3

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30u	OAGM1: Annual Row Crop	5.46
30v	OAGM1: Annual Row Crop	4.75
30w	OAGM1: Annual Row Crop	7.7
31a	OAGM2: Perennial Cover Crop	0.84
31b	OAGM2: Perennial Cover Crop	4.93
31c	OAGM2: Perennial Cover Crop	2.81
31d	OAGM2: Perennial Cover Crop	7.58
31e	OAGM2: Perennial Cover Crop	3.02
31f	OAGM2: Perennial Cover Crop	2.49
31g	OAGM2: Perennial Cover Crop	2.43
31h	OAGM2: Perennial Cover Crop	2.4
31i	OAGM2: Perennial Cover Crop	1.53
31j	OAGM2: Perennial Cover Crop	0.46
31k	OAGM2: Perennial Cover Crop	3.76
31l	OAGM2: Perennial Cover Crop	3.51
31m	OAGM2: Perennial Cover Crop	3.32
31n	OAGM2: Perennial Cover Crop	3.49
31o	OAGM2: Perennial Cover Crop	11.7
31p	OAGM2: Perennial Cover Crop	1.62
31q	OAGM2: Perennial Cover Crop	0.48
31r	OAGM2: Perennial Cover Crop	16.77
31s	OAGM2: Perennial Cover Crop	0.28
31t	OAGM2: Perennial Cover Crop	1.48
31u	OAGM2: Perennial Cover Crop	1.96
31v	OAGM2: Perennial Cover Crop	1.95
31w	OAGM2: Perennial Cover Crop	1.21
31x	OAGM2: Perennial Cover Crop	4.98
31y	OAGM2: Perennial Cover Crop	2.76
32a	OAGM4: Open Pasture	3.21
32b	OAGM4: Open Pasture	4.7
32c	OAGM4: Open Pasture	6.58
32d	OAGM4: Open Pasture	9.3
32e	OAGM4: Open Pasture	5.67
32f	OAGM4: Open Pasture	7.15
32g	OAGM4: Open Pasture	2.11
32h	OAGM4: Open Pasture	2.77
33a	OAO: Open Aquatic	0.22
33b	OAO: Open Aquatic	0.07
33c	OAO: Open Aquatic	1.25

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33d	OAO: Open Aquatic	0.07
33e	OAO: Open Aquatic	0.07
33f	OAO: Open Aquatic	0.03
35a	SWCO2-2: Tamarack Organic Coniferous Swamp	2.22
37a	SWDM2-1: Black Ash Mineral Deciduous Swamp/MAMM3-1: Mixed Mineral Meadow Marsh Complex	1.33
38a	SWDM2-2: Green Ash Mineral Deciduous Swamp	0.14
39a	SWDM4-5: Poplar Mineral Deciduous Swamp	1.61
40a	SWDM4-5: Poplar Mineral Deciduous Swamp/SWTM2-1: Red-osier Dogwood Deciduous Thicket Swamp Complex	0.43
42a	SWMM1-1: White Cedar Hardwood Mineral Mixed Swamp	1.73
42b	SWMM1-1: White Cedar Hardwood Mineral Mixed Swamp	0.22
42c	SWMM1-1: White Cedar Hardwood Mineral Mixed Swamp	3.54
42d	SWMM1-1: White Cedar Hardwood Mineral Mixed Swamp	1.54
44a	SWMM5-1: Balsam Fir Hardwood Mixed Mineral Swamp	11.1
45a	SWMO1-1: White Cedar Hardwood Organic Mixed Swamp	9.35
45b	SWMO1-1: White Cedar Hardwood Organic Mixed Swamp	0.78
47a	SWTM3: Willow Mineral Deciduous Thicket Swamp	0.03
47b	SWTM3: Willow Mineral Deciduous Thicket Swamp	0.22
47c	SWTM3: Willow Mineral Deciduous Thicket Swamp	1.27
49a	TAGM1: Coniferous Plantation	1.06
49b	TAGM1: Coniferous Plantation	1.02
49c	TAGM1: Coniferous Plantation	0.26
49d	TAGM1: Coniferous Plantation	0.21
49e	TAGM1: Coniferous Plantation	4
50a	TAGM5: Fencerow	0.33
50b	TAGM5: Fencerow	0.04
50c	TAGM5: Fencerow	0.49
50d	TAGM5: Fencerow	0.35
50e	TAGM5: Fencerow	2.48
50f	TAGM5: Fencerow	0.31
50g	TAGM5: Fencerow	0.37
50h	TAGM5: Fencerow	1.46
50i	TAGM5: Fencerow	0.41
50j	TAGM5: Fencerow	2.51
50k	TAGM5: Fencerow	1.54
50l	TAGM5: Fencerow	2.48
50m	TAGM5: Fencerow	0.88
50n	TAGM5: Fencerow	0.14
50o	TAGM5: Fencerow	0.84

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50p	TAGM5: Fencerow	0.14
50q	TAGM5: Fencerow	0.09
50r	TAGM5: Fencerow	0.05
50s	TAGM5: Fencerow	1.11
50t	TAGM5: Fencerow	0.15
50u	TAGM5: Fencerow	0.89
50v	TAGM5: Fencerow	2.96
50w	TAGM5: Fencerow	0.26
50x	TAGM5: Fencerow	2.41
50y	TAGM5: Fencerow	0.27
50z	TAGM5: Fencerow	1.22
53a	THDM2-11: Hawthorn Deciduous Shrub Thicket	0.32
54a	THDM2: Dry-Fresh Deciduous Shrub Thicket	1.43
55a	THMM2: Fresh-Moist Mixed Thicket	1.21
55b	THMM2: Fresh-Moist Mixed Thicket	7.04
56a	WODM4-3: Dry-Fresh Sugar Maple Deciduous Woodland	0.89
57a	WODM4: Dry-Fresh Deciduous Woodland	3.35
57b	WODM4: Dry-Fresh Deciduous Woodland	1.29
57c	WODM4: Dry-Fresh Deciduous Woodland	1.42
57d	WODM4: Dry-Fresh Deciduous Woodland	2.38
58a	WODM5-3: Fresh-Moist Manitoba Maple Deciduous Woodland	0.39

EVALUATION OF SIGNIFICANCE REPORT

Southgate Solar Project

April 2015

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1. INTRODUCTION

Southgate Solar LP proposes to develop a solar facility with a maximum name plate capacity of 50 megawatts alternating current (MWac), located near Mount Forest, in the Township of Southgate, County of Grey, Ontario (**Figure 1**). The renewable energy facility will be known as the Southgate Solar Project (“the Project”).

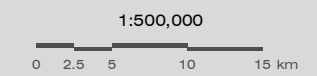
Southgate Solar LP has initiated the Project through a Power Purchase Agreement (PPA) with the Ontario Power Authority. The Project will require approval under Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Part V.0.1 of the *Ontario Environmental Protection Act*.

O. Reg. 359/09 requires that all renewable energy projects conduct an evaluation of significance for natural heritage features that fall within the Project Location or the prescribed setback area (REA Section 27). This *Natural Heritage Assessment (NHA) Evaluation of Significance Report* was completed in partial fulfillment of the regulatory requirements for the REA process (as detailed in **Table 1**). All known natural features within the Project Location and prescribed setback area have been outlined in the *NHA Site Investigation Report* for this project. These reports will be submitted to the Ministry of Natural Resources and Forestry (MNRF) for review and comment, as required in O. Reg. 359/09. Discussion of Species at Risk, fish habitat and other information needs, as outlined in the MNRF’s *Approval and Permitting Requirements Document (APRD) for Renewable Energy (MNRF 2009)*, are discussed in separate reports, under direction from the MNRF and in compliance with the REA and other applicable legislation.



SOUTHGATE SOLAR PROJECT

**FIGURE 1
GENERAL PROJECT LOCATION**



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 9/25/2014

Table 1: Checklist for Requirements under O.Reg. 359/09- Natural Heritage Assessment
- Evaluation of Significance

Required Documentation	Location in Report
1. For each natural feature shown on the map mentioned in paragraph 3 of subsection 26 (3) of O. Reg. 359/09, a determination of whether the natural feature is provincially significant, significant, not significant or not provincially significant.	Section 8, <i>Evaluation of Significance</i> Table 8: Natural Features Evaluation of Significance Summary Figures 5A-5J
2. A summary of the evaluation criteria or procedures used to make the determinations mentioned in paragraph 1.	Section 6, <i>Methodology</i>
3. The name and qualifications of any person who applied the evaluation criteria or procedures mentioned in paragraph 2.	Section 7, <i>Names and Qualifications of Site Investigators</i>
4. The dates of the beginning and completion of the evaluation.	Table 3: <i>Site Evaluation Dates, Times, Duration and Weather Conditions</i>

2. THE PROPONENT

In the course of developing renewable energy projects, Southgate Solar LP strives to satisfy various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity, and site location. In addition, Southgate Solar LP aims to build long-term relationships with the communities that host its projects. Southgate Solar LP is committed to the health and welfare of the residents of the Township of Southgate, and to ensure that the Southgate Solar Project is successful for stakeholders.

Contact information for the Proponent is as follows:

Full Name of Company:	<u>Southgate Solar LP</u>
Prime Contacts:	<u>- Simon Kim, Project Manager</u> <u>- A. José De Armas, Manager, Project Development</u>
Address:	<u>2050 Derry Road West 2nd Floor, Mississauga, ON, L5N 0B9</u>
Telephone:	<u>(905) 501-5657</u>
Email:	<u>ssp@samsungrenewableenergy.ca</u>

Dillon Consulting Limited (Dillon) is the prime contractor for the preparation of this report. The contact at Dillon is:

Full Name of Company:	<u>Dillon Consulting Limited</u>
Prime Contact:	<u>Michael Enright, Project Manager</u>
Address:	<u>1155 North Service Road West, Unit 14, Oakville, Ontario, L6M 3E3</u>
Telephone:	<u>(905) 901-2912 ext. 3401</u>
Email:	<u>menright@dillon.ca</u>

3. PROJECT LOCATION

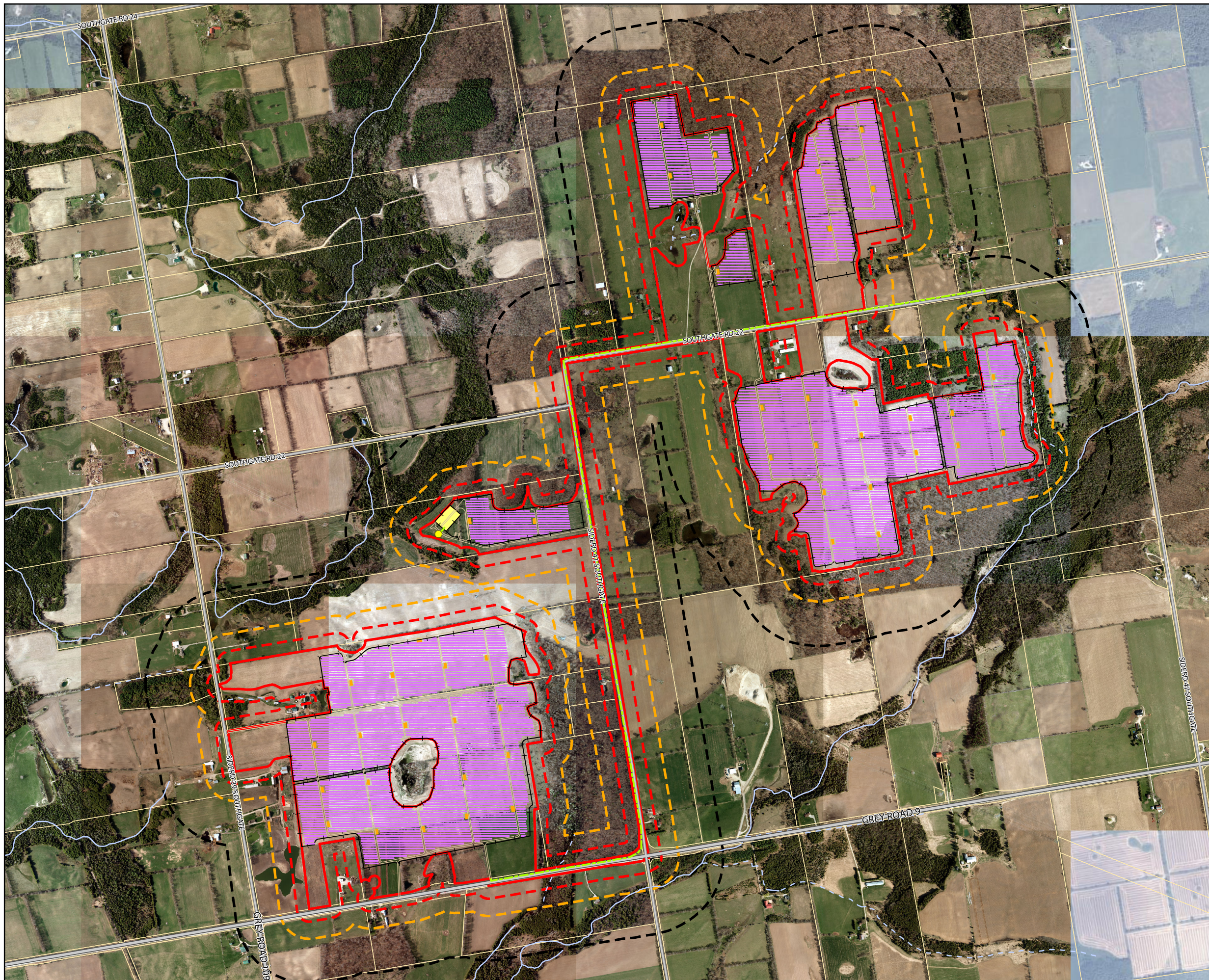
The proposed Class 3 Solar Facility is to be located within the Township of Southgate, in the County of Grey, approximately 11 kilometres north of the community of Mount Forest. **Figure 1** shows the general location of the Project in Southwestern Ontario. The proposed Project Location consists of approximately 235 hectares (581 acres) and is contained within an area bounded on the north by Southgate Road 24, Southgate Road 14 to the south, Southgate Road 47 to the east, and Highway 6 to the west. The proposed Project Location, consisting of multiple privately-owned parcels, is to be leased by Southgate Solar LP. It has an approximate centroid at the following geographic coordinates:

- Latitude: 44° 6' 7.78" N
- Longitude: 80° 44' 49.91" W

Figure 1 shows the general location of the Project in Ontario. The Project Location is defined in O. Reg. 359/09 to be *“a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project”*.

Figure 2 shows the Project Location as defined by O. Reg. 359/09. Project components, including solar modules and electrical facilities such as inverters, transformers, substations and electrical lines, will be located on private land. Areas within the Project Location but outside of the perimeter fence are *“Areas of Operational Flexibility”*. These areas have been reserved to accommodate other Project requirements (ex. stormwater measures, temporary laydown areas, etc.). This is discussed in greater detail on Section 4 of the *Project Description Report*.

Figure 2 also includes the 50 m, 120 m and 300 m setbacks from the Project Location. Each setback distance is applicable to various components of the REA process. Setback development prohibitions for solar facilities are outlined in Part V, Sections 37 and 38 of O. Reg. 359/09 (revised in November 2012).

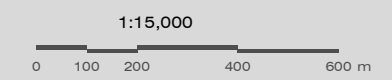


SOUTHGATE SOLAR PROJECT

**FIGURE 2
PROJECT LOCATION**

- Point of Common Coupling
- Overhead Cable
- Fence
- Access Road
- Inverter
- Solar Panel
- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Substation
- Parcel Boundary

The area between the fence line and the Project Location is the Area of Operational Flexibility.



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 11/28/2014

4. SUMMARY OF SITE INVESTIGATION

Using the results of the records review, completed in accordance with Section 26 of O. Reg. 359/09, a site investigation was conducted. A detailed list of the determinations made from site investigation work is outlined in **Table 2**. Natural features occurring within the Project Location or the surrounding 50 m, as defined in O. Reg. 359/09, are outlined in the *NHA Site Investigation Report*. Figures 5, 6 and 7A-7P of the *NHA Site Investigation Report* (included in **Appendix A** for reference), illustrate the results of the site investigation and identifies the natural heritage features within 50 m of the Project Location in accordance with the requirements of Section 26 of O. Reg. 359/09.

Table 2: Summary of Site Investigation Results

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Wetlands					
Unevaluated Southern Wetlands (4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32)	No	Yes	Yes**	No	N/A
Woodlands					
Unevaluated Southern Woodlands (A, B, C, D, E, F, H, I, K, L, M)	Yes	Yes	Yes	Yes	N/A
Candidate Significant Wildlife Habitat					
Seasonal Concentration Areas					
Waterfowl Stopover and Staging Areas (Aquatic) - Generalized	No	Yes	No	No	Yes
Shorebird Migratory Stopover Areas - Generalized	No	Yes	No	No	Yes
Bat Maternity Colonies - Generalized	No	Yes	No	No	Yes
Turtle Wintering Areas - TWA1, TWA2	Yes	Yes	Yes	No	N/A

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Natural Heritage Assessment Evaluation of Significance Report

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Turtle Wintering Areas - Generalized	No	Yes	No	No	Yes
Colonially- Nesting Bird Breeding Habitat (Ground) - CNG1, CNG2	No	Yes	Yes	No	N/A
<i>Rare Vegetation Communities</i>					
No applicable rare vegetation communities.					
<i>Specialised Wildlife Habitat</i>					
Woodland Raptor Nesting Habitat - WRNH1	No	Yes	Yes	No	N/A
Turtle Nesting Areas - TNA1	No	Yes	Yes	No	N/A
Seeps and Springs - Generalized	No	Yes	No	No	Yes
Amphibian Breeding Habitat (Woodland) - ABHWO1, ABHWO2, ABHWO3, ABHWO4, ABHWO5	Yes	Yes	Yes	No	N/A
Amphibian Breeding Habitat (Wetland) - ABHWE1, ABHWE2, ABHWE3, ABHWE5, ABHWE6, ABHWE7, ABHWE8, ABHWE9, ABHWE10, ABHWE11, ABHWE12,	Yes	Yes	Yes	No	N/A

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
ABHWE13, ABHWE14					
Amphibian Breeding Habitat (Wetland) - Generalized	No	Yes	No	No	Yes
<i>Habitat of Species of Conservation Concern</i>					
Marsh Bird Breeding Habitat - MBBH1, MBBH2, MBBH3, MBBH4, MBBH5, MBBH6	Yes	Yes	Yes	No	N/A
Marsh Bird Breeding Habitat - Generalized	No	Yes	No	No	Yes
Woodland Area- Sensitive Bird Breeding Habitat - ASBB1	Yes	Yes	Yes	No	N/A
Woodland Area- Sensitive Bird Breeding Habitat - Generalized	No	Yes	No	No	Yes
American Gromwell - AG1, AG2, AG3, AG4, AG5, AG6	Yes	Yes	Yes	No	N/A
Hill's Pondweed - HP1, HP3, HP4, HP5, HP6	Yes	Yes	Yes	No	N/A
Hill's Pondweed - Generalized	No	Yes	No	No	Yes

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Scarlet Beebalm - SB1, SB2, SB3, SB4, SB5, SB6, SB8	Yes	Yes	Yes	No	N/A
Scarlet Beebalm - Generalized	No	Yes	No	No	Yes
Soft-hairy False Gromwell - SHFG1, SHFG2, SHFG3, SHFG4, SHFG5, SHFG6	Yes	Yes	Yes	No	N/A
Common Nighthawk - CN1, CN2, CN3, CN4, CN5	Yes	Yes	Yes	No	N/A
Redheaded Woodpecker - RHW1	No	Yes	Yes	No	N/A
Harlequin Darner - HD1, HD2, HD3, HD4, HD5, HD6, HD7, HD8, HD9, HD10, HD11,	No	Yes	Yes	No	N/A
<i>Animal Movement Corridors</i>					
Amphibian Movement Corridors	Yes	Yes	Yes	No	N/A
<i>Generalized Candidate Significant Wildlife Habitat</i>					
Waterfowl Stopover and Staging Areas (Aquatic)	No	Yes	No	No	Yes
Shorebird Migratory Stopover and Staging Areas	No	Yes	No	No	Yes

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Natural Feature ID	Feature in Relation to Project Location		Evaluation of Significance Status		
	Within	Within Prescribed Setback	Requires Evaluation	Previously Evaluated	Evaluation not Required*
Bat Maternity Colonies	No	Yes	No	No	Yes
Turtle Wintering Areas	No	Yes	No	No	Yes
Hill's Pondweed	No	Yes	No	No	Yes
Scarlet Beebalm	No	Yes	No	No	Yes
Seeps and Springs	No	Yes	No	No	Yes
Amphibian Breeding Habitat (Wetland)	No	Yes	No	No	Yes
Marsh Bird Breeding Habitat	No	Yes	No	No	Yes
Woodland Area-Sensitive Bird Breeding Habitat	No	Yes	No	No	Yes

*An evaluation would not be required if the natural feature is located entirely within the 50 m setback, it is being treated as significant (i.e., studies to evaluate significance will be done pre-construction), or it is assumed significant (i.e., studies to verify provincial significance will not be undertaken or wildlife habitat has been deemed largely unimpacted by the development of a solar facility). **Wetlands will be assessed using *Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects* of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF 2012).

5. EVALUATION OF SIGNIFICANCE PURPOSE

This *NHA Evaluation of Significance Report* was completed to evaluate if natural features found within 50 m of the Project Location are significant or provincially significant. This report is consistent with Section 27 of O. Reg. 359/09, which states that “a person who proposes to engage in a renewable energy project shall evaluate any information available to the person relating to natural features, including all information obtained during the records review, site investigation and in consultation with regulatory agencies, stakeholders and other interested and relevant parties”. The aim of the *NHA Evaluation of Significance Report* is to evaluate the natural features identified in the *NHA Site Investigation Report* (see **Appendix A**) and summarized in **Table 2** above, in accordance with Section 27 of O. Reg. 359/09 to determine:

- Whether a natural feature is significant if it is a woodland or a wildlife habitat; and,
- Whether a natural feature is provincially significant if it is a southern wetland, a northern wetland, a coastal wetland, an area of natural and scientific interest (earth science) or an area of natural and scientific interest (life science).

If a natural feature identified during the site investigation has not been previously evaluated by the MNRF, it requires evaluation using criteria and procedures established or accepted by the MNRF. Woodlands are only assessed for significance if they are south and east of the Canadian Shield as shown in Figure 1 of the *Provincial Policy Statement, 2005*. Where appropriate studies to determine the significance of a wildlife habitat have not been conducted, the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF 2012) states that a wildlife habitat may be treated as significant. Wildlife habitat treated as significant will be clearly identified in this report and the necessary commitments will be made in the EIS (MNRF 2012). Candidate significant wildlife habitats have been evaluated using methods outlined in following sections.

6. METHODOLOGY

The following sections provide evaluation criteria and procedures used to evaluate the natural features determined to be within 50 m of the Project Location during the records review and/or site investigation. Criteria and procedures reported are those that are currently accepted by the MNRF. Additional evaluation criteria and procedures required to confirm the status of wildlife habitat treated as significant will be provided in the *NHA EIS*.

6.1 Access to Adjacent Lands

As outlined in O. Reg. 359/09, all lands within 50 m of a Project component must be assessed for natural features and resources. Access was not available to some lands located within 50 m of the Project Location as only those landowners willing to participate in the project granted permission for land access at the time of the field investigations. Therefore, natural features located on adjacent lands where access was not available were assessed from property lines and road rights-of-way, where applicable, and will be treated as significant and addressed in the *NHA EIS* report. Areas where alternative site investigations were completed are identified in Appendix D of the *NHA Site Investigation Report*.

6.2 Wetlands

Wetlands within 50 m of the Project Location were determined to be southern wetlands based on their location south of the northern limit of Ecoregion 6E as shown in Figure 1 of the *Provincial Policy Statement, 2005*. The evaluation of southern wetlands in or within 50 m of the Project Location was completed using the *Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects* (MNRF 2012). This process identifies individual wetlands and wetland complexes and measures wetland functions and values, providing a framework for evaluating the relative importance of individual wetlands. The criteria and procedures found within are based on sections of the Ontario Wetland Evaluation System (OWES) guidelines (MNRF 2013), reflective of their southern designation, and were applied by a qualified professional, who has received MNRF training in the use of OWES. The evaluation uses information collected during the records review and site investigation stages of the *NHA*.

Please note that, as stated within *Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects*, “The assessment, however, will not be used to officially define the status of wetlands (either as provincially significant or not significant) and may not be used for projects other than renewable energy projects or renewable energy testing projects as defined in the *Green Energy Act*”.

6.3 Woodlands

As outlined in the MNRF’s *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF 2012), and the *Natural Heritage Reference Manual* (MNRF 2010), for a woodland feature to be significant it must first meet minimum standards for tree crown cover

(minimum 60%). If these minimum standards are met, it is then evaluated based on size criterion, ecological function criteria and uncommon characteristics criteria. Many of the criteria have minimum size thresholds that are based on the percentage of woodland cover in the municipality where the project has been proposed. Woodlands that meet the minimum standard for any one of the criteria are considered significant. Where woodlands have been previously evaluated by other parties (ex. by Grey County), if the evaluation of significance applied the criteria referenced above, the evaluation has been accepted for the purposes of this *NHA Evaluation of Significance Report*.

6.4 Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (MNRF 2000) (SWHTG), and associated Ecoregion 6E Criteria Schedule (MNRF 2012), is the authoritative source for the identification and evaluation of significant wildlife habitat. Information collected to evaluate wildlife habitat as significant often requires specific studies targeted to the species, the habitat, or both. The criteria considered and how they were applied in the evaluation of each of the candidate significant wildlife habitats identified in the *NHA Site Investigation Report* are discussed in **Section 8.3**.

Where appropriate studies to determine the significance of a wildlife habitat have not been conducted, wildlife habitat will be treated as significant and studies will be completed prior to construction. The methods to be implemented in order to confirm the status of wildlife habitat treated as significant will be outlined in the *NHA EIS*.

6.4.1 Seasonal Concentration Areas

6.4.1.1 Turtle Wintering Areas

As this candidate wildlife habitat was identified late in 2014, all Turtle Wintering Area habitat will be treated as significant and additional turtle surveys will be completed prior to construction to confirm if the habitat is significant. At this time, the habitat will be treated as significant and carried forward to the *NHA EIS* report. Methods to be followed to evaluate significance will be outlined in Appendix A of the *NHA EIS* report.

6.4.1.2 Colonially- Nesting Bird Breeding Habitat (Ground)

These habitats were evaluated using breeding bird surveys following the methodology in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al 2007). The surveys were completed within candidate significant Colonially- Nesting Bird habitats, on accessible lands, from late May to July of 2014 (two surveys over this time period). Specifically, breeding bird surveys consisted of ten minute point counts that were used to establish quantitative estimates of bird abundance in major habitat types of the study area. To supplement the survey, area searches of the habitat were completed to observe species presence and breeding activity. Area searches involved noting all individual bird species and their corresponding breeding evidence

while traversing the habitat on foot. See **Figure B1-1** of **Appendix B** for locations of point counts and the area search routes.

6.4.2 Specialised Wildlife Habitat

6.4.2.1 Woodland Raptor Nesting Habitat

When field studies began in the candidate woodland raptor nesting habitat in April 2014 (see *NHA Site Investigation Report*), locations of stick nests observations were noted as nests were more visible. Site investigators also noted if use of the nests was observed. This habitat was subsequently evaluated during the breeding bird surveys following the methodology in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al 2007). The surveys were completed within candidate significant Woodland Raptor Nesting Habitat, on accessible lands, from late May to July of 2014 (two surveys over this time period). Specifically, breeding bird surveys consisted of ten minute point counts that were used to establish quantitative estimates of bird abundance in major habitat types of the study area. To supplement the survey, area searches of the habitat were completed to observe species presence and breeding activity. Area searches involved noting all individual bird species and their corresponding breeding evidence while traversing the habitat on foot. See **Figure B1-2** of **Appendix B** for locations of point counts and the area search routes.

6.4.2.2 Turtle Nesting

As this candidate wildlife habitat was identified late in 2014, all Turtle Wintering Area habitat will be treated as significant and additional turtle surveys will be completed prior to construction to confirm if the habitat is significant. At this time, the habitat will be treated as significant and carried forward to the *NHA EIS* report. Methods to be followed to evaluate significance will be outlined in Appendix A of the *NHA EIS* report.

6.4.2.3 Amphibian Breeding Habitat (Woodland and Wetland)

Amphibian monitoring followed the Marsh Monitoring Program protocol (Bird Studies Canada, 2009). Three different surveys were conducted between April 1 and June 30, with at least two weeks between each survey. Surveys began at least one half hour after sunset during evenings with a minimum night temperature of 5°C, 10°C, 17°C for each of the three respective surveys. Survey points aligned with wetland features observed within each of the candidate habitats (**Figure B1-3** in **Appendix B**).

Each amphibian survey generally involved standing at a predetermined station for 3 minutes and listening for frog calls. The calling activity of individuals estimated to be within 100 m of the observation point were documented. All individuals beyond 100 m were recorded as outside of the count circle and calling activity was not recorded. Calling activity was then ranked using one of the following three abundance code categories:

Code 1: Calls not simultaneous, number of individuals can be accurately counted;

Code 2: Some calls simultaneous, number of individuals can reliably be estimated;

Code 3: Calls continuous and overlapping, number of individuals cannot be estimated.

In areas where appropriate habitat exists, vernal pools were also visually examined for egg masses and amphibian larvae in conjunction with other field surveys. These searches occurred between April and June when amphibians were concentrated around suitable breeding habitat. Searches involved walking along the perimeter of the vernal pools/ wetlands, looking for egg masses or juveniles as indicators of amphibian breeding. Searches focused on submergent vegetation and woody debris where amphibians will attach single eggs or masses of eggs.

In areas where stations were not within 100 m of a candidate amphibian breeding habitat (wetland), those habitats will be treated as significant and carried forward to the EIS. These candidate amphibian breeding habitats included: ABHWE1; ABHWE2; ABHWE5; ABHWE6; ABHWE7; ABHWE8; ABHWE9; ABHWE12; ABHWE13; ABHWE14; and ABHWO4. Surveys will be completed pre-construction to determine significance using the same methodology described above.

6.4.3 Habitat of Species of Conservation Concern

6.4.3.1 Marsh Bird Breeding Habitat (for Green Heron only)

Diurnal breeding bird surveys conducted within the Project Location and 50 m setback followed the methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al 2007), and were completed from late May to July of 2014 (two surveys). Specifically, breeding bird surveys consisted of ten minute point counts that were used to establish quantitative estimates of bird abundance in major habitat types of the study area. To supplement the surveys, area searches of the habitat were completed using binoculars to observe species presence and breeding activity. Area searches involved noting all individual bird species and their corresponding breeding evidence while traversing the habitat on foot. A map of the surveys completed for this habitat is included in **Figure B1-4 of Appendix B**.

6.4.3.2 Woodland Area- Sensitive Bird Breeding, Red-Headed Woodpecker Habitat

These habitats were evaluated using breeding bird surveys following the methodology in the Ontario Breeding Bird Atlas Guide for Participants (Cadman et al 2007). Surveys were completed within candidate habitat, on accessible lands, from late May to July of 2014 (two surveys over this time period). Specifically, breeding bird surveys consisted of ten minute point counts that were used to establish quantitative estimates of bird abundance in major habitat types of the study area. To supplement the survey, area searches of the habitats were completed to observe species presence and breeding activity. Area searches involved noting all individual bird species and their corresponding breeding evidence while traversing the habitats on foot. See **Figure B1-5 of Appendix B** for survey points/routes within the candidate woodland area-sensitive bird breeding habitat, and **Figure B1-6** for survey points/routes within the candidate habitat for Red-headed Woodpecker.

6.4.3.3 Plants (Habitat for: American Gromwell; Hill's Pondweed; Scarlet Beebalm; Soft- Hairy False Gromwell)

Candidate Significant Wildlife Habitat for plant Species of Conservation Concern was completed during the site investigation phase in tandem with the ELC and vegetation surveys. Species observed during these surveys were recorded and Species of Conservation Concern observed were noted. ELC was completed by Richard Baxter and Jonathan Harris within these candidate habitats. Both Richard and Jonathan have years of experience conducting ELC work for renewable energy projects and are able to identify these Species of Conservation Concern by sight in the field. They are also affiliated with the Ontario Field Botanists. For more information, please see **Table 3**. Effort was made to conduct field investigations during the flowering periods for the each species to ease in identification.

6.4.3.4 Common Nighthawk

For evaluation of candidate habitat for Common Nighthawk, crepuscular bird breeding surveys were undertaken over two visits from May to early July of 2014 during periods with at least 50% lunar illumination and low cloud cover. These surveys followed the Nightjar Monitoring Protocol provided by the MNR (2011) and generally consisted of point counts where suitable habitat for target species occur and are accessible. Point count locations for these surveys are shown on **Figure B1-7 of Appendix B**.

6.4.3.5 Harlequin Darner

Searches for Harlequin Darner within appropriate habitat were completed both as part of the site investigation and evaluation of significance through incidental observations. These habitats were searched during field surveys and any observations of wildlife were recorded. See Appendix A of the *NHA Site Investigation Report* for field notes. Field surveys were completed by Richard Baxter and Jonathan Harris within these candidate habitats. Both Richard and Jonathan have years of experience conducting field work for renewable energy projects and identifying Species of Conservation Concern in the field. See qualifications in **Table 3**.

6.4.4 Animal Movement Corridors

6.4.4.1 Amphibian Movement Corridors

Amphibian corridors are only considered once wetland Amphibian Breeding Habitat has been evaluated as significant. Until this type of wildlife habitat is evaluated, amphibian corridors are carried forward in this NHA as candidate and treated as significant. Should the wetland Amphibian Breeding Habitat be evaluated as significant, the methodology outlined in Appendix A of the *NHA EIS* would be followed to investigate the area between the significant wetland Amphibian Breeding Habitat and the nearest woodland.

7. NAMES AND QUALIFICATIONS ON SITE INVESTIGATORS

The names and qualifications of all site investigators are outlined in **Table 3** below. All site investigators listed below have been involved with the Project since the initiation of this work and have been involved in numerous renewable energy projects that have received approval under O. Reg. 359/09.

Table 3: Names and Qualifications of Site Investigators

Name:	Richard Baxter (RLB)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • B.Sc. (Resource Management- Fish and Wildlife), University of Northern British Columbia (2007) • Fish and Wildlife Technician Diploma, Sir Sandford Fleming College (2001) • ISA Certified Arborist (member- Ontario Chapter) • Affiliated with Ontario Field Ornithologists, Ontario Field Botanists, and Ontario Nature
Years of Experience	13 (over 30 renewable energy projects)
Project Role:	<ul style="list-style-type: none"> • Amphibian Breeding Surveys • Breeding Bird Surveys • Crepuscular Bird Survey • Incidental Wildlife Observations
Certifications:	<ul style="list-style-type: none"> • Ecological Land Classification for Southern Ontario (2009) • Ontario Wetland Evaluation System Certification (2011) • MNRF Bat Maternity Colony Training (2012) • MNRF Renewable Energy Approvals Natural Heritage Process Workshop (2011) • MNRF Wind Energy and Bats Seminar (2010) • Butternut Health Assessor Certification (2014)
Name:	Jonathan Harris (JWH)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • Fish and Wildlife Technician Diploma • Fish and Wildlife Technology Advanced Diploma • Affiliated with Ontario Field Ornithologists, Ontario Field Botanists, Toronto Field Naturalists, and Ontario Nature
Years of Experience	<ul style="list-style-type: none"> • 8 (over 20 renewable energy projects)
Project Role:	<ul style="list-style-type: none"> • Amphibian Breeding Surveys • Breeding Bird Surveys • Incidental Wildlife Observations
Certifications:	<ul style="list-style-type: none"> • Ecological Land Classification for Southern Ontario (2011) • Ontario Wetland Evaluation System Certification (2012) • MNRF Bat Maternity Colony Training (2012) • Butternut Health Assessor Certification (2014)
Name:	Trevor Goulet (TDG)
Degrees and Professional Designations:	<ul style="list-style-type: none"> • B.Sc. (Env.), Natural Resources Management
Years of Experience	<ul style="list-style-type: none"> • 4
Project Role:	<ul style="list-style-type: none"> • Amphibian Breeding Surveys
Certifications:	<ul style="list-style-type: none"> • Environmental Professional in-training (EPT) • Ecological Land Classification for Southern Ontario (2014)

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Name:	Jeremy Bannon (JBB)
Degrees and Professional Designations:	<ul style="list-style-type: none"> Diploma of Ecological Restoration and rehabilitation, University of Waterloo
Years of Experience	<ul style="list-style-type: none"> 2
Project Role:	<ul style="list-style-type: none"> Amphibian Breeding Surveys
Certifications:	<ul style="list-style-type: none"> Ecological Land Classification for Southern Ontario (2011)
Name:	Kyle Holloway (KEH)
Degrees and Professional Designations:	<ul style="list-style-type: none"> Fish and Wildlife Technician Diploma, Sir Sandford Fleming College (2008) Adv. Diploma, Fish and Wildlife Technology, Sir Sandford Fleming College (2009)
Years of Experience	<ul style="list-style-type: none"> 3
Project Role:	<ul style="list-style-type: none"> Crepuscular Breeding Bird Survey
Certifications:	N/A
Name:	Alisa Fraser (AF)
Degrees and Professional Designations:	<ul style="list-style-type: none"> Ecosystem Management Technician Diploma, Sir Sandford Fleming College (2010) Honours B.Sc. Physical Geography and Environmental Management, University of Toronto (2014)
Years of Experience	<ul style="list-style-type: none"> 1
Project Role:	<ul style="list-style-type: none"> Amphibian Breeding Surveys
Certifications:	<ul style="list-style-type: none"> Ontario Wetland Evaluation System Certification (2013)

Overall, data collected from field evaluation studies of the Project Location in support of the site investigation and evaluation of significance work took place from May to October 2014 (see **Table 4**) and all field notes can be found in Appendix A of the *NHA Site Investigation Report*. Analysis of the data and reporting effort was conducted from August 2014 to October 2014. This *NHA* was led by Jennifer Petruniak, M.Sc. Jennifer is a Biologist with over ten years of experience and has been qualified as an Expert in the *NHA* process for renewable energy facilities by the Environmental Review Tribunal.

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Table 4: Site Evaluation Dates, Times, Duration and Weather Conditions

Date (2014)	Survey Type	Site Investigator	Start Time	Duration (hours)	Weather Conditions (Field Observations)			Weather Conditions (EC* Station)		
					Air Temp. (°C)	Wind (Beaufort Scale)	Cloud Cover (%)	Average Air Temp. (°C)	Wind (Speed/Direction)	Precipitation (mm)
May 1	Amphibian Survey #1	JWH, RLB	21:00	1.5	7	1	100	8.8	41/23	2.0
May 2	Amphibian Survey #1	JWH,	21:00	2	9	1	100	6.9	<31	1.8
May 28	Amphibian Survey #2	JWH, TDG	21:30	2	17	1	60	14.5	N/A	0
May 29	Breeding Bird Survey #1	JWH	06:00	3.25	6	1	20	13.9	<31	N/A
May 29	Amphibian surveys #2	JWH, TDG	21:30	2	16	0	10	13.9	<31	N/A
June 5	Breeding Bird Survey #1	RLB	5:15	5	20	1-3	20	12.3	41/36	0
June 9	Breeding Bird Survey #1	RLB	5:30	5.75	12	1	30	17.2	<31	0
June 10	Breeding Bird Survey #1 Crepuscular Bird Survey # 1	RLB	5:15; 20:30	4; 2	20	2	20	19.7	<31	0
June 19	Breeding Bird Survey # 2	JWH,	7:30	3.5	20	3	20	16.7	32/6	0

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Date (2014)	Survey Type	Site Investigator	Start Time	Duration (hours)	Weather Conditions (Field Observations)			Weather Conditions (EC* Station)		
					Air Temp. (°C)	Wind (Beaufort Scale)	Cloud Cover (%)	Average Air Temp. (°C)	Wind (Speed/Direction)	Precipitation (mm)
June 23	Breeding Bird Survey # 2	RLB	5:30	4	15	2	20	19.6	<31	1.2
June 25	Amphibian Survey #3	JWH, JBB, AF	21:30	2	17	1	N/A	18.1	<31	0
June 26	Breeding Bird Survey #2	JWH	5:45	2.75	13	0	60	19.5	<31	0
June 26	Amphibian Survey #3	JWH, JBB, AF	21:30	2	19	1	20	19.5	<31	0
June 27	Breeding Birds #2	RLB	5:30	4	26	2	40	19.9	<31	0
July 11	Crepuscular Bird Survey #2	KEH	21:45	1.75	15	0	N/A	16.4	<31	0
Total Duration of Field Work				47.5 hours						

*Closest Environment Canada (EC) Weather Station is in Mount Forest, Ontario. All EC Data refers to daily values; n/a indicates the information was not available from an Environment Canada weather station from the date/time of field work.

8. EVALUATION OF SIGNIFICANCE RESULTS

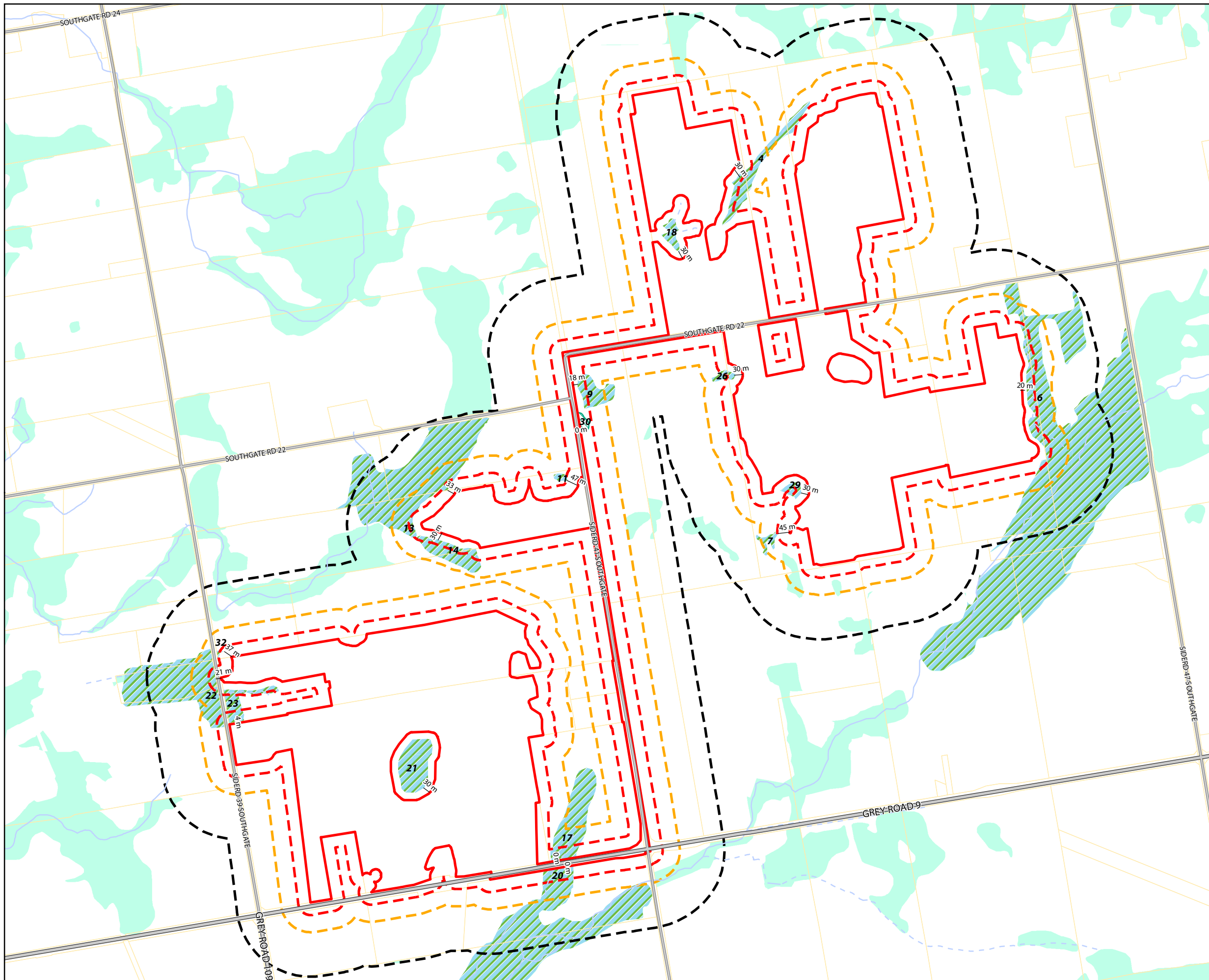
The following sections summarize the results of the evaluation of significance using criteria and procedures accepted by the MNRF. A complete list of species, representative photographs and field notes can be found in the *NHA Site Investigation Report* appendices.

8.1 Wetlands

Southern wetlands that met the minimum size criteria (i.e., ≥ 2 ha) for evaluation, or met the criteria for wetland complexing, were assumed to be provincially significant. Of the 32 distinct wetlands areas that occur within 50 m of the Project Location, the following groupings were compiled:

- Seven (i.e., Wetlands 4, 6, 13, 17, 20, 21, 22) wetlands were greater than two ha;
- Three (Wetlands 9, 14, 23) wetlands were over 0.5 ha and within 750 m of another assumed provincially significant wetland;
- Seven (i.e., Wetlands 7, 11, 18, 26, 29, 30, and 32) wetlands were less than 0.5 ha but contain significant natural features which would warrant inclusion into the wetland complex; and,
- Four (i.e., Wetlands 25, 27, 28, and 31) have been excluded on the basis of size (less than 2 ha). Further supporting this exclusion is based on each not meeting the criteria for being assumed significant based on the wetland complex rule (i.e., wetlands are smaller than 0.5 ha and have no significant features that warrant inclusion into the complex).

Figure 3 identifies those wetlands assumed to be provincially significant. A summary of each wetland documented during the records review and site investigation is provided below in accordance with **Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects** of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF 2012). The purpose of defining the features presented in **Table 5** is to inform the *NHA EIS*. Documents supporting the wetland evaluations are provided in Appendix A of the *NHA Site Investigation Report*.



SOUTHGATE SOLAR PROJECT

**FIGURE 3
SIGNIFICANT WETLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Assumed Provincially Significant Wetland
- Dillon Delineated Wetland (Non-Provincially Significant)
- Unevaluated Wetland



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\EOS



PROJECT: 149154
STATUS: DRAFT
DATE: 12/4/2014

Table 5: Rapid Assessment to Determine Wetland Characteristics and Ecological Functions

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
4	2.15 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.54 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland contains Swamp and Marsh. Wetland is comprised of 62% swamp and marsh type 38%. The OWES wetland types present are treed swamp with deciduous trees the dominant vegetation form, and marsh with narrow-leaved emergents the dominant vegetation form. The ELC communities present are Black Ash Mineral Deciduous Swamp (SWDM2-1) and Mixed Mineral Meadow Marsh (MAMM3-1) which are considered common vegetation communities in Ontario.	Palustrine This palustrine wetland appears to be connected to wetland 25 through seasonal overland flow. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *H – <i>Fraxinus nigra</i> , <i>Tilia americana</i> , <i>Ulmus americana</i> Gc – <i>Matteuccia struthiopteris</i> , <i>Onoclea sensibilis</i> , <i>Athyrium filix-femina</i> var. <i>angustum</i> Ne – <i>Poa palustris</i> , <i>Carex vulpinoidea</i> , <i>Equisetum arvense</i> 2. Ls – <i>Cornus sericea</i> ssp. <i>sericea</i> , <i>Spiraea alba</i> var. <i>alba</i> *Ne – <i>Phalaris arundinacea</i>	32 m to Wetland Unit 25	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the Project Location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine and contains mineral silt soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Woodland Area- Sensitive Bird Breeding Habitat Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present
6	39.7 Wetland boundaries were delineated	Wetland consists of Swamp. Wetland is comprised of 100%	Palustrine This palustrine wetland likely	1. H – <i>Betula alleghaniensis</i> var. <i>falax</i> , <i>Acer saccharinum</i> *C – <i>Abies</i>	42 m to Wetland Unit 28	Interspersion count of 218 intersections. The interspersion	Type 1 (less than 5% of wetland area).	Wetland unit is small in comparison to its upstream catchment area of	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The	This swamp contains a permanent watercourse. Shoreline	The wetland unit is palustrine and contains mineral silty sand soils, meaning the unit	No rare species were observed in this wetland unit. Common	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized 	A permanent watercourse is present in this wetland that may provide

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	during fieldwork and it was found that the wetland does not occur within project location. 1.84 ha of the wetland unit occurs within 50 m of the project location.	swamp type. The OWES wetland type is a treed swamp, with coniferous trees the dominant vegetation form. The ELC community present is Balsam Fir Hardwood Mixed Mineral Swamp (SWMM5-1) which is considered a common vegetation community in Ontario.	experiences seasonal overland drainage towards the watercourse that flows through it. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	<i>balsamea, Thuja occidentalis</i> Gc – <i>Onoclea sensibilis,</i> <i>Matteuccia struthiopteris</i>		value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	vegetation is treed providing strong shoreline erosion control.	may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	Candidate Significant Wildlife Habitat	spawning and migration/ staging habitat. This permanent watercourse is located outside of the 50 m setback and will not be impacted by the development of the Southgate Solar Project.
7	0.31 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.004 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with narrow-leaved emergents the dominant vegetation form. The ELC community present is Reed Canary Grass Mineral Shallow Marsh (MASM1-14) which is considered a common	Isolated This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly change the inputs of water to or from the	1. *Ne – <i>Phalaris arundinacea,</i> <i>Carex</i> sp. Be – <i>Iris versicolor</i> F – <i>Persicaria amphibia</i> var. <i>emersa</i>	36 m to wetland unit to south east	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 2 (5-25% of wetland area) The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is isolated and contains mineral sandy soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
		vegetation community in Ontario.	wetland unit.					attenuation benefits.						
9	1.27 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.33 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with tall shrub the dominant vegetation form. The ELC community present is Willow Mineral Deciduous Thicket Swamp (SWTM3) which is considered a common vegetation community in Ontario.	Palustrine This wetland appears to have seasonal overland flow connection to wetland 30. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Ts – <i>Salix</i> sp.	25 m to Wetland Unit 30	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present
11	0.14 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.004 ha of the wetland unit occurs within 50	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with deciduous trees the dominant vegetation form. The ELC community present is Green Ash Mineral	Isolated This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not	1. *H – <i>Fraxinus pennsylvanica</i> Ls – <i>Rubus sachalinensis var. sachalinensis</i> Gc – <i>Ranunculus acris</i> , <i>Impatiens capensis</i>	181 m to Wetland Unit 30	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not	N/A – no shoreline is present in the wetland	The wetland unit is isolated, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare	<ul style="list-style-type: none"> Woodland Area-Sensitive Bird Breeding Habitat Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	m of the project location.	Deciduous Swamp (SWDM2-2) which is considered a common vegetation community in Ontario.	significantly change the inputs of water to or from the wetland unit.			interspersion value will persist with the development of the Southgate Solar Project.	open water.	peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	require input of chemicals to adjacent lands.			species.		
13	12.22 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.23 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with coniferous trees the dominant vegetation form. The ELC communities present are White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) and White Cedar Hardwood Organic Mixed Swamp (SWMO1-1) which are considered common vegetation communities in Ontario.	Palustrine This palustrine wetland likely experiences seasonal overland drainage towards the watercourse that flows through it. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. H – <i>Fraxinus nigra</i> , <i>Acer rubrum</i> , <i>Betula alleghaniensis</i> var. <i>falax</i> *C – <i>Thuja occidentalis</i> , <i>Abies balsamea</i> Ts – <i>Sambucus canadensis</i> Gc – <i>Dryopteris cristata</i> , <i>Osmunda regalis</i> var. <i>spectabilis</i> , <i>Caltha palustris</i> , <i>Impatiens capensis</i> , <i>Coptis trifolia</i> Ne – <i>Carex</i> sp. 2. H – <i>Acer rubrum</i> , <i>Fraxinus pennsylvanica</i> , <i>Populus tremuloides</i> *C – <i>Thuja occidentalis</i> , <i>Larix laricina</i> , <i>Tsuga canadensis</i> , <i>Abies balsamea</i> Gc – <i>Maianthemum</i>	6 m to Wetland Unit 14	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	This swamp contains a permanent watercourse. Shoreline vegetation is treed providing strong shoreline erosion control.	The wetland unit is palustrine with organic soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Woodland Area-Sensitive Bird Breeding Habitat Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	A permanent watercourse is present in this wetland that may provide spawning and migration/ staging habitat. This permanent watercourse is located outside of the 50 m setback and will not be impacted by the development of the Southgate Solar Project.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
				<i>canadense, Dryopteris cristata, Caltha palustris, Aralia nudicaulis, Thelypteris palustris var. pubescens</i>										
14	1.73 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.55 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with coniferous trees the dominant vegetation form. The ELC community present is White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) which is considered a common vegetation community in Ontario.	Palustrine This palustrine wetland likely experiences seasonal overland drainage towards the watercourse that flows through it. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. H – <i>Acer rubrum, Fraxinus pennsylvanica, Populus tremuloides</i> *C – <i>Thuja occidentalis, Larix laricina, Tsuga canadensis, Abies balsamea</i> Gc – <i>Maianthemum canadense, Dryopteris cristata, Caltha palustris, Aralia nudicaulis, Thelypteris palustris var. pubescens</i>	6 m to Wetland Unit 13	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine and contains mineral sand soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Woodland Area-Sensitive Bird Breeding Habitat Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present
17	3.54 Wetland boundaries were delineated	Wetland is Swamp. Wetland is comprised of 100% swamp type.	Palustrine This wetland likely has	1. *H – <i>Ulmus americana, Fraxinus pennsylvanica, Populus</i>	30 m to Wetland Unit 20	Interspersion count of 218 intersections. The interspersion	Type 1 (less than 5% of wetland area).	Wetland unit is small in comparison to its upstream catchment area of	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The	N/A – no shoreline is present in the wetland	The wetland unit is palustrine, meaning the unit may be valuable as a source of	No rare species were observed in this wetland unit.	<ul style="list-style-type: none"> Generalized Candidate Significant Wildlife 	N/A – no fish spawning or migration/staging habitat

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	during fieldwork and it was found that the wetland does not occur within project location. 0.54 ha of the wetland unit occurs within 50 m of the project location.	The OWES wetland type is a swamp with deciduous trees the dominant vegetation form. The ELC community present is White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) which is considered a common vegetation community in Ontario.	seasonal overland flow connection with Wetland 20. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	<i>tremuloides</i> C – <i>Thuja occidentalis</i> Ts – <i>Salix bebbiana</i> Ne – <i>Phalaris arundinacea</i> , <i>Glyceria striata</i> Re – <i>Typha latifolia</i> Gc – <i>Onoclea sensibilis</i> , <i>Solanum dulcamara</i>		value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.		groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	Habitat	is present
18	0.47 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.47 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with robust emergents the dominant vegetation form. The ELC community present is Cattail Graminoid Mineral Meadow Marsh (MAMM1-2) which is considered a common vegetation community in Ontario.	Palustrine This wetland appears to receive water from ephemeral watercourse drainage. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Re – <i>Typha</i> sp. Ne – <i>Phalaris arundinacea</i>	120 m to Wetland Unit 25	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 2 (5-25% of wetland area) The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
20	37.57 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.62 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with deciduous trees the dominant vegetation form. The ELC community present is White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) which is considered a common vegetation community in Ontario.	Palustrine This wetland likely has seasonal overland flow connection with Wetland 17. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *H – <i>Ulmus americana</i> , <i>Fraxinus pennsylvanica</i> , <i>Populus tremuloides</i> C – <i>Thuja occidentalis</i> Ts – <i>Salix bebbiana</i> Ne – <i>Phalaris arundinacea</i> , <i>Glyceria striata</i> Re – <i>Typha latifolia</i> Gc – <i>Onoclea sensibilis</i> , <i>Solanum dulcamara</i>	30 m to Wetland Unit 17	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present
21	2.3 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 2.3 ha of the wetland unit occurs within 50 m of the project location.	Wetland contains Swamp and Marsh. Wetland is comprised of 70% swamp type and 30% marsh type. The OWES wetland types are swamp with deciduous trees the dominant vegetation form and marsh with narrow-leaved emergents the dominant form. The ELC	Isolated This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly	1. *H – <i>Populus tremuloides</i> Dh – dead deciduous trees Ls – <i>Cornus sericea ssp. sericea</i> , <i>Rhamnus cathartica</i> Gc – <i>Onoclea sensibilis</i> , <i>Impatiens capensis</i> Ne – <i>Phalaris arundinacea</i> , <i>Equisetum arvense</i> , <i>Carex crinita</i> Ff – <i>Lemna minor</i>	559 m to Wetland Unit 23	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the	Type 5 (26-75% of wetland area occurring in an irregular pattern) The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks. Due to its isolated	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to	N/A – no shoreline is present in the wetland	The wetland unit is isolated and contains mineral sand soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Turtle Nesting Area Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
		communities present are Poplar Mineral Deciduous Swamp (SWDM4-5); Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3) which are considered common vegetation communities in Ontario.	change the inputs of water to or from the wetland unit.	2. Ts – <i>Salix eriocephala</i> , <i>Salix bebbiana</i> , <i>Salix petiolaris</i> *Ne – <i>Phalaris arundinacea</i> , <i>Scirpus cyperinus</i>		development of the Southgate Solar Project.	open water.	nature this wetland unit will provide maximum attenuation benefits.	adjacent lands.					
22	2.22 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.35 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with coniferous trees the dominant vegetation form. The ELC community present is Tamarack Organic Coniferous Swamp (SWCO2-2) which is considered a common vegetation community in Ontario.	Palustrine This wetland likely has seasonal overland flow connection with Wetland 23. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *C – <i>Larix laricina</i> , <i>Thuja occidentalis</i> Gc – <i>Impatiens capensis</i> , <i>Caltha palustris</i> , <i>Rubus pubescens</i> Ne – <i>Phalaris arundinacea</i> , <i>Carex flava</i> , <i>Carex vulpinoidea</i>	19 m to Wetland Unit 23	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine and contains organic soils, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present
23	1.15 Wetland boundaries	Wetland contains Swamp and Marsh. Wetland is	Palustrine This wetland likely has	1. H – <i>Acer rubrum</i> , <i>Betula alleghaniensis</i> var. <i>falax</i>	19 m to Wetland Unit 22	Interspersion count of 118 intersections. The	Type 2 (5-25% of wetland area)	Wetland unit is small in comparison to its upstream	Catchment area determined to be >50% agricultural (cropland, hayfield	N/A – no shoreline is present in	The wetland unit is palustrine and contains organic soils, meaning	No rare species were observed in this wetland unit.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) 	N/A – no fish spawning or migration/ staging habitat

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.71 ha of the wetland unit occurs within 50 m of the project location.	comprised of 68% swamp type and of 32% marsh type. The OWES wetland types are swamp dominated by coniferous trees and marsh dominated by narrow-leaved emergents. The ELC communities for the wetland unit are White Cedar Hardwood Organic Mixed Swamp (SWMO1-1); Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3) which are considered common vegetation communities in Ontario.	seasonal overland flow connection with Wetland 22. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	<p>*C – <i>Thuja occidentalis</i>, <i>Picea glauca</i>, <i>Tsuga canadensis</i> Gc – <i>Impatiens capensis</i>, <i>Caltha palustris</i>, <i>Mitella nuda</i>, <i>Aralia nudicaulis</i></p> <p>2. *Ne – <i>Phalaris arundinacea</i></p>		interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	the wetland	the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Generalized Candidate Significant Wildlife Habitat 	is present
26	0.25 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.13 ha of the	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with robust emergents the dominant vegetation form. The ELC	Isolated This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction	<p>1. Ne – <i>Phalaris arundinacea</i>, <i>Carex</i> sp. Be – <i>Caltha palustris</i> *Re – <i>Typha latifolia</i></p>	308 m to wetland unit to south west	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the	N/A – no shoreline is present in the wetland	The wetland unit is isolated and contains mineral silt soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	wetland unit occurs within 50 m of the project location.	community present is Cattail Graminoid Mineral Meadow Marsh (MAMM1-2) which is considered a common vegetation community in Ontario.	of the solar facility will not significantly change the inputs of water to or from the wetland unit.			form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	increase the value of the wetland unit's open water.	be removed the unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.		unit's ability to recharge groundwater will remain the same.	not expected to impact rare species.		
29	0.32 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.24 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with robust emergents the dominant vegetation form. The ELC community present is Cattail Mineral Shallow Marsh (MASM1-1) which is considered a common vegetation community in Ontario.	Isolated This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly change the inputs of water to or from the wetland unit.	1. Ne – <i>Phalaris arundinacea</i> , <i>Carex</i> sp. *Re – <i>Typha latifolia</i> Ff – <i>Lemna minor</i>	150 m to Wetland Unit 7	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is isolated, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present
30	0.22 Wetland boundaries were delineated during	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland	Palustrine The construction of the solar facility will	1. *Ts – <i>Salix</i> sp.	25 m to Wetland Unit 9	Interspersion count of 218 intersections. The interspersion value used was	Type 4 (26-75% of wetland area)	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water	N/A – no shoreline is present in the wetland	The wetland unit is palustrine, as such the unit may be valuable as a source of groundwater	No rare species were observed in this wetland unit. Common Snapping Turtle	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate 	N/A – no fish spawning or migration/ staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	fieldwork and it was found that the wetland does not occur within project location. 0.22 ha of the wetland unit occurs within 50 m of the project location.	type is a swamp with tall shrub the dominant vegetation form. The ELC community present is Willow Mineral Deciduous Thicket Swamp (SWTM3) which is considered a common vegetation community in Ontario.	not significantly change the flow of water to or from the wetland unit.			for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.		recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	Significant Wildlife Habitat	
32	0.04 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.01 ha of the wetland unit occurs within 50 m of the project location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with narrow-leaved emergent the dominant vegetation form. The ELC community present is Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3) which is considered a common vegetation community in Ontario.	Palustrine This wetland may have seasonal overland flow connection with Wetlands 22 and 23. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Ne - <i>Phalaris arundinacea</i>	20 m to Wetland Unit 22	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland	The wetland unit is palustrine, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present

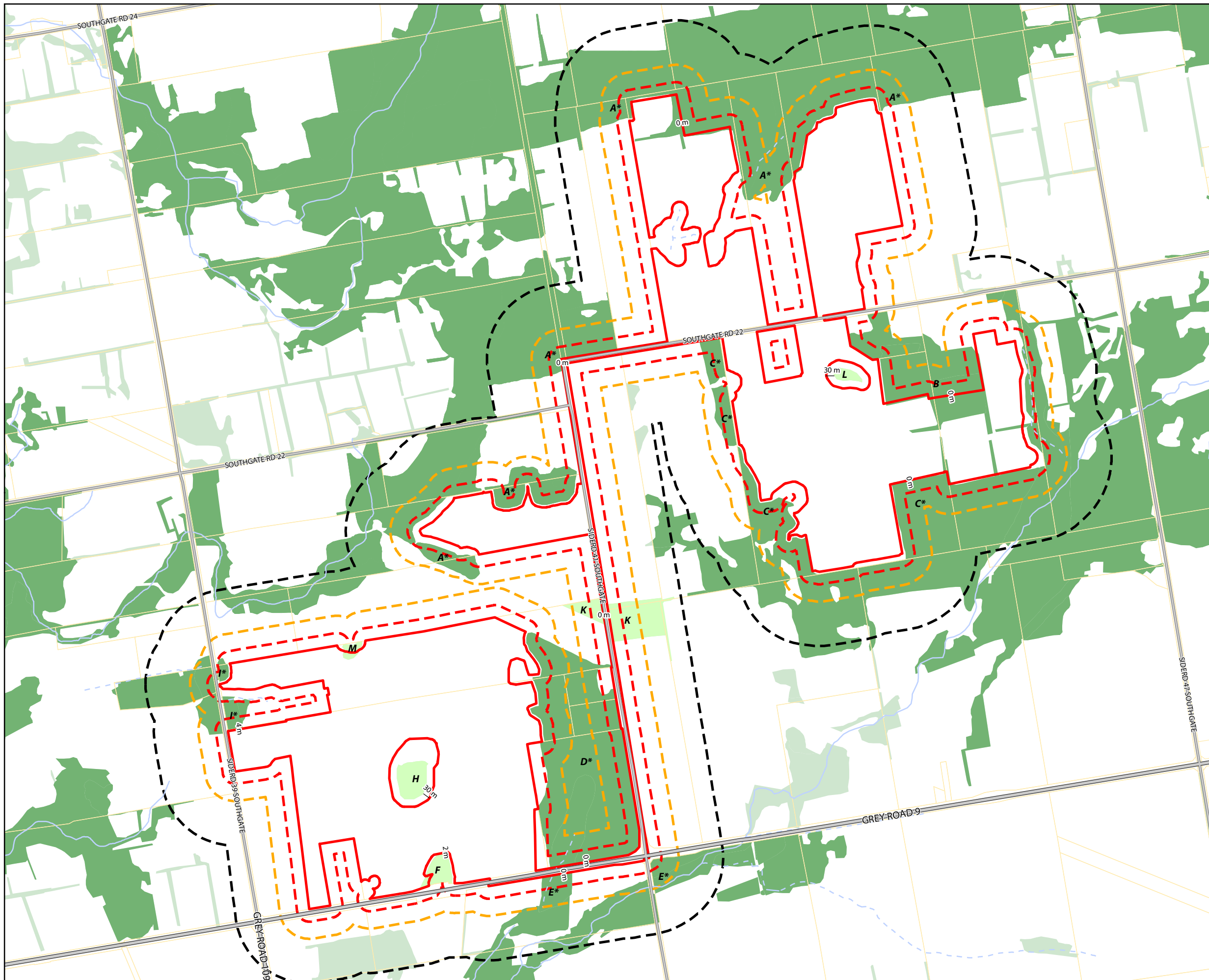
8.2 Woodlands

For this evaluation of significance, the definition of woodlands is as defined in the January 1, 2011 amendments to O. Reg. 359/09. As such, the estimate of woodland cover within the Township of Southgate is between 31% and 36% (Saugeen Valley Conservation Authority 2013). Grey County has set out criteria to determine the significance of woodlands. Since the criteria set out by Grey County are more stringent than those set out in *MNR's Natural Heritage Assessment Guide for Renewable Energy Projects* (2012), Grey County criteria will be also be considered for the purposes of this report. The County of Grey states that, in order for a woodland to be considered significant, it must be greater than or equal to 40 ha (outside the settlement areas). If a woodland fails to meet that criteria, it was considered significant if it met any two of the following criteria:

- a) Proximity to other woodlands (within 30 m of another significant woodland);
- b) Overlap with other natural heritage features (provincially significant wetlands, ANSI's, etc.); or
- c) Interior habitat of greater than or equal to 8 ha, with a 100 m interior buffer on all sides.

The criteria being considered are included in **Table 6**. Significant woodlands are identified by ID numbers as per **Figure 4**. As outlined in **Table 6**, Woodlands A and C are both considered significant on the basis of size and ecological functions, Woodland B is considered significant based on its proximity to Woodland C, Woodland D is considered significant based on the presence of significant natural features, and Woodlands E and I are considered significant based on its meeting the criterion for water protection. The rest of the woodlands are not considered to be significant due their small size and inability to meet any of the criteria for significance.

Based on a review of the woodlands identified by Grey County, Woodland K was previously identified as significant. Following Dillon's delineation of the woodland boundaries within 50 m of the Project Location and subsequent application of the evaluation criteria for woodlands (see **Table 6** below), it was determined that Woodland K does not meet the criteria for significance according to the criteria in the *MNR's Natural Heritage Assessment Guide for Renewable Energy Projects* (2012) or after applying the Grey County criteria outlined above.



SOUTHGATE SOLAR PROJECT

**FIGURE 4
SIGNIFICANT WOODLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Significant Woodland
- Dillon Delineated Woodland (Non-Significant)
- Unevaluated Woodland

Note: * indicates woodland was also evaluated as significant in the Grey County Official Plan



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\EOS



PROJECT: 149154
STATUS: DRAFT
DATE: 3/17/2015

Table 6: Evaluation of Woodlands within 50 m of the Project Location

Woodland ID	Size Criterion		Ecological Function Criteria				Woodland Uncommon Characteristics (0.5 – 4 ha)	Project Components within 50 m	Evaluation of Significance	
	Woodland Size (ha) (≥40 ha)	Woodland Interior (ha) (8 ha)	Proximity to Other Significant Woodlands (≥30 m) or Habitats (10 ha)	Linkages (10 ha)	Water Protection (4 ha)	Woodland Diversity Representation (10 ha)			Significant	Not Significant
A	409.48	102.41	<ul style="list-style-type: none"> Woodland Area-sensitive Bird Breeding Habitat Red- Headed Woodpecker Habitat American Gromwell Habitat* Generalized Candidate Significant Wildlife Habitat 	Woodland A is large and provides direct connectivity to other woodland to the east and west within Grey County.	Woodland contains an ephemeral watercourse within a wetland and has other mapped watercourses traversing the feature	Identified as Fresh-Moist Sugar Maple Deciduous (FODM6-5); Dry-Fresh Sugar Maple- Black Cherry Deciduous (FODM5-7); Coniferous Plantation (TAGM1); Black Ash Deciduous Swamp (SWDM2-1). Dominant canopy species include Sugar Maple (<i>Acer saccharum</i>), White Pine (<i>Pinus strobus</i>) and Black Ash (<i>Fraxinus nigra</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Inverter station Main HV Substation Overhead cable Area of Operational Flexibility 	✓	
B	12.59	0.34	Woodland is within 30 m of another significant woodland (Woodland C).	Woodland is not between two other significant features within 120 m.	Woodland does not contain any notable surface water and is not identified as a source water protection area.	Identified as Dry-Fresh White Pine Naturalized Coniferous (FOCM6-1); Dry-Fresh Deciduous Woodland (WODM4). Dominant canopy species include White Pine, Sugar Maple and Manitoba Maple (<i>Acer negundo</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Inverter station Area of Operational Flexibility 	✓	
C	584.53	83.20	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Western Chorus Frog was heard in a wetland unit within this woodland (an unnumbered wetland unit outside of 50 m setback). Generalized Candidate Significant Wildlife Habitat 	Woodland C is large and is connected to other woodlots to the southwest and north east via a watercourse.	Woodland contains several wetland units with standing water and a permanent watercourse flows through its southeast corner.	Identified as Dry-Fresh Sugar Maple Deciduous (FODM5-1); Dry-Fresh Sugar Maple Hardwood Deciduous (FODM5-9); Balsam Fir Hardwood Mixed Mineral (SWMM5-1); and Dry-Fresh Deciduous Woodland (WODM4). Dominant canopy species include Sugar Maple and Balsam Fir (<i>Abies balsamea</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Inverter station Area of Operational Flexibility 	✓	

Woodland ID	Size Criterion		Ecological Function Criteria				Woodland Uncommon Characteristics (0.5 – 4 ha)	Project Components within 50 m	Evaluation of Significance	
	Woodland Size (ha) (≥40 ha)	Woodland Interior (ha) (8 ha)	Proximity to Other Significant Woodlands (≥30 m) or Habitats (10 ha)	Linkages (10 ha)	Water Protection (4 ha)	Woodland Diversity Representation (10 ha)			Significant	Not Significant
D	28.49	7.95	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland)* Soft-hairy False Gromwell Habitat* Harlequin Darner Habitat* Generalized Candidate Significant Wildlife Habitat 	Woodlot D is within 120 m of various wildlife habitat treated as significant in this NHA. It likely provides a linkage function in the landscape and meets this criterion	Woodland does not contain any notable surface water and is not identified as a source water protection area.	Identified as Fresh-Moist Sugar Maple Hardwood Deciduous (FODM6-5); and White Cedar Hardwood Mixed Mineral (SWMM1-1). Dominant canopy species include Sugar Maple and Eastern White Cedar (<i>Thuja occidentalis</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Area of Operational Flexibility 	✓	
E	35.52	0	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland)* Harlequin Darner Habitat* Generalized Candidate Significant Wildlife Habitat 	Woodland E is large and is connected to other woodlands to the southwest and north east via a watercourse.	Woodland contains a permanent watercourse.	Identified as Mixed Swamp (SWM); and White Cedar Hardwood Mixed Mineral (SWMM1-1). Dominant canopy species include Eastern White Cedar and White Elm (<i>Ulmus americana</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Overhead cable Area of Operational Flexibility 	✓	
F	1.10	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland is not identified as a source protection area.	Identified as Dry-Fresh Sugar Maple Deciduous Woodland (WODM4-3). Dominant canopy species include Sugar Maple and Black Cherry (<i>Prunus serotina</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Area of Operational Flexibility 		✓
H	1.61	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland is not identified as a source protection area.	Identified as Poplar Mineral Deciduous Swamp (SWDM4-5). Dominant canopy species is Trembling Aspen (<i>Populus tremuloides</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads 		✓
I	7.75	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland has an intermittent watercourse associated with it that may	Identified as White Cedar Hardwood Organic Mixed Swamp (SWMO1-1).	No uncommon characteristics.	<ul style="list-style-type: none"> Area of Operational Flexibility 	✓	

Woodland ID	Size Criterion	Ecological Function Criteria					Woodland Uncommon Characteristics (0.5 – 4 ha)	Project Components within 50 m	Evaluation of Significance	
		Woodland Size (ha) (≥40 ha)	Woodland Interior (ha) (8 ha)	Proximity to Other Significant Woodlands (≥30 m) or Habitats (10 ha)	Linkages (10 ha)	Water Protection (4 ha)			Woodland Diversity Representation (10 ha)	Significant
					contribute to fish habitat. The watercourse is fed by a groundwater seep.	Dominant canopy species include Eastern White Cedar and Yellow Birch (<i>Betula alleghaniensis</i> var. <i>falax</i>).				
K	4.16	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland does not contain any notable surface water and is not identified as a source water protection area.	Identified as Fresh-Moist Sugar Maple Hardwood Deciduous Forest (FODM6-5). Dominant canopy species include Sugar Maple and Black Cherry.	No uncommon characteristics.	- Overhead cable		✓
L	0.43	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland is not identified as a source protection area.	Identified as Poplar Mineral Deciduous Swamp (SWDM4-5)/ Red-Osier Dogwood Deciduous Thicket Swamp Complex (SWTM2-1). Dominant canopy species is Trembling Aspen (<i>Populus tremuloides</i>).	No uncommon characteristics.	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility		✓
M	0.39	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland is not identified as a source protection area.	Identified as Fresh-Moist Manitoba Maple Deciduous Woodland (WODM5-3). Dominant canopy species is Manitoba Maple.	No uncommon characteristics.	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility		✓

8.3 Wildlife Habitat

As discussed in **Section 6.4**, wildlife habitat was assessed using the Significant Wildlife Habitat Technical Guide (MNR 2000) and the associated Ecoregion 6E Criteria Schedules (MNR 2012). Candidate wildlife habitat was scoped by applying the criteria found within the above technical guide and its associated appendices, to the site conditions in the Project Location and surrounding lands determined through field work (**Table 7**). Where appropriate studies to determine the significance of a wildlife habitat have not been conducted, wildlife habitat has been treated as significant. For natural features treated as significant, pre-construction surveys will be undertaken to confirm their status and mitigation measures for environmental effects will be outlined in the *NHA EIS*. Details of the evaluation are outlined in **Table 7**. Field notes are available in **Appendix B2** to supplement the details outlined in **Table 7**.

Table 7: Significant Wildlife Habitat Located in the Project Location and 50 m Setback

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Seasonal Concentration Areas										
Colonially Nesting Bird Breeding Habitat (Ground) CNG1	Nesting colonies of gulls and terns on islands or peninsulas associated with open water or in marshy areas. Brewer's Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farm lands. Any rocky island or peninsula within a lake or large river, in close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Meadow (ME), Thicket (TH), Savannah (SV).	This candidate habitat runs along a stream and is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh and is found within 50 m of the Project Location.	---	✓	---	---	✓	Species of terns and gulls were identified in the Southgate area through screening of background material, however, no terns, gulls, or Brewer's Blackbirds were observed during breeding bird surveys. See field notes and Figure B1-1 in Appendix B .	- Perimeter fence - Solar panels - Area of Operational Flexibility	30 m
Colonially Nesting Bird Breeding Habitat (Ground) CNG2	Significant wildlife habitat defining criteria: Species of Conservation Concern: Great Black-backed Gull Little Gull Caspian Tern Forster's Tern Brewer's Blackbird	This candidate habitat runs alongside a stream and is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh and is found within 50 m of the Project Location.	---	✓	---	---	✓		- Area of Operational Flexibility	30 m
Turtle Wintering Areas TWA1, TWA2	Over-wintering sites are permanent water bodies, large wetlands, and bogs and fens with adequate dissolved oxygen. Water has to be deep enough not to freeze and have soft mud substrates. These habitats are found in the following Community Types: Swamp (SW), Marsh (MA), Open Water (OA), Shallow Water (SA), Open Fen (FEO), Open Bog (BOO). Significant wildlife habitat defining criteria: <ul style="list-style-type: none">• Presence of 5 wintering Midland Painted Turtles• One or more Northern Map Turtles or Snapping Turtles	These candidate habitats are in OAO communities within the southern portion of the Project Location.	✓	---	---	✓	---	Since turtle basking surveys were not conducted in this habitat during the 2014 season, these habitats will be treated as significant and carried forward to the EIS. Pre-construction surveys will be conducted to determine significance of these habitats. See Figure 5A .	- Access roads - Area of Operational Flexibility	0 m
Specialised Habitat for Wildlife										
Turtle Nesting Areas TNA1	For an area to function as a turtle nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road	Meadow Marsh (MAM) with exposed mineral soil area is found within the 50	---	✓	---	✓	---	Since turtle basking surveys were not conducted in this habitat during the 2014 season, these habitats will be treated as significant and carried forward to the EIS.	- Perimeter fence - Solar panels	30 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
	<p>embankments and shoulders are not significant wildlife habitat. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes and rivers are most frequently used. Exposed mineral soil (sand or gravel) areas <100 m from or within the following Community Types: Mineral or Organic Meadow Marsh (MAM or MAO), Shallow Marsh (MAS), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO).</p> <p>Significant wildlife habitat defining criteria:</p> <ul style="list-style-type: none"> • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH. 	m setback of the Project Location.						<p>Pre-construction surveys will be conducted to determine significance of these habitats.</p> <p>See Figure 5B.</p>	<ul style="list-style-type: none"> - Access roads - Inverter station 	
Woodland Raptor Nesting Area WRNA1	<p>All natural or conifer plantation woodland. Forest stands >30 ha with >10 ha of interior habitat. Interior habitat is determined with a 200 m buffer the edge of the woodland.</p> <p>Significant wildlife habitat determining criteria:</p> <ul style="list-style-type: none"> • Presence of 1 or more active nests from species list is considered significant. 	This candidate habitat is found in Woodland A which is a mix of Forest (FOD) and Treed Swamp (SWM) communities with an overall size of >100 ha with >10 ha of interior forest.	✓	✓	---	---	✓	<p>Breeding bird surveys were conducted within Woodland A during the 2014 breeding bird season. Wildlife species specific to this habitat were not observed during these surveys. During snag density searches and general wildlife habitat observations in April/May of 2014 within this habitat, 2 stick nests were identified, however, they did not appear to be active.</p> <p>Therefore, this habitat is not significant.</p> <p>See field notes and Figure B1-2 in Appendix B.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Overhead cable - Area of Operational Flexibility 	0 m
Amphibian Breeding Habitat (Wetland) ABHWE1	<p>Wetlands and pools isolated from woodlands with presence of shrubs, logs available for calling, foraging, and escape/concealment from predators. Bullfrogs require permanent water bodies with an abundance of emergent vegetation. Associated with any of the following ELC communities: Swamp (SW), Marsh (MA), Fen (FE), Bog (BO), Open Water (OA), Shallow Aquatic (SA), including vernal pools,</p>	This candidate habitat is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh and OAO Open Aquatic and is found within the surrounding 50 m of the	---	✓	---	✓	---	<p>Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i>. See Appendix B, Figure B1-3. Surveys will be conducted prior to construction, to determine significance.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	7 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
	that are >500 m ² or 25 m in diameter, and located >120 m from woodlands.	Project Location.						See Figure 5C .		
Amphibian Breeding Habitat (Wetland) ABHWE2	<p>Significant wildlife habitat defining criteria:</p> <ul style="list-style-type: none"> • Presence of breeding population of 1 or more of the listed salamander species or 3 or more of the listed frog or toad species and with at least 20 breeding individuals (adults, juveniles, eggs/larval masses) or; • Wetland with confirmed breeding Bullfrogs are significant. <p><u>Wildlife species to be considered:</u></p>	This candidate habitat is made up of MAMM3-1 Mixed Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	<p>Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i>. See Appendix B, Figure B1-3. Surveys will be conducted prior to construction, to determine significance.</p> <p>See Figure 5C.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility 	8 m
Amphibian Breeding Habitat (Wetland) ABHWE3	<p>Eastern Newt</p> <p>American Toad</p> <p>Spotted Salamander</p> <p>Four-toed Salamander</p> <p>Blue-spotted Salamander</p> <p>Gray Treefrog</p> <p>Western Chorus Frog</p> <p>Northern Leopard Frog</p> <p>Pickerel Frog</p> <p>Green Frog</p>	This candidate habitat is made up of SWDM4-5 Poplar Mineral Deciduous Swamp/SWTM2-1 Red-osier Dogwood Deciduous Thicket Swamp Complex and is found within the surrounding 50 m of the Project Location.	---	✓	---	---	✓	<p>During amphibian surveys on May 2, 2014, May 29 2014 and June 25, 2014 from amphibian survey station 17 (see Appendix B, Figure B1-3), 2 listed species of wildlife were recorded (American Toad and Green Frog). However, there were not enough individuals for significance (<20 breeding individuals). Therefore, this habitat is not significant. See field notes in Appendix B.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	30 m
Amphibian Breeding Habitat (Wetland) ABHWE5	<p>Mink Frog</p> <p>Bullfrog</p> <p>Species of Conservation Concern:</p> <p>Western Chorus Frog</p>	This candidate habitat is made up of MAMM3-1 Mixed Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	✓	✓	---	✓	---	<p>Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i>. See Appendix B, Figure B1-3. Surveys will be conducted prior to construction, to determine significance.</p> <p>See Figure 5C.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	5 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Amphibian Breeding Habitat (Wetland) ABHWE6		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Overhead cable	18 m
Amphibian Breeding Habitat (Wetland) ABHWE7		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Overhead cable	0 m
Amphibian Breeding Habitat (Wetland) ABHWE8		This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Overhead cable - Area of Operational Flexibility	0 m
Amphibian Breeding Habitat (Wetland) ABHWE9		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	✓	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Access road - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Amphibian Breeding Habitat (Wetland) ABHWE10		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	✓	✓	---	---	✓	This candidate habitat is only 0.03 ha and therefore is too small to meet the size criteria for significance (i.e., <500 m ² or 0.05 ha).	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Amphibian Breeding Habitat (Wetland) ABHWE11		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Area of Operational Flexibility	9 m
Amphibian Breeding Habitat (Wetland) ABHWE12		This candidate habitat is made up of MAMM1-3 Reed Canary Grass Graminoid mineral Meadow Marsh and SWMO1-1 White Cedar Hardwood Organic mixed Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Access roads - Area of Operational Flexibility	4 m
Amphibian Breeding Habitat (Wetland) ABHWE13		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Amphibian Breeding Habitat (Wetland) ABHWE14		This candidate habitat is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Area of Operational Flexibility	30 m
Amphibian Breeding Habitat (Woodland) ABHWO1	The presence of a wetland, lake or pond within or adjacent to (within 120 m) a woodland that contains permanent ponds or contains water in most years until mid-July are most likely to be used as breeding habitat. Significant wildlife habitat defining criteria: • Presence of breeding population of 1 or more of the listed species with at least 20 individuals (adults, juveniles, eggs/larval masses). <u>Wildlife species to be considered:</u> Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Wood Frog	This candidate habitat is made up of MAMM3-1 Mixed mineral Meadow Marsh and SWDM2-1 Black Ash Mineral Deciduous Swamp/MAMM3-1 Mixed Mineral Meadow Marsh complex wetlands that are contained in a FODM5-7 Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest/FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback.	✓	✓	✓	---	---	During amphibian surveys on May 2, 2014 and May 29 2014 from amphibian survey station 16, 3 of the listed wildlife species were recorded (Gray Treefrog, Spring Peeper and Wood Frog) This habitat is considered significant as at least 20 breeding individuals were noted. See survey locations and field notes in Appendix B2 . See Figure 5D .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Amphibian Breeding Habitat (Woodland) ABHWO2	Western Chorus Frog Species of Conservation Concern: Western Chorus Frog	This candidate habitat is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh, MASM1-14 Reed Canary Grass Mineral Shallow Marsh and SWMM5-1 Balsam Fir Hardwood Mixed Mineral Swamp wetlands that are contained in a woodland consisting of FODM5-1 Dry Fresh Sugar Maple-Black	---	✓	✓	---	---	During amphibian surveys on May 2, 2014 and May 29 2014 from amphibian survey station 22, 3 of the listed wildlife species were recorded (Gray Treefrog, Spring Peeper and Wood Frog) This habitat is considered significant as at least 20 breeding individuals were noted. See survey locations and field notes in Appendix B2 . See Figure 5D .	- Perimeter fence - Solar panels - Access roads - Main HV substation	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
		Cherry Deciduous Forest, FODM5-9 Dry-Fresh Sugar Maple Hardwood Deciduous Forest and WODM4 Dry-Fresh Deciduous Woodland. This habitat exists within the 50 m setback of the Project Location.								
Amphibian Breeding Habitat (Woodland) ABHWO3		This candidate habitat is made up of SWDM2-2 Green Ash Mineral Deciduous Swamp, SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp wetlands that are contained in a FOCM4-1 Fresh-Moist White Cedar Coniferous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback.	---	✓	✓	---	---	During amphibian surveys on May 2, 2014 and May 29 2014 from amphibian survey stations 11 and 12, 3 of the listed wildlife species were recorded (Gray Treefrog, Spring Peeper and Wood Frog) This habitat is considered significant as at least 20 breeding individuals were noted. See survey locations and field notes in Appendix B2 . See Figure 5D .	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV Substation - Overhead cable - Area of Operational Flexibility 	10 m
Amphibian Breeding Habitat (Woodland) ABHWO4		This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp wetland that is contained in a FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback.	---	✓	---	✓	---	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat will be treated as significant and carried forward to the <i>NHA EIS</i> . See Appendix B, Figure B1-3 . Surveys will be conducted prior to construction, to determine significance. See Figure 5D .	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility 	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Amphibian Breeding Habitat (Woodland) ABHW05		This candidate habitat is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh and SWDM4-5 Poplar Mineral Deciduous Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	✓	---	---	During amphibian surveys on May 1, 2014, May 28 2014 and June 25, 2014 from amphibian survey station 13 (see Appendix B, Figure B-3), 3 listed wildlife species were recorded (Gray Treefrog, Northern Leopard Frog and Green Frog). This habitat is considered significant as at least 20 breeding individuals were noted. See field notes in Appendix B . See Figure 5D .	- Perimeter fence - Solar panels - Access roads	30 m
Habitat of Species of Conservation Concern										
Marsh Breeding Bird Habitat MBBH1 (for Green Herons only)	This habitat includes all wetlands as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently it may be found in upland shrubs or forest a considerable distance from water. The following ELC communities should be considered: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: SW (Swamp), MA (Marsh) and Meadow (ME).	The MEMM3 Dry-Fresh Mixed Meadow ecosite that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	✓	---	---	---	✓	No Green Herons or evidence of Green Heron Nesting were observed within any of the candidate habitat areas during breeding bird surveys in 2014. See field notes and point count locations relative to these candidate habitats in Appendix B, Figure B1-4 .	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Marsh Breeding Bird Habitat MBBH2 (for Green Herons only)	Significant wildlife habitat defining criteria: <ul style="list-style-type: none"> • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species · • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH . 	The MEMM3 Dry-Fresh Mixed Meadow ecosite that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	✓	---	---	---	✓		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Marsh Breeding Bird Habitat MBBH3 (for Green Herons only)	Wildlife Species to be considered: American Bittern Virginia Rail Sora Common Moorhen American Coot	The MEMM3 Dry-Fresh Mixed Meadow ecosite that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	✓	---	---	---	✓		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Marsh Breeding Bird Habitat MBBH4 (for Green Herons only)	Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan Species of Conservation Concern:	The MEMM4 Fresh-Moist Mixed Meadow ecosite that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	✓	---	---	---	✓	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m	
Marsh Breeding Bird Habitat MBBH5 (for Green Herons only)		The MEMM4 Fresh-Moist Mixed Meadow ecosite that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	✓	✓	---	---	✓		- Perimeter Fence - Area of Operational Flexibility	0 m
Marsh Breeding Bird Habitat MBBH6 (for Green Herons only)		The MEMM4 Fresh-Moist Mixed Meadow ecosite that is found on the Project Location will be considered candidate Significant Wildlife Habitat for Marsh Breeding Birds (for Green Herons).	✓	✓	---	---	✓		- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Woodland Area-sensitive Bird Breeding Habitat ASBB1	Habitats where interior forest breeding birds are breeding in forest stands or woodlots >30 ha (forest interior is defined as at least 200 m from the forest edge). These include any of the following Community Types: Forest (FO), Treed Swamp (SW) that are mature (>60 years old). Significant wildlife habitat defining criteria: <ul style="list-style-type: none"> • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. <u>Wildlife species to be considered:</u>	This candidate habitat is made up of FODM5-7 Dry-Fresh Sugar maple-Black cherry Deciduous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists both in the Project Location and within the 50 m setback.	✓	✓	✓	---	---	Breeding bird point counts taken within this woodland area (23, 24, 25, 22, 68, 69, 70, 74) recorded observations of Veery, Ovenbird, Black-throated Blue Warbler, Yellow-bellied Sapsucker, Scarlet Tanager, Winter Wren, and Black-throated Green Warbler (See Appendix B for Breeding Bird Survey Point Counts (Figure B1-5) and field notes). Therefore, this habitat is significant and will be carried forward to the <i>NHA EIS</i> report. See Figure 5E .	- Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Overhead cable - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Species of Conservation Concern: Canada Warbler Cerulean Warbler									
Special Concern and Rare Wildlife Species										
American Gromwell AG1	This species is found in upland hardwood forests. Blooming occurs throughout the month of June with fruiting through late August.	This candidate habitat is made up of FODM5-7 Dry-Fresh sugar maple-Black Cherry Deciduous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists on the Project Location and within the 50 m setback.	✓	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM5-7 Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest and the FODM6-5 Fresh-Moist Sugar Maple hardwood Deciduous Forest in June and no American Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
American Gromwell AG2		This candidate habitat is made up of FODM6 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location.	---	✓	---	✓	---	Surveys that were conducted in this FODM6 Fresh-Moist Sugar Maple Deciduous Forest community were conducted under the alternative site investigation methodology so this habitat will be treated as significant for American Gromwell and brought forward to the <i>NHA EIS</i> . There will be no pre-construction surveys required for this habitat to determine significance. See Figure 5F .	- Overhead cable	0 m
American Gromwell AG3		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Deciduous Forest in June and no American Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Inverter station - Main HV Substation - Area of Operational Flexibility	10 m
American Gromwell AG4		This candidate habitat is made up of FODM5-1 Dry-Fresh Sugar Maple Deciduous Forest and FODM5-9 Dry-Fresh Sugar Maple Hardwood Deciduous Forest and exists within 50 m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM5-1 Dry-Fresh Sugar Maple Deciduous Forest and the FODM5-9 Dry-Fresh Sugar Maple Hardwood Deciduous Forest in June and no American Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads	8 m
American Gromwell AG5		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists within 50 m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and no American Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Overhead cable	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
American Gromwell AG6		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and no American Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility	0 m
Hill's Pondweed HP1	Hill's Pondweed is found in slow-moving streams, ditches, ponds, lakes and wetlands. It grows in clear, cold alkaline waters.	This candidate habitat is made up of and OAO open aquatic area and exists within 50 m of the Project Location.	---	✓	---	✓	---	Since open water features were not searched for vegetation, these habitats will be treated as significant and carried forward to the <i>NHA EIS</i> report. Surveys to be conducted prior to construction to determine significance. See Figure 5G .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	7 m
Hill's Pondweed HP3		This candidate habitat is made up of and OAO open aquatic area and exists within 50 m of the Project Location.	---	✓	---	✓	---		- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Hill's Pondweed HP4		This candidate habitat is made up of and OAO open aquatic area and exists within 50 m of the Project Location.	---	✓	---	✓	---		- Perimeter fence - Solar panels - Area of Operational Flexibility	9 m
Hill's Pondweed HP5		This candidate habitat is made up of and OAO open aquatic area and exists on the Project Location.	✓	---	---	✓	---		- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Hill's Pondweed HP6		This candidate habitat is made up of and OAO open aquatic area and exists on the Project Location.	✓	---	---	✓	---		- Access road - Area of Operational Flexibility	0 m
Scarlet Beebalm SB1	Scarlet Bee-balm is found in the moist woods of southern Ontario. Blooms June through September. Habitat for this species exists in some of the woodland (WO) and the forest (FO) ecosites on and within 50 m of the Project Location.	This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists within 50m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads	10 m
Scarlet Beebalm SB2		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists within 50m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads	4 m
Scarlet Beebalm SB3		This candidate habitat is made up of FODM6 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6 Fresh-Moist Sugar Maple Deciduous Forest in June and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Overhead cable	0 m
Scarlet Beebalm SB4		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and FOCM4-1 Fresh-Moist White Cedar Coniferous Forest and exists within 50m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and in the FOCM4-1 Fresh-Moist White Cedar coniferous Forest in July and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Main HV Substation - Area of Operational Flexibility	10 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Scarlet Beebalm SB5		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists within 50m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Overhead cable	0 m
Scarlet Beebalm SB6		This candidate habitat is made up of FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists within 50m of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest in June and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility	0 m
Scarlet Beebalm SB8		This candidate habitat is made of WODM5-3 Fresh-Moist Manitoba Maple Deciduous Woodland and exists on the Project Location and within the 50 m setback.	✓	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the WODM5-3 Fresh-Moist Manitoba Maple Deciduous Woodland in September and no Scarlet Beebalm was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Soft-hairy False Gromwell SHFG1	This species prefers well drained soils in open woodlands or along roadsides. Blooming season is June- July. The thicket (TH) communities and the WODM4 could provide habitat for this species.	This candidate habitat is made of WODM4 Dry-Fresh Deciduous Woodland and exists on the Project Location and within the 50 m setback.	✓	✓	---	---	✓	Vegetation surveys were conducted during the blooming period of this species in the WODM4 Dry-Fresh Deciduous Woodland in June and no Soft-Hairy False Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Soft-hairy False Gromwell SHFG2		This candidate habitat is made of THDM2 Dry-Fresh Deciduous Shrub Thicket and exists within the 50 m setback of the Project Location.	✓	✓	---	---	✓	Vegetation surveys were conducted during the blooming period for this species in the THDM2 Dry-Fresh Deciduous Shrub Thicket in June and no Soft-Hairy False Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads	0 m
Soft-hairy False Gromwell SHFG3		This candidate habitat is made up of THDM2 Dry-Fresh Deciduous Shrub Thicket and exists within the 50 m setback of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period of this species in the THDM2 Dry-Fresh Deciduous Shrub Thicket in June and no Soft-Hairy False Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility	0 m
Soft-hairy False Gromwell SHFG4		This candidate habitat is made up of THMM2 Fresh Moist Mixed Thicket and THDM2-11 Hawthorn Deciduous Shrub Thicket and exists within the 50 m setback of the Project Location.	---	✓	---	✓	---	Surveys that were completed in this THMM2 Fresh Moist Mixed thicket community were conducted under the alternative site investigation methodology so this habitat will be treated as significant for Soft-hairy False Gromwell and brought forward to the <i>NHA EIS</i> . There will be no pre-construction surveys conducted for this habitat. See Figure 5H .	- Overhead cable	0 m
Soft-hairy False Gromwell SHFG5		This candidate habitat is made up of THMM2 Fresh Moist Mixed Thicket and exists within the 50 m setback of the Project Location.	---	✓	---	✓	---	Surveys that were completed in this THMM2 Fresh Moist Mixed thicket community were conducted under the alternative site investigation methodology so this habitat will be treated as significant for Soft-hairy False Gromwell and brought forward to the <i>NHA EIS</i> . There will be no pre-construction surveys conducted for this habitat. See Figure 5H .	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Soft-hairy False Gromwell SHFG6		This candidate habitat is made up of THDM2-11 Hawthorn Deciduous Shrub Thicket and exists within the 50 m setback of the Project Location.	---	✓	---	---	✓	Vegetation surveys were conducted during the blooming period of this species in the THDM2-11 Hawthorn Deciduous Shrub Thicket in June and no Soft-Hairy False Gromwell was found. This habitat is not significant for this species and will not be brought forward into the <i>NHA EIS</i> report.	- Overhead cable - Area of Operational Flexibility	10 m
Common Nighthawk CN1	Traditional Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, mine tailings and along gravel roads and railways, they tend to occupy natural sites.	Candidate habitat for Common Nighthawk exists in the WODM4 Dry-Fresh Deciduous Woodland community that is on and within 50 m of the Project Location.	✓	✓	---	---	✓	Crepuscular surveys were conducted on the nights of June 10 2014 and July 11 2014 from point count SGCP1. Auditory surveys typically cover an area of 400- 500 m in radius and no Common Nighthawks were heard during either survey in the WODM4 Dry-Fresh Deciduous Woodland community that had been delineated at candidate Significant Wildlife Habitat (CN 1) for Common Nighthawk. See Appendix B Figure B1-8 for survey points.	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Common Nighthawk CN2		Candidate habitat for Common Nighthawk exists in the WODM4 Dry-Fresh Deciduous Woodland community that exists within 50 m of the Project Location.	---	✓	---	---	✓	Crepuscular surveys were conducted on the nights of June 10 2014 and July 11 2014 from point count SGCP2. Auditory surveys typically cover an area of 400- 500 m in radius and no Common Nighthawks were heard during either survey in the WODM4 Dry-Fresh Deciduous Woodland community that had been delineated at candidate Significant Wildlife Habitat (CN 2) for Common Nighthawk. See Appendix B Figure B1-8 for survey points.	- Perimeter fence - Solar panels - Overhead cable - Area of Operational Flexibility	0 m
Common Nighthawk CN3		Candidate habitat for Common Nighthawk exists in the THMM2 Fresh Moist Mixed Thicket community that exists within 50 m of the Project Location.	---	✓	---	---	✓	Crepuscular surveys were conducted on the nights of June 10 2014 and July 11 2014 from point count SGCP2. Auditory surveys typically cover an area of 400- 500 m in radius and no Common Nighthawks were heard during either survey in the THMM2 Fresh Moist Mixed Thicket community that had been delineated at candidate Significant Wildlife Habitat (CN 3) for Common Nighthawk. See Appendix B Figure B1-8 for survey points.	- Overhead cable	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Common Nighthawk CN4		Candidate habitat for Common Nighthawk exists in the THMM2 Fresh Moist Mixed Thicket community that exists within 50 m of the Project Location.	---	✓	---	---	✓	Crepuscular surveys were conducted on the nights of June 10 2014 and July 11 2014 from point counts SGCP8 and SGCP11. Auditory surveys typically cover an area of 400- 500 m in radius and no Common Nighthawks were heard during either survey in the WODM4 Dry-Fresh Deciduous Woodland community that had been delineated at candidate Significant Wildlife Habitat (CN 4) for Common Nighthawk. See Appendix B Figure B1-8 for survey points.	- Perimeter fence - Solar panels - Access roads - Inverter station	0 m
Common Nighthawk CN5		Candidate habitat for the Common Nighthawk exists in the WODM4 Dry-Fresh Deciduous Woodland that exists within 50 m of the Project Location.	---	✓	---	---	✓	Crepuscular surveys were conducted on the nights of June 10 2014 and July 11 2014 from point count SGCP8. Auditory surveys typically cover an area of 400- 500 m in radius and no Common Nighthawks were heard during either survey in the WODM4 Dry-Fresh Deciduous Woodland community that had been delineated at candidate Significant Wildlife Habitat (CN 5) for Common Nighthawk.	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	2 m
Redheaded Woodpecker RHW1	The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching.	Candidate habitat exists within FODM6-5 Fresh Moist Sugar Maple Hardwood Deciduous Forest that is within the 50 m setback of the Project Location.	---	✓	✓	---	---	Breeding bird surveys were conducted at point count station 24 on June 5 th and June 19 th . A Redheaded Woodpecker was heard calling during the June 19 th survey. There were incidental sightings of two Redheaded Woodpeckers on May 13 th and then again on May 14 th 2014. See field notes and Figure B1-6 in Appendix B.. Therefore, this habitat is considered Significant Wildlife Habitat for Redheaded Woodpecker and will be carried forward to the <i>NHA EIS</i> . See Figure 5I .	- Perimeter fence - Solar panels - Access roads - Main HV Substation	10 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Harlequin Darner HD1	This species can be found in bogs, and swamps May through July.	This candidate habitat is made up of SWDM2-1 Black Ash Mineral Deciduous Swamp/MAMM3-1 mixed mineral Meadow Marsh Complex and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWDM2-1 Black Ash Mineral Deciduous Swamp/MAMM3-1 Mixed Mineral Meadow Marsh Complex in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels	30 m
Harlequin Darner HD2		This candidate habitat is made up of SWDM4-5 Poplar Mineral Deciduous Swamp/SWTM2-1 Red-osier Dogwood Deciduous Thicket Swamp Complex and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWDM4-5 Poplar Mineral Deciduous Swamp/SWTM2-1 Red-osier Dogwood Deciduous Thicket Swamp Complex in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	30 m
Harlequin Darner HD3		This candidate habitat is made up of SWMM5-1 Balsam Fir Hardwood Mixed Mineral Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWMM5-1 Balsam Fir Hardwood Mixed Mineral Swamp in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels	20 m
Harlequin Darner HD4		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWTM3 Willow Mineral Deciduous Thicket Swamp in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Overhead cable	18 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Harlequin Darner HD5		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	✓	---	Surveys that were completed in this SWTM3 Willow mineral Deciduous Thicket Swamp community were conducted under the alternative site investigation methodology so this habitat will be treated as significant and brought forward to the <i>NHA EIS</i> . There will be no pre-construction surveys conducted for this habitat. See Figure 5J .	- Overhead cable	0 m
Harlequin Darner HD6		This candidate habitat is made up of SWDM2-2 Green Ash Mineral Deciduous Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWDM2-2 Green Ash Mineral Deciduous Swamp in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels - Overhead cable - Area of Operational Flexibility	49 m
Harlequin Darner HD7		This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels - Access roads - Main HV Substation	30 m
Harlequin Darner HD8		This candidate habitat is made up of SWCO2-2 Tamarack Organic Coniferous Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWCO2-2 Tamarack Organic coniferous Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp in July 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Access roads - Area of Operational Flexibility	4 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Harlequin Darner HD9		This candidate habitat is made up of SWDM4-5 White Cedar Hardwood Organic Mixed Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWDM4-5 White Cedar Hardwood Organic Mixed Swamp in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels - Access roads	30 m
Harlequin Darner HD10		This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mixed Mineral Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	✓	---	Surveys that were completed in this SWMM1-1 White Cedar Hardwood Mixed Mineral Swamp community were conducted under the alternative site investigation methodology so this habitat will be treated as significant and brought forward to the <i>NHA EIS</i> . There will be no pre-construction surveys conducted for this habitat. See Figure 5J .	- Overhead cable - Area of Operational Flexibility	0 m
Harlequin Darner HD11		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	---	✓	Surveys were conducted, during the period where this species is in flight, in the SWTM3 Willow Mineral Deciduous Thicket Swamp in June 2014 and no Harlequin Darners were observed. This habitat is not considered significant for this species and will not be carried forward to the <i>NHA EIS</i> .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	22 m
Animal Movement Corridors										

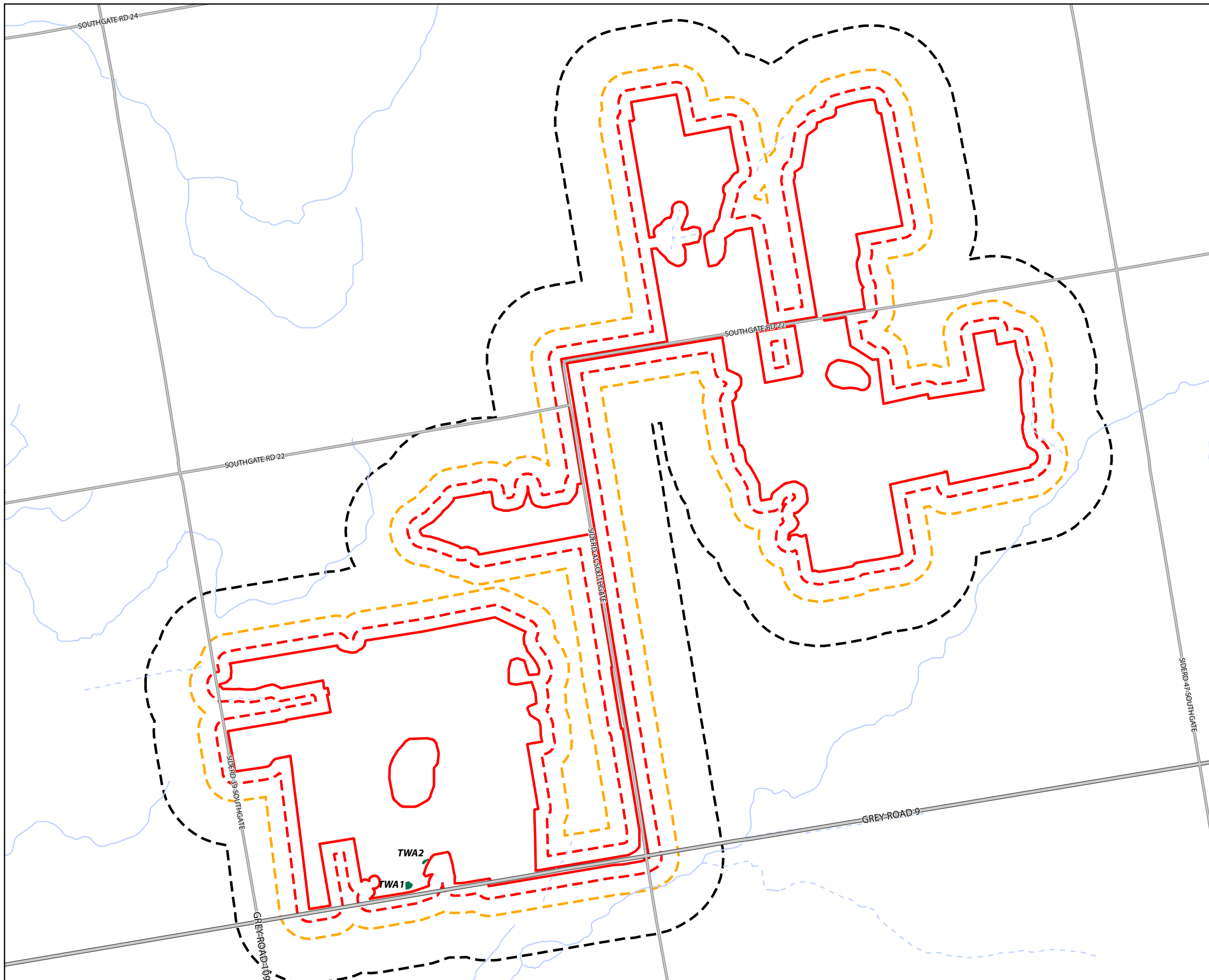
Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status			Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant	Not Significant			
Amphibian Movement Corridors	Corridors are determined based on the identification of significant breeding habitat for amphibians. Movement corridors between breeding habitat and summer habitat must be determined when amphibian breeding habitat (wetland) is confirmed as significant wildlife habitat and the species observed within the significant amphibian breeding habitat (wetland) rely on woodland habitat for a portion of their life cycle. Corridors may be found in all ecosites associated with water. Corridors should be at least 200 m wide with gaps <20 m, and, if following riparian area, with at least 15 m of vegetation on both sides of waterway.	Potential habitat exists both within the Project Location and 50 m setback between where a unit of candidate wetland amphibian breeding habitat occurs in isolation from a woodland. The candidate amphibian corridor would be the space between the woodland and the wetland amphibian breeding habitat.	✓	✓	---	✓	---	Please note, amphibian corridors are only considered once wetland Amphibian Breeding Habitat has been evaluated as significant. Until this type of wildlife habitat is evaluated, amphibian corridors are carried forward in this NHA as candidate. They have not been mapped. Should the wetland Amphibian Breeding Habitat be evaluated as significant, the methodology outlined in Appendix A of the <i>NHA EIS</i> would be followed to investigate the area between the significant wetland Amphibian Breeding Habitat and the nearest woodland.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter stations - Overhead distribution line - Main HV Substation 	0 m

Significant wildlife habitat within the Project Location and 50 m setback includes (please note that *indicates habitat is being treated as significant):

- Seasonal Concentration Areas
 - Turtle Wintering Areas (TWA1*, TWA2*)
- Specialised Wildlife Habitat
 - Turtle Nesting Area (TNA1)*
 - Amphibian Breeding Habitat (Wetland) (ABHWE1*, ABHWE2*, ABHWE5*, ABHWE6*, ABHWE7*, ABHWE8*, ABHWE9*, ABHWE11*, ABHWE12*, ABHWE13*, ABHWE14*)
 - Amphibian Breeding Habitat (Woodland) (ABHWO1, ABHWO2, ABHWO3, ABHWO4*, ABHWO5)
- Habitat For Species of Conservation Concern
 - Woodland Area- Sensitive Bird Breeding Habitat (ASBB1)
 - American Gromwell (AG2*)
 - Hill’s Pondweed (HP1*, HP3*, HP4*, HP5*, HP6*)
 - Soft-hairy False Gromwell (SHFG4*, SHFG5*)
 - Redheaded Woodpecker (RHW1)
 - Harlequin Darner (HD5*, HD10*)
- Animal Movement Corridors
 - Amphibian Movement Corridors*

See **Figures 5A- 5J**.

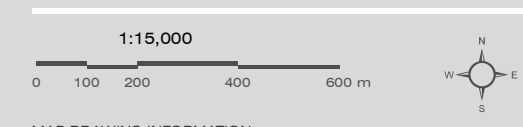
In addition, the MNRF has scoped the applicable wildlife habitat that may be impacted if a renewable energy project is developed within 50 m. All other wildlife habitat that may occur entirely within 50 m can be assumed to exist and categorized as “Generalized Candidate Significant Wildlife Habitat” and must be treated as significant in the *NHA EIS*. The applicable scoped wildlife habitat identified within 50 m of the Project Location and identified as “Generalized Candidate Significant Wildlife Habitat” is outlined in the *NHA Site Investigation Report*.



SOUTHGATE SOLAR PROJECT

**FIGURE 5A
SIGNIFICANT WILDLIFE HABITAT
TURTLE WINTERING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Turtle Wintering Area



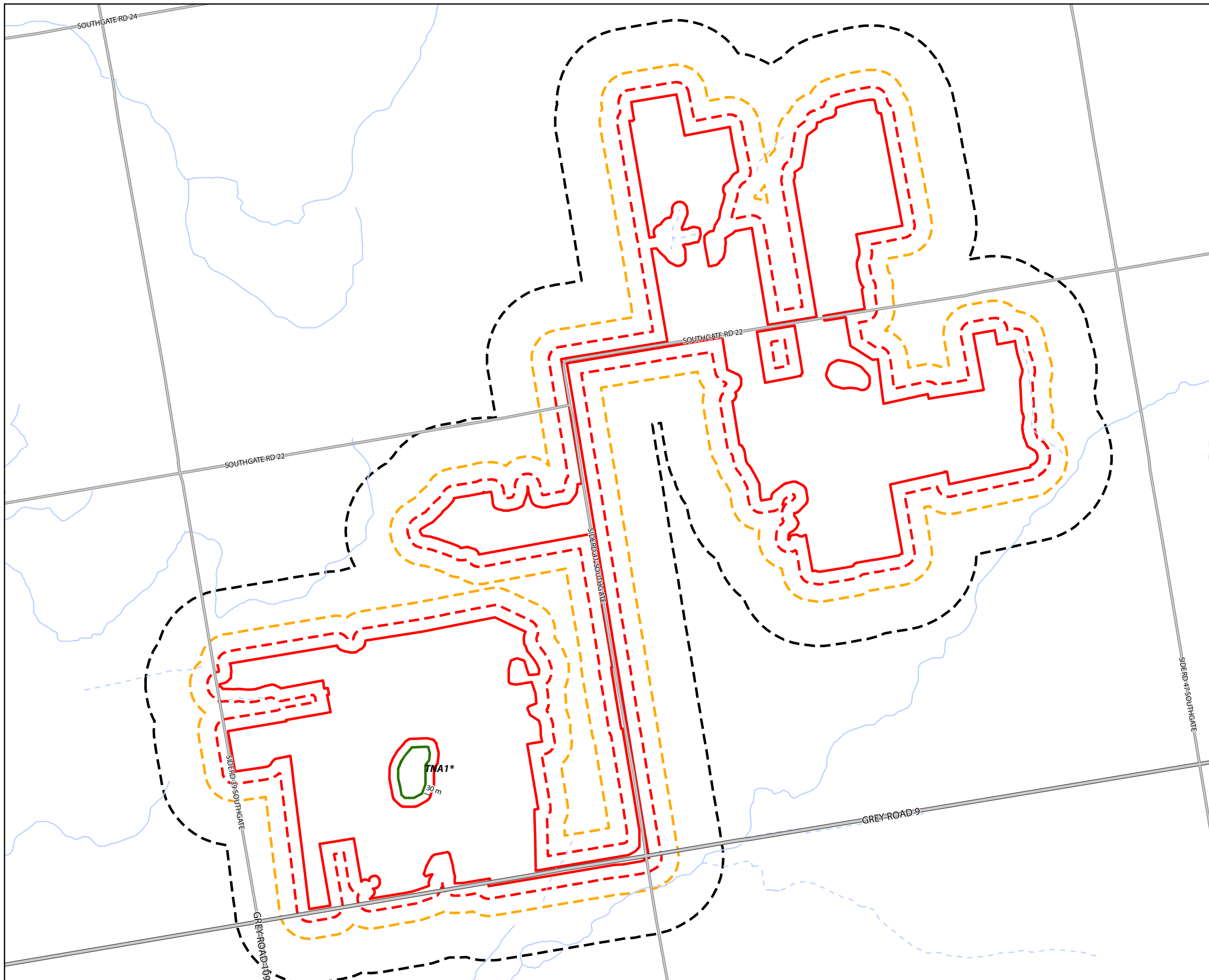
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**FIGURE 5B
SIGNIFICANT WILDLIFE HABITAT
TURTLE NESTING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Turtle Nesting Area



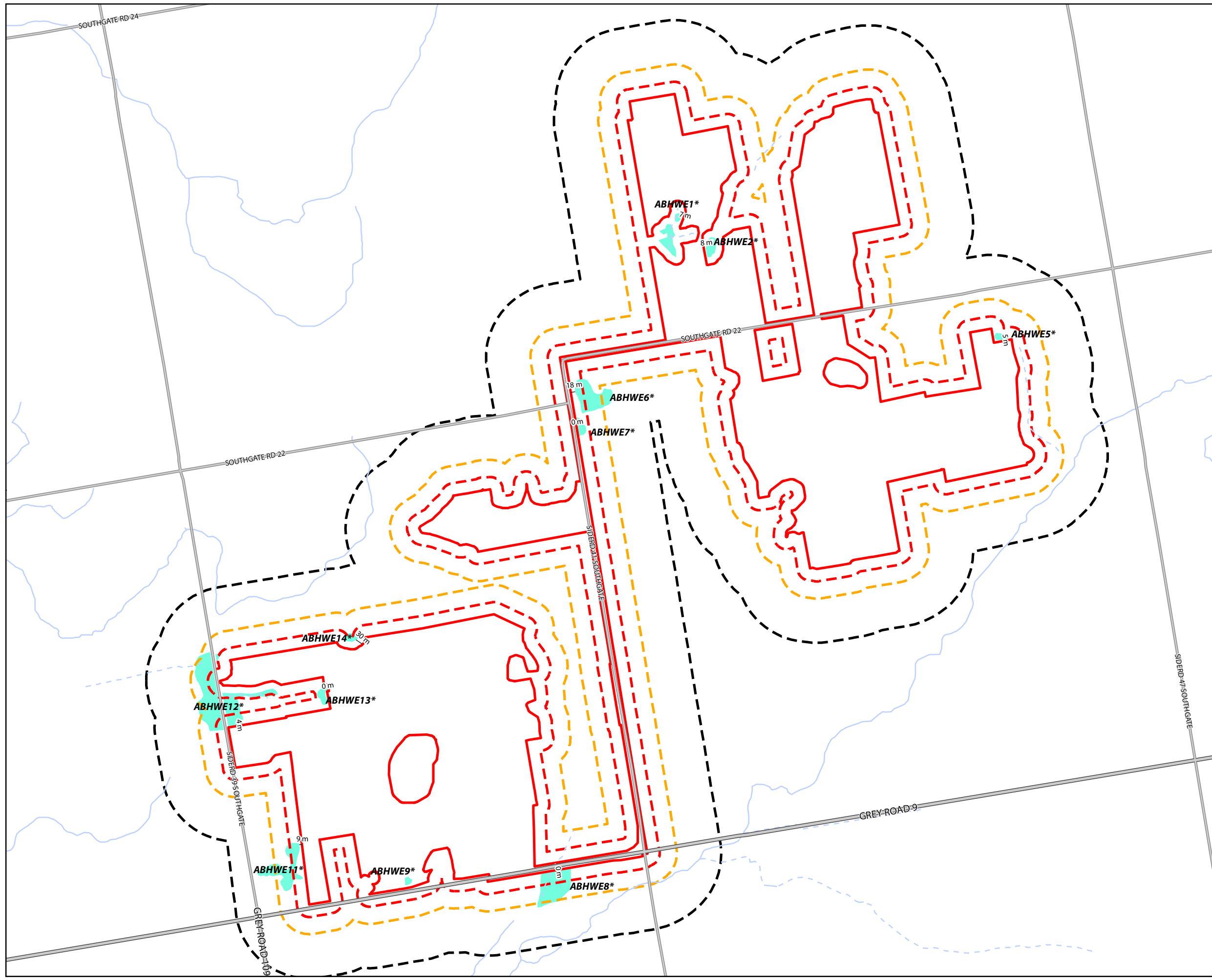
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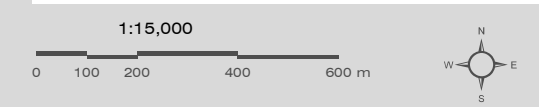
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**FIGURE 5C
SIGNIFICANT WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WETLAND)**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Amphibian Breeding Habitat (Wetland)



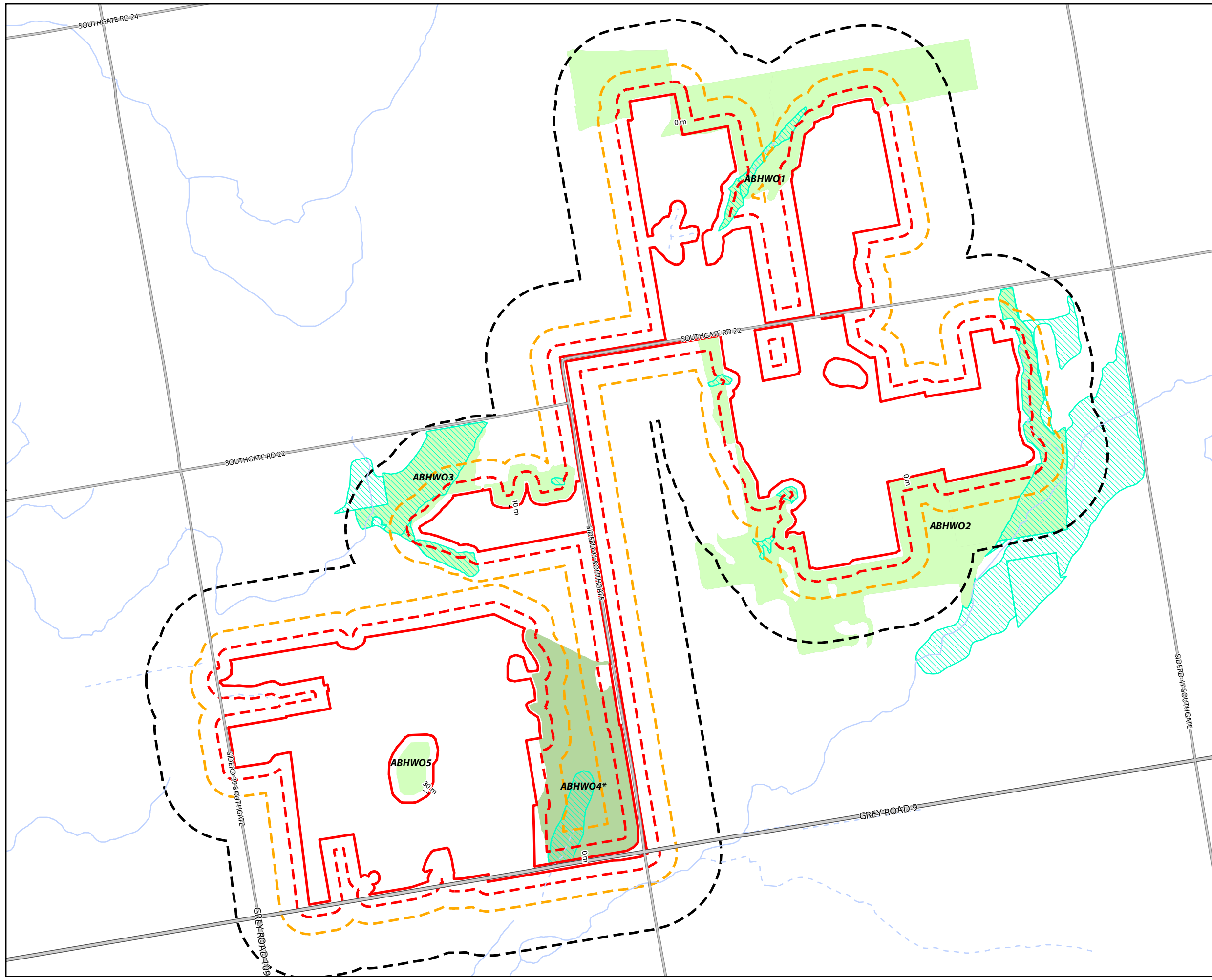
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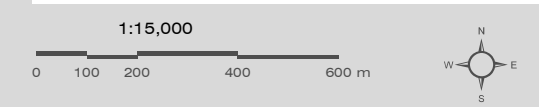
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SOUTHGATE SOLAR PROJECT

**FIGURE 5D
SIGNIFICANT WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WOODLAND)**

- Permanent Watercourse
- - - Intermittent Watercourse
- ▭ Project Location
- - - Project Location 50 m Setback
- - - Project Location 120 m Setback
- - - Project Location 300 m Setback
- ▨ Assumed Provincially Significant Wetland
- Significant Amphibian Breeding Habitat (Woodland)
- ▨ *Treated as Significant Amphibian Breeding Habitat (Woodland)



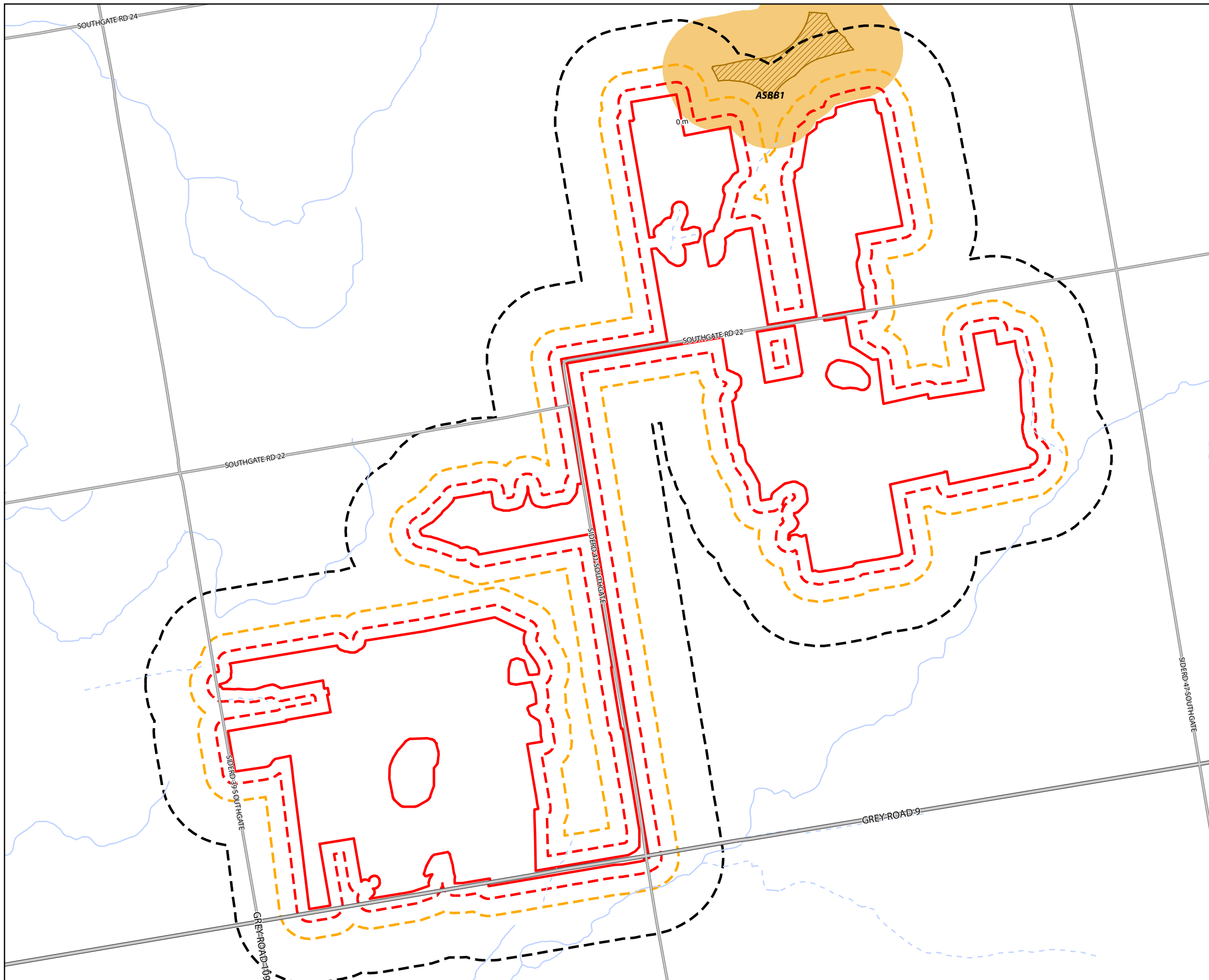
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**FIGURE 5E
SIGNIFICANT WILDLIFE HABITAT
WOODLAND AREA-SENSITIVE
BIRD BREEDING HABITAT**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- 200 m Woodland Interior
- Woodland Area-Sensitive Bird Breeding Habitat



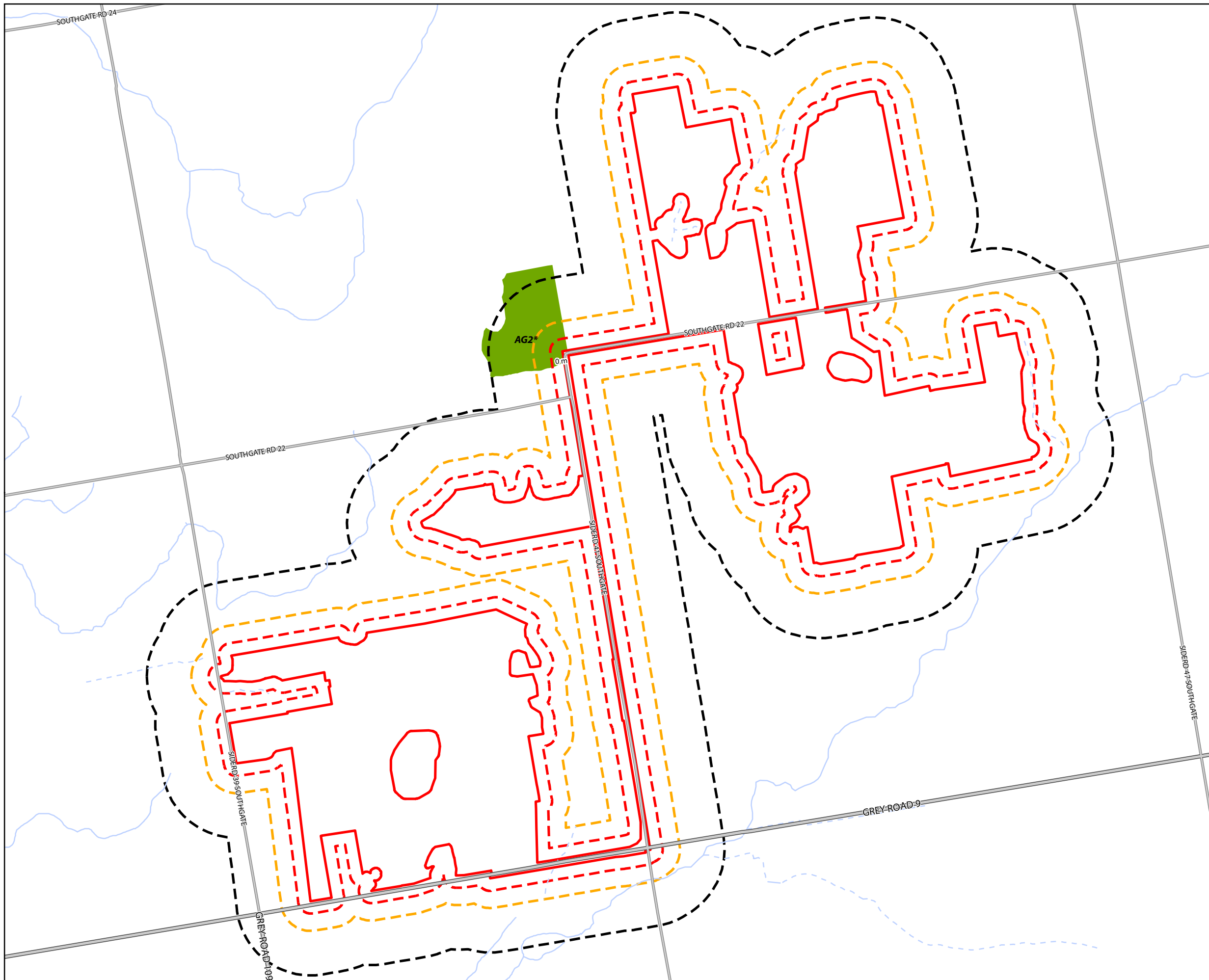
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**FIGURE 5F
SIGNIFICANT WILDLIFE HABITAT
AMERICAN GROMWELL**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant American Gromwell



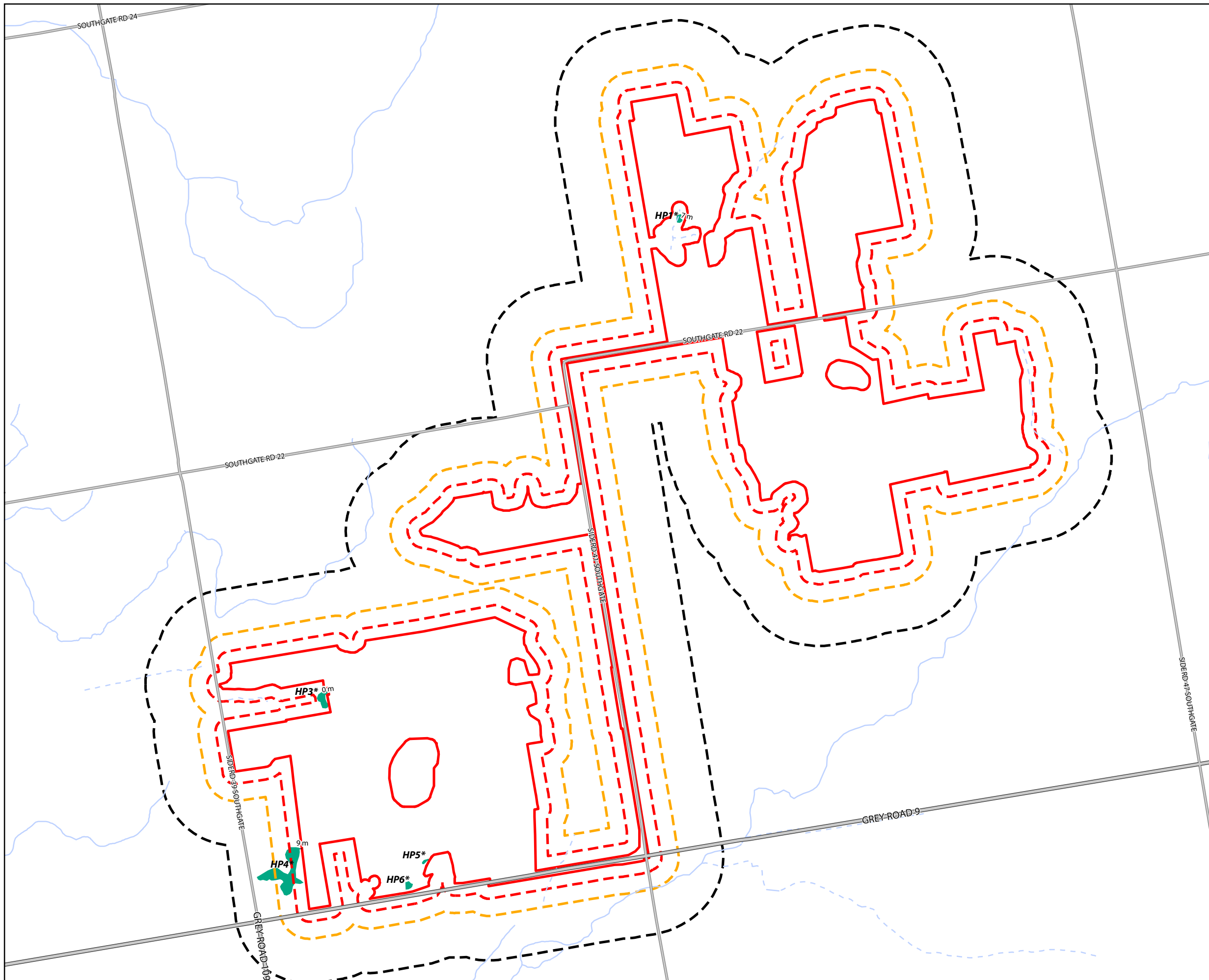
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**FIGURE 5G
SIGNIFICANT WILDLIFE HABITAT
HILL'S PONDWEED**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Hill's Pondweed



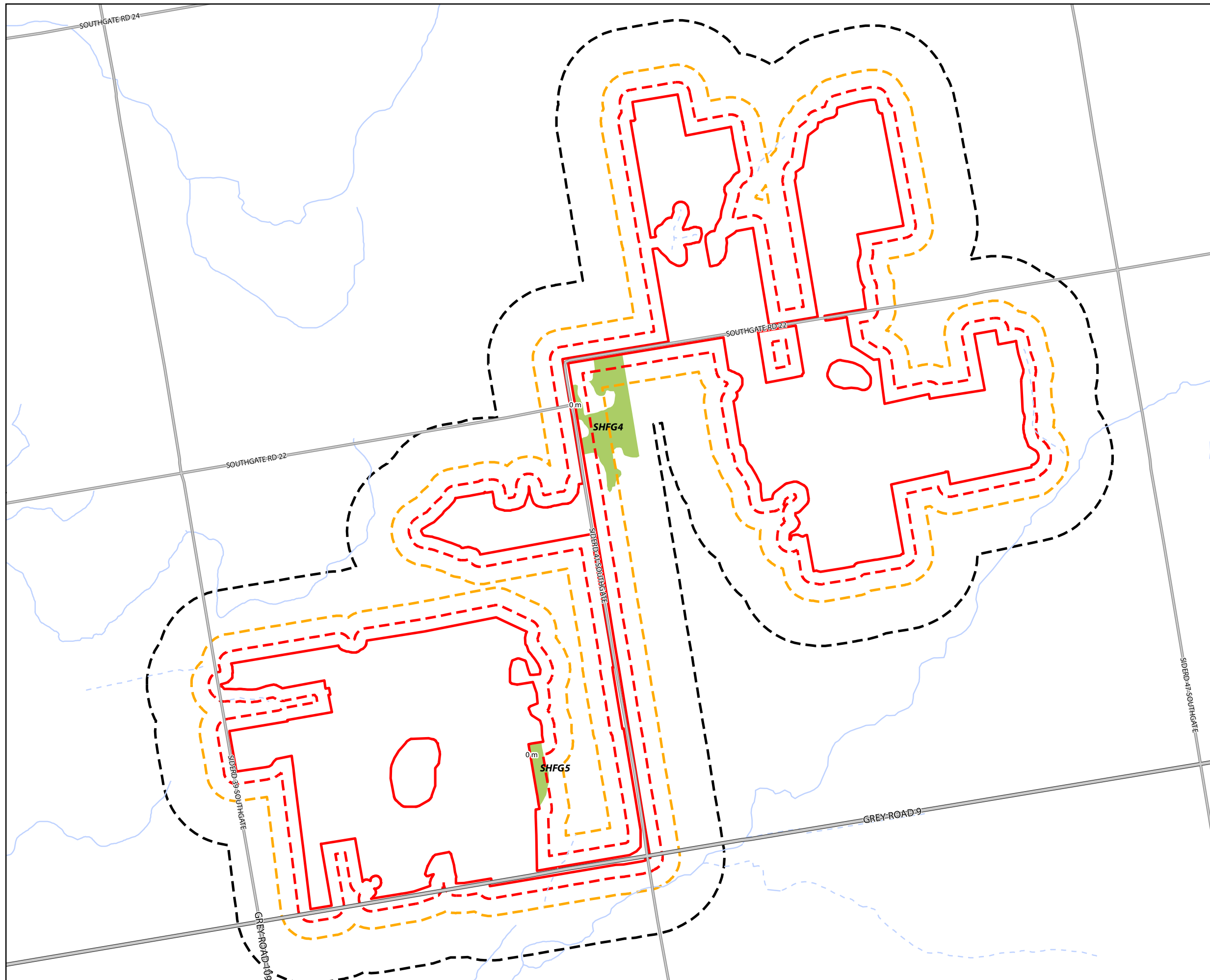
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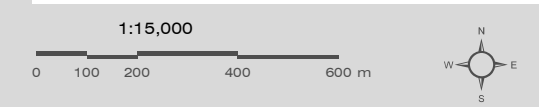
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**FIGURE 5H
SIGNIFICANT WILDLIFE HABITAT
SOFT-HAIRY FALSE GROMWELL**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Soft-Hairy False Gromwell



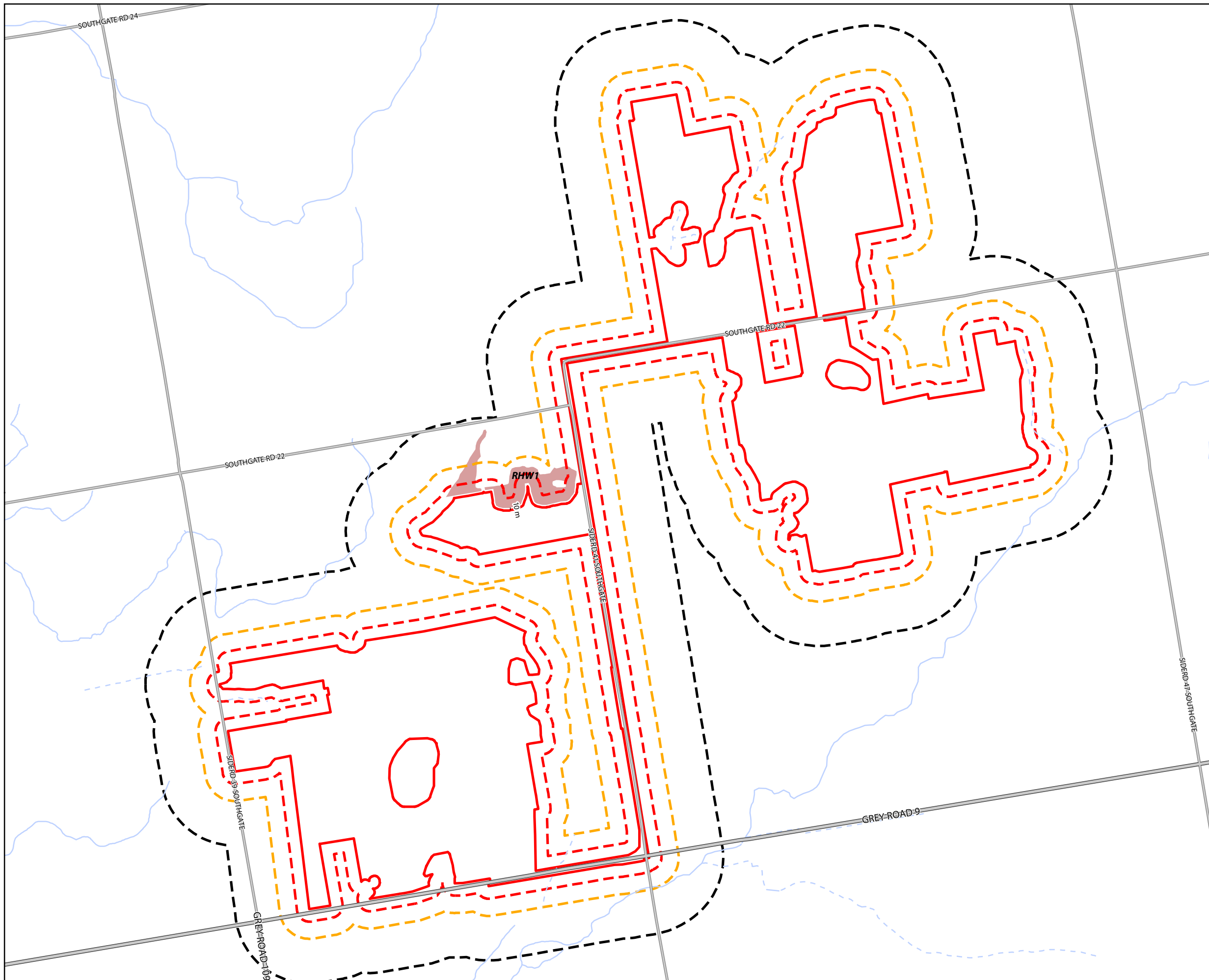
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SOUTHGATE SOLAR PROJECT

**FIGURE 51
SIGNIFICANT WILDLIFE HABITAT
RED-HEADED WOODPECKER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Significant Red-Headed Woodpecker



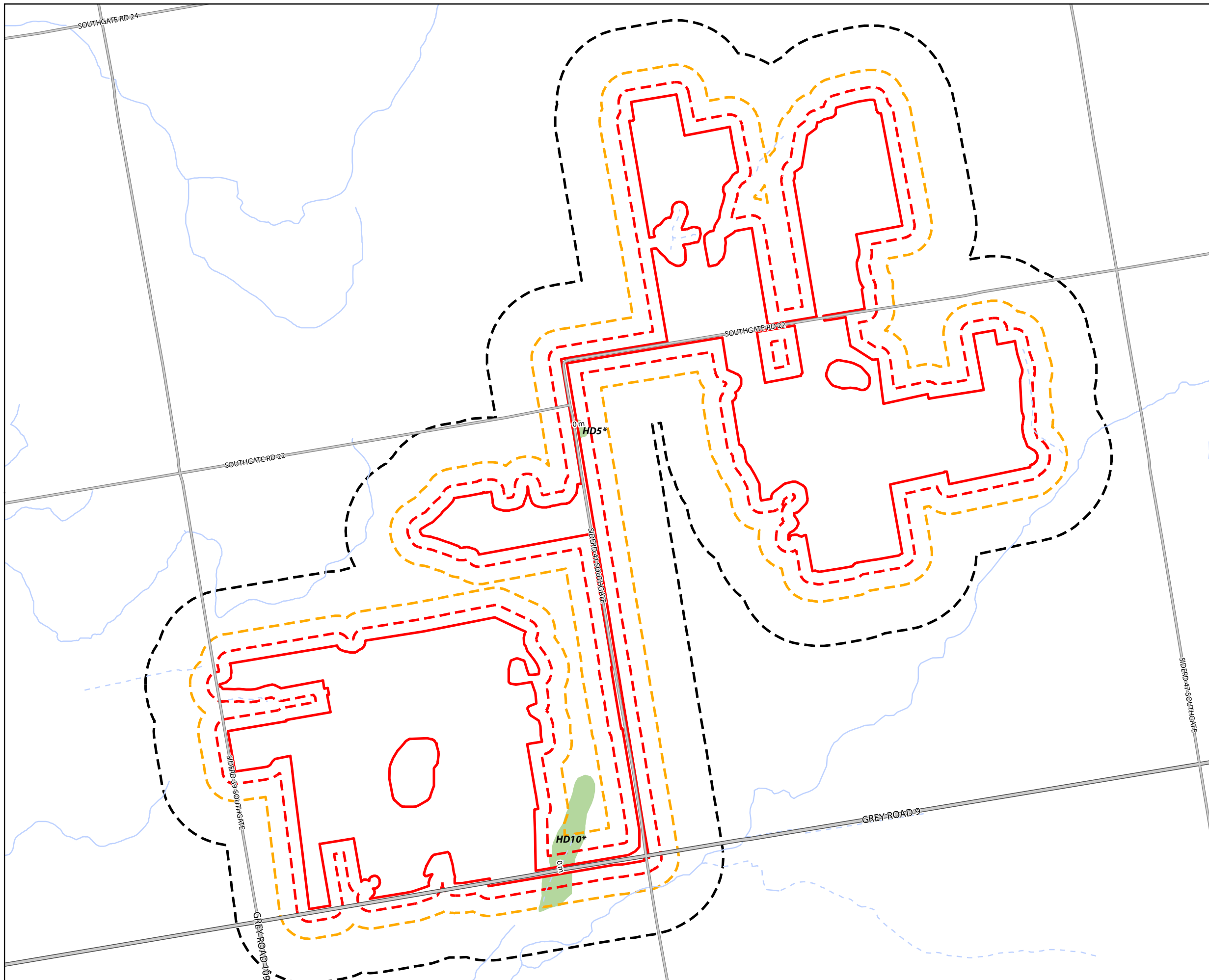
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SOUTHGATE SOLAR PROJECT

**FIGURE 5J
SIGNIFICANT WILDLIFE HABITAT
HARLEQUIN DARTER**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Harlequin Darter



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DATE: 3/18/2015

9. CONCLUSIONS

This report evaluated the significance of natural features determined to occur within 50 m of the Project Location. The natural features evaluated for their significance in this report were identified previously as part of the records review and site investigation and are subject to consultation with relevant agencies, stakeholders and the public. The evaluation of significance was undertaken according to the criteria and procedures currently accepted by the MNRF. **Figures 3, 4, and 5A-5J** and **Table 8** below summarize the results of the evaluations.

This report is intended to fulfill the requirements for the *NHA Evaluation of Significance Report* under O. Reg. 359/09. This *NHA Evaluation of Significance Report* is the third report in a series that will fulfill the *NHA* component of the *REA* process. An *NHA Environmental Impact Study Report*, which examines potential impacts, mitigation and other relevant items to protect these natural features, will be required for those natural features evaluated to be significant within 50 m of the Project Location.

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Table 8: Natural Features Evaluation of Significance Summary

Natural Feature	Details			
Type	Minimum Setback Provided from Project Location (m)	Significant	Treated as Significant/ Assumed Significant	Not Significant
Wetlands				
4	30		✓	
6	20		✓	
7	45		✓	
9	18		✓	
11	47		✓	
13	33		✓	
14	30		✓	
17	0		✓	
18	30		✓	
20	0		✓	
21	30		✓	
22	21		✓	
23	4		✓	
25	8			✓
26	30		✓	
27	30			✓
28	0			✓
29	30		✓	
30	0		✓	
31	30			✓
32	37		✓	
Woodlands				
A	0 Part of this feature is located inside the Project Location	✓		
B	0 Part of this feature is located inside the Project Location	✓		
C	0 Part of this feature is located inside the Project Location	✓		
D	0	✓		
E	0		✓	

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Natural Feature	Details			
Type	Minimum Setback Provided from Project Location (m)	Significant	Treated as Significant/ Assumed Significant	Not Significant
F	2			✓
H	30			✓
I	4	✓		
K	0			✓
L	30			✓
M	0 Part of this feature is located inside the Project Location			✓
Wildlife Habitat				
Seasonal Concentration Areas				
Colonially Nesting Bird Breeding Habitat (Ground) CNG1	30			✓
Colonially Nesting Bird Breeding Habitat (Ground) CNG2	30			✓
Turtle Wintering Area TWA1	0		✓	
Turtle Wintering Area TWA2	0		✓	
Rare Vegetation Communities				
None identified within the Project Location or adjacent lands within 50 m				
Specialised Wildlife Habitat				
Turtle Nesting Areas TNA1	30		✓	
Woodland Raptor Nesting Area WRNH1	0			✓
Amphibian Breeding Habitat (Wetland) ABHWE1	7		✓	
Amphibian Breeding Habitat (Wetland) ABHWE2	8		✓	
Amphibian Breeding Habitat (Wetland) ABHWE3	30			✓
Amphibian Breeding Habitat (Wetland) ABHWE5	5		✓	
Amphibian Breeding Habitat (Wetland) ABHWE6	18		✓	
Amphibian Breeding Habitat (Wetland) ABHWE7	0		✓	
Amphibian Breeding Habitat (Wetland) ABHWE8	0		✓	
Amphibian Breeding Habitat (Wetland) ABHWE9	0		✓	

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Natural Feature	Details			
Type	Minimum Setback Provided from Project Location (m)	Significant	Treated as Significant/ Assumed Significant	Not Significant
Amphibian Breeding Habitat (Wetland) ABHWE10	0			✓
Amphibian Breeding Habitat (Wetland) ABHWE11	9		✓	
Amphibian Breeding Habitat (Wetland) ABHWE12	4		✓	
Amphibian Breeding Habitat (Wetland) ABHWE13	0		✓	
Amphibian Breeding Habitat (Wetland) ABHWE14	30		✓	
Amphibian Breeding Habitat (Woodland) ABHWO1	0	✓		
Amphibian Breeding Habitat (Woodland) ABHWO2	0	✓		
Amphibian Breeding Habitat (Woodland) ABHWO3	10	✓		
Amphibian Breeding Habitat (Woodland) ABHWO4	0		✓	
Amphibian Breeding Habitat (Woodland) ABHWO5	30	✓		
Habitat of Species of Conservation Concern				
Marsh Breeding Bird Habitat MBBH1 (for Green Herons only)	0			✓
Marsh Breeding Bird Habitat MBBH2 (for Green Herons only)	0			✓
Marsh Breeding Bird Habitat MBBH3 (for Green Herons only)	0			✓
Marsh Breeding Bird Habitat MBBH4 (for Green Herons only)	0			✓
Marsh Breeding Bird Habitat MBBH5 (for Green Herons only)	0			✓
Marsh Breeding Bird Habitat MBBH6 (for Green Herons only)	0			✓
Woodland Area-sensitive Bird Breeding Habitat ASBB1	0	✓		
American Gromwell AG1	0			✓
American Gromwell AG2	0		✓	
American Gromwell AG3	10			✓
American Gromwell AG4	8			✓

Southgate Solar Project
Natural Heritage Assessment Evaluation of Significance Report

Natural Feature	Details				
	Type	Minimum Setback Provided from Project Location (m)	Significant	Treated as Significant/ Assumed Significant	Not Significant
American Gromwell AG5		0			✓
American Gromwell AG6		0			✓
Hill's Pondweed HP1		7		✓	
Hill's Pondweed HP3		0		✓	
Hill's Pondweed HP4		9		✓	
Hill's Pondweed HP5		0		✓	
Hill's Pondweed HP6		0		✓	
Scarlet Beebalm SB1		10			✓
Scarlet Beebalm SB2		4			✓
Scarlet Beebalm SB3		0			✓
Scarlet Beebalm SB4		10			✓
Scarlet Beebalm SB5		0			✓
Scarlet Beebalm SB6		0			✓
Scarlet Beebalm SB8		0			✓
Soft-hairy False Gromwell SHFG1		0			✓
Soft-hairy False Gromwell SHFG2		0			✓
Soft-hairy False Gromwell SHFG3		0			✓
Soft-hairy False Gromwell SHFG4		0		✓	
Soft-hairy False Gromwell SHFG5		0		✓	
Soft-hairy False Gromwell SHFG6		10			✓
Common Nighthawk CN1		0			✓
Common Nighthawk CN2		0			✓
Common Nighthawk CN3		0			✓
Common Nighthawk CN4		0			✓
Common Nighthawk CN5		2			✓
Redheaded Woodpecker RHW1		10	✓		
Harlequin Darner HD1		30			✓
Harlequin Darner HD2		30			✓
Harlequin Darner HD3		20			✓
Harlequin Darner HD4		18			✓
Harlequin Darner HD5		0		✓	
Harlequin Darner HD6		49			✓
Harlequin Darner HD7		30			✓
Harlequin Darner HD8		4			✓
Harlequin Darner HD9		30			✓
Harlequin Darner HD10		0		✓	
Harlequin Darner HD11		22			✓

Natural Feature	Details			
Type	Minimum Setback Provided from Project Location (m)	Significant	Treated as Significant/ Assumed Significant	Not Significant
Animal Movement Corridors				
Amphibian Movement Corridors	0		✓	

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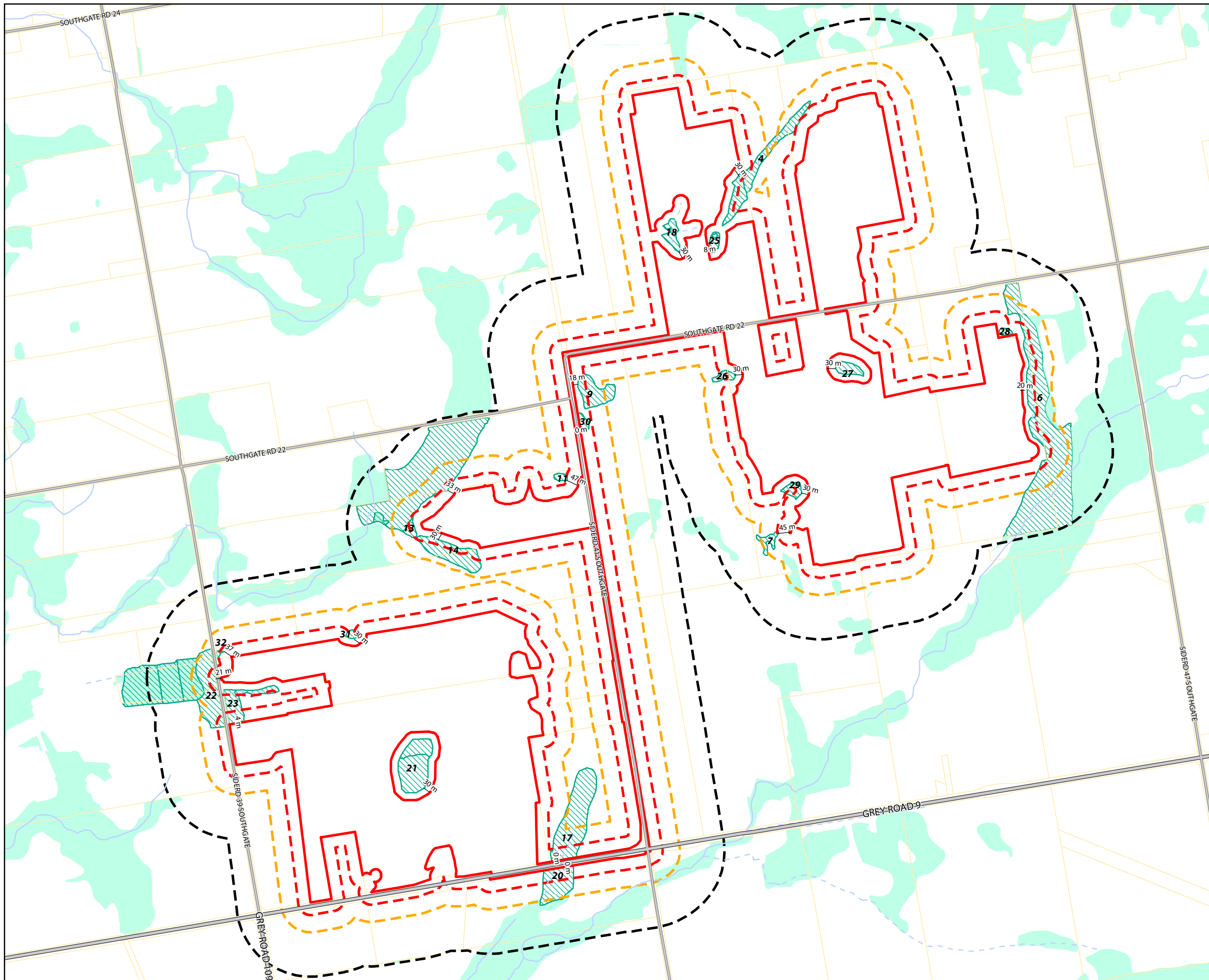
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APPENDIX A

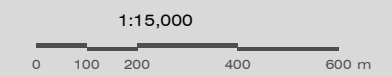
Site Investigation Mapping



SOUTHGATE SOLAR PROJECT

FIGURE 5 WETLANDS

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Dillon Delineated Wetland
- Unevaluated Wetland



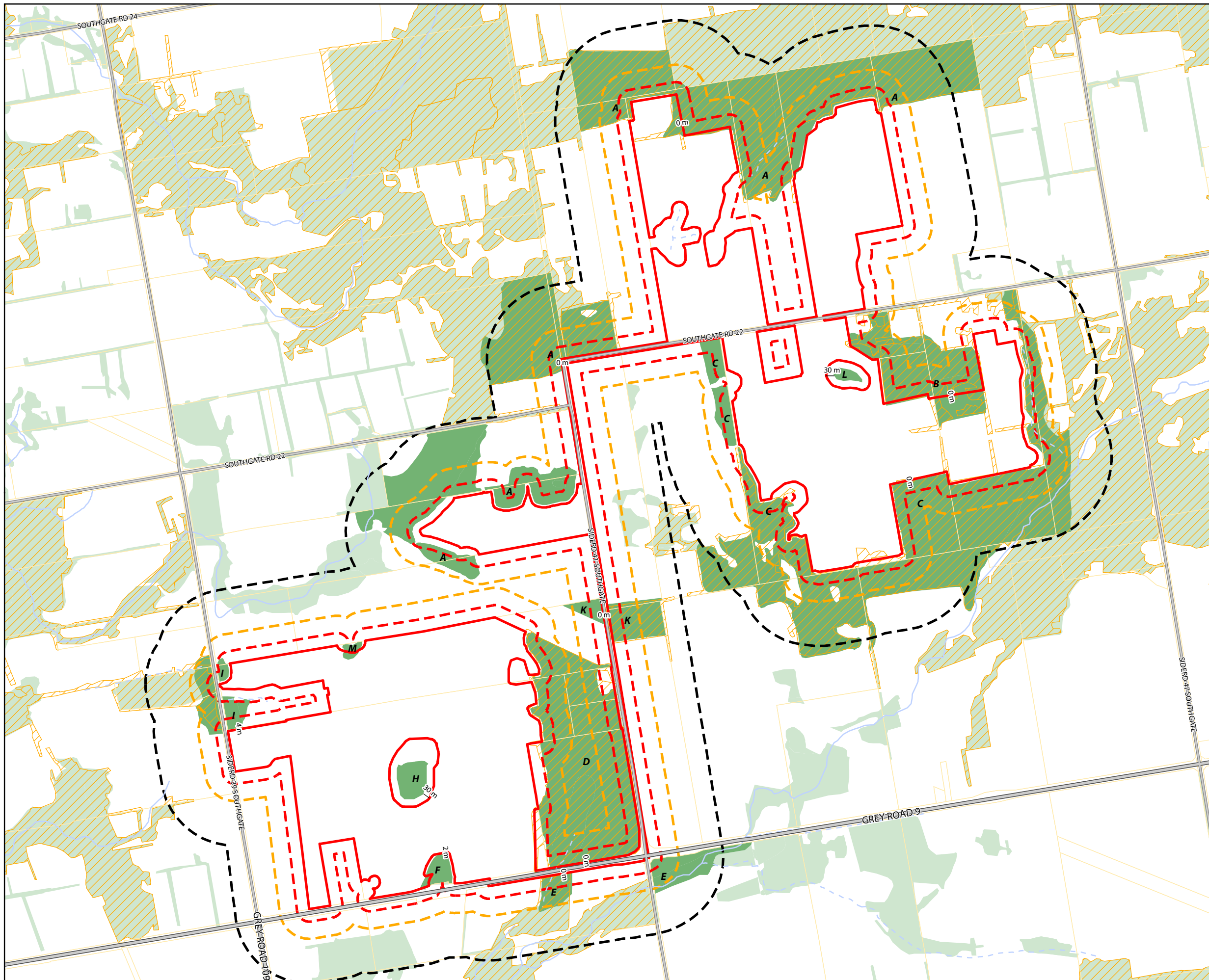
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SOUTHGATE SOLAR PROJECT

**FIGURE 6
WOODLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Grey County Significant Woodland
- Dillon Delineated Woodland
- Unevaluated Woodland

Note: Woodlands depicted on this figure are to delineate boundaries only. Evaluation for significance will be done in the NHA Evaluation of Significance Report.



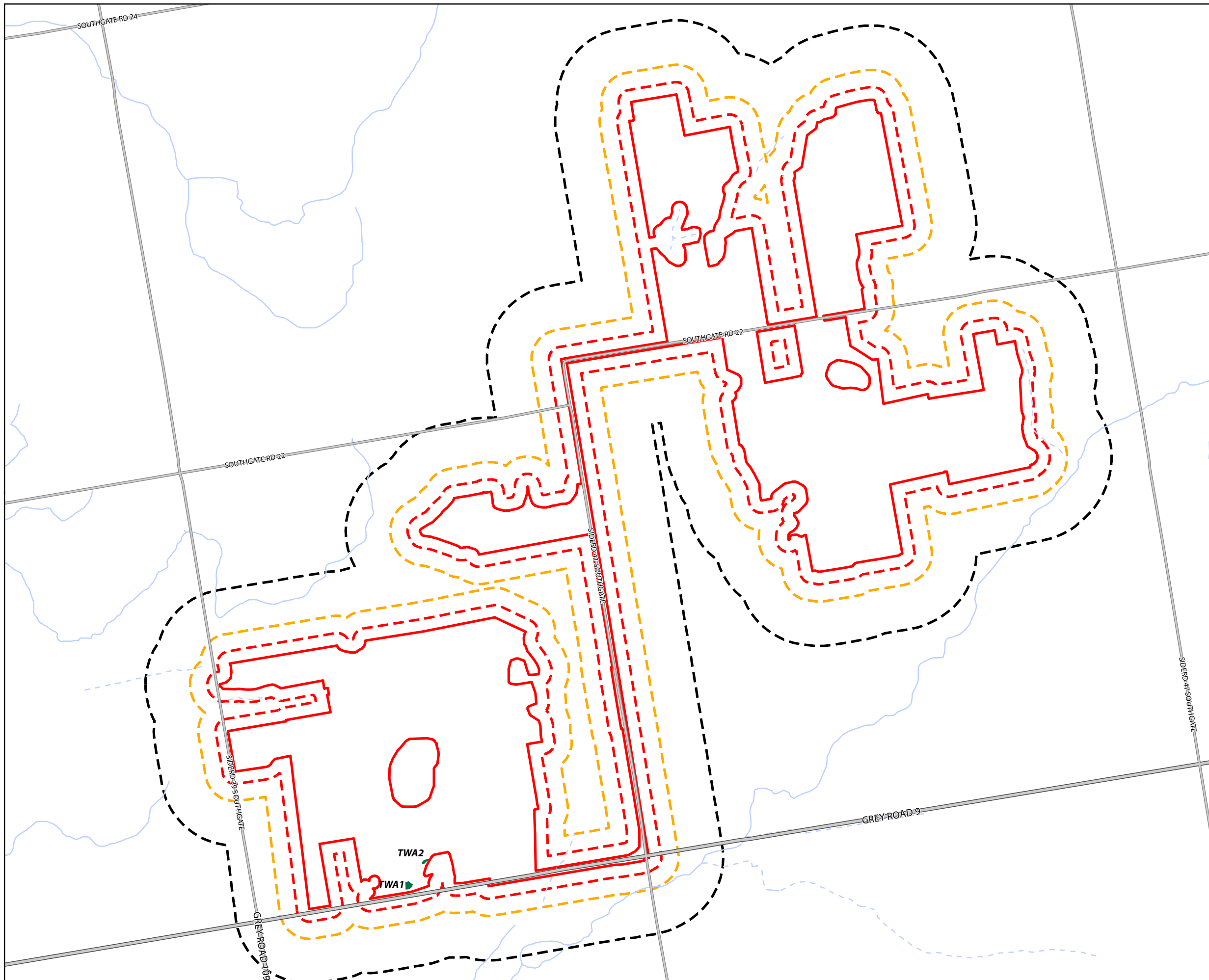
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**FIGURE 7A
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
TURTLE WINTERING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Turtle Wintering Area



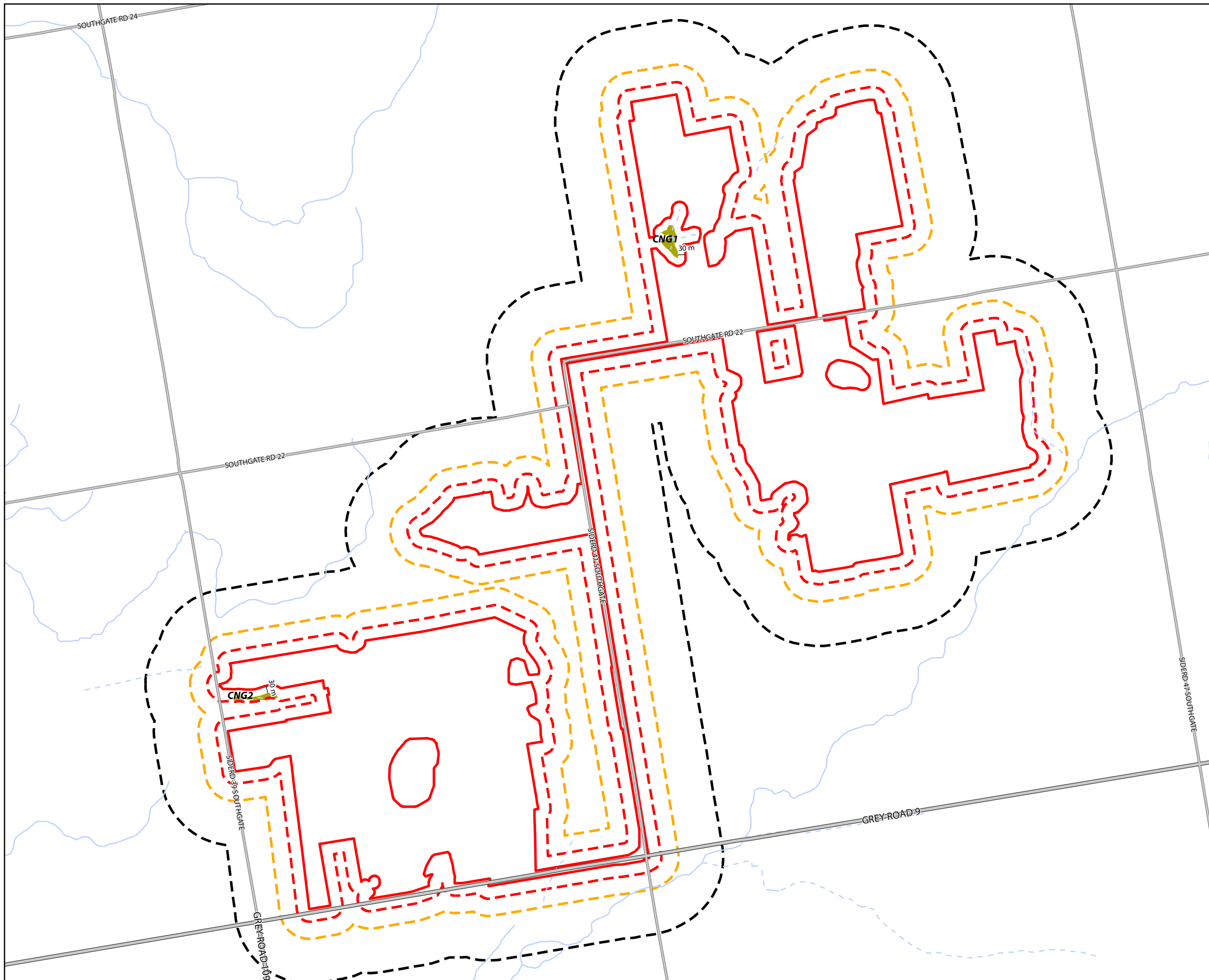
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SOUTHGATE SOLAR PROJECT

**FIGURE 7B
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
COLONIAALLY NESTING BIRD BREEDING
HABITAT (GROUND)**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Colonially Nesting Bird Breeding Habitat (Ground)



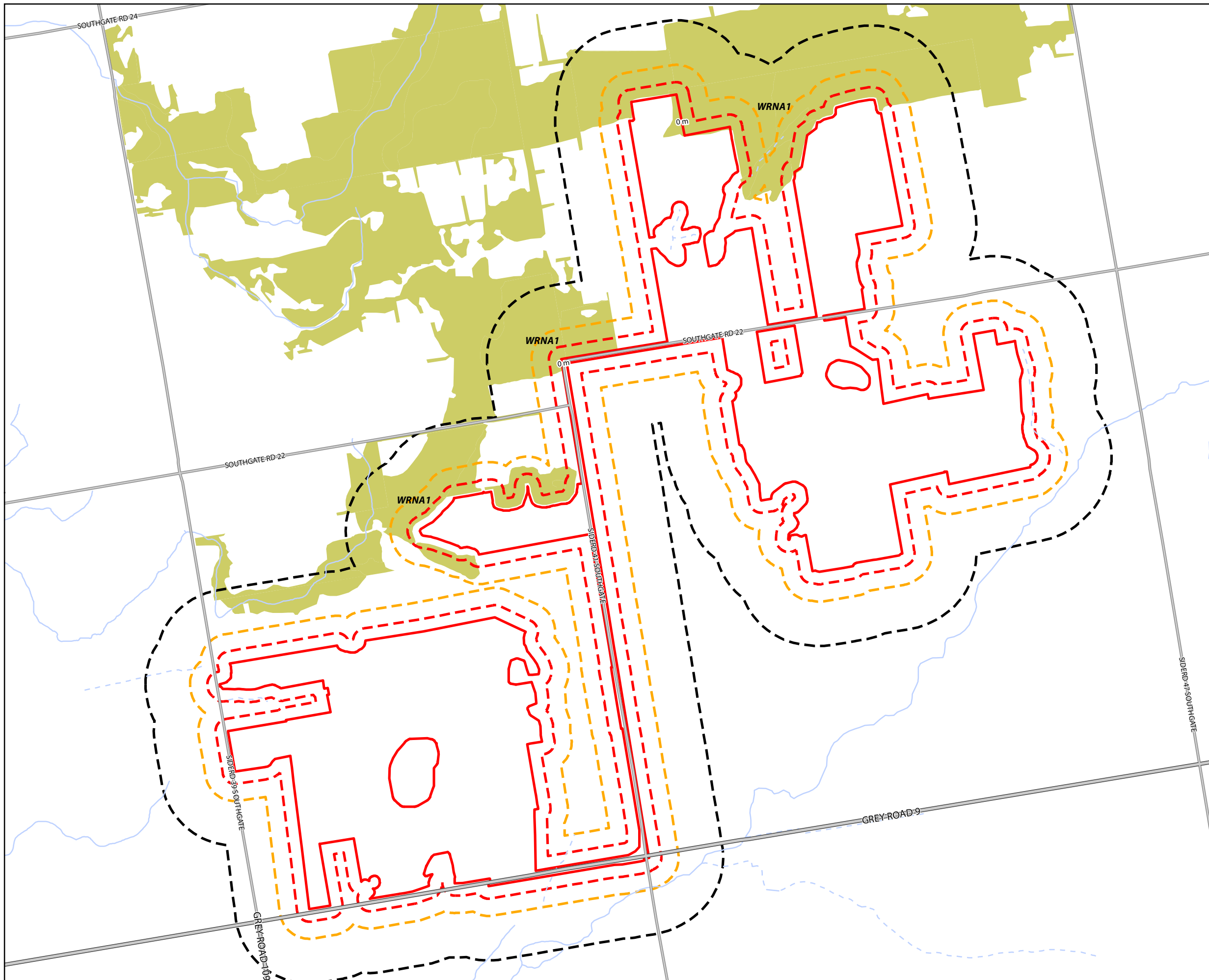
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SOUTHGATE SOLAR PROJECT

**FIGURE 7C
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
WOODLAND RAPTOR NESTING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Woodland Raptor Nesting Area



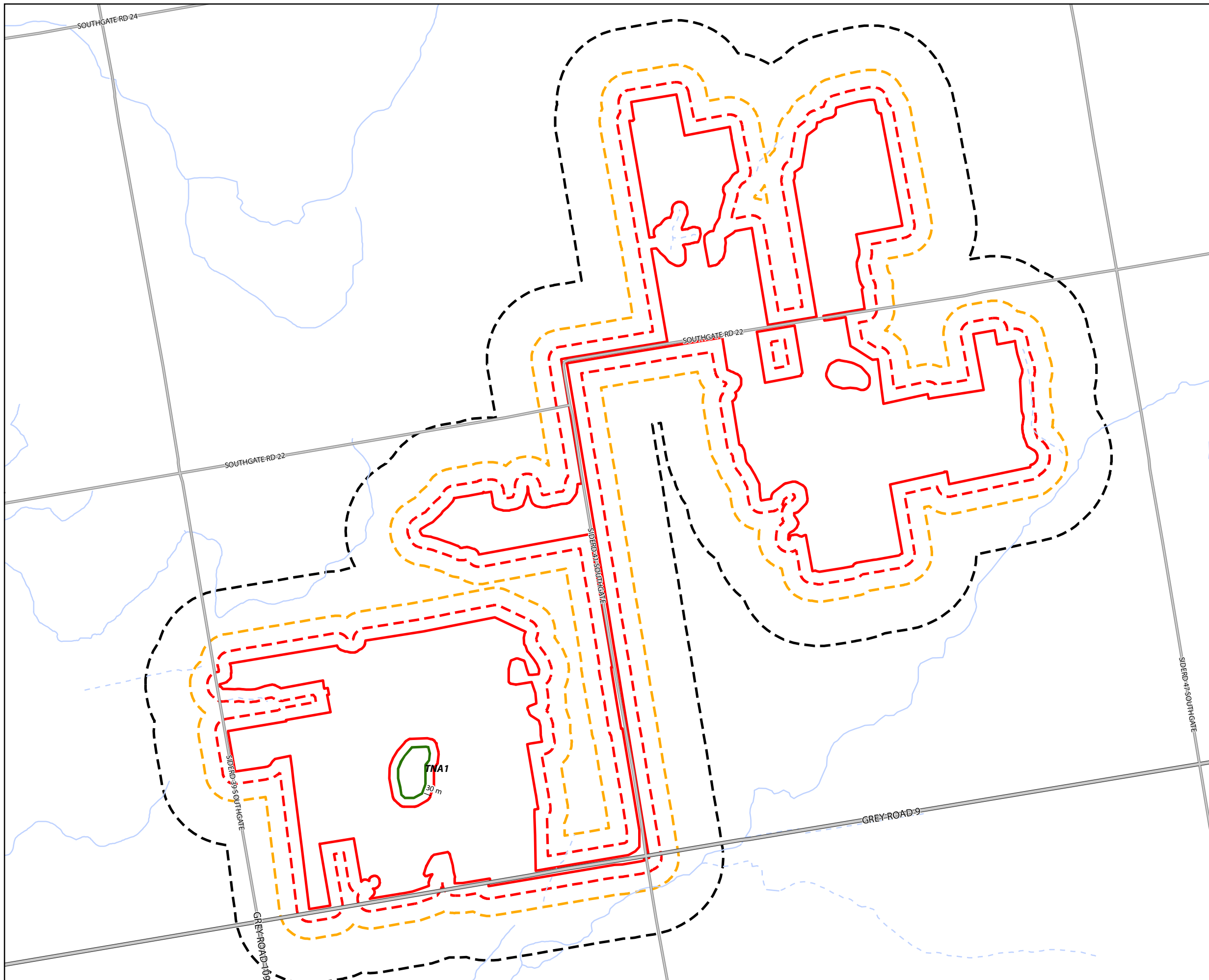
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







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**FIGURE 7D
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
TURTLE NESTING AREAS**

-  Permanent Watercourse
-  Intermittent Watercourse
-  Project Location
-  Project Location 50 m Setback
-  Project Location 120 m Setback
-  Project Location 300 m Setback
-  Turtle Nesting Area



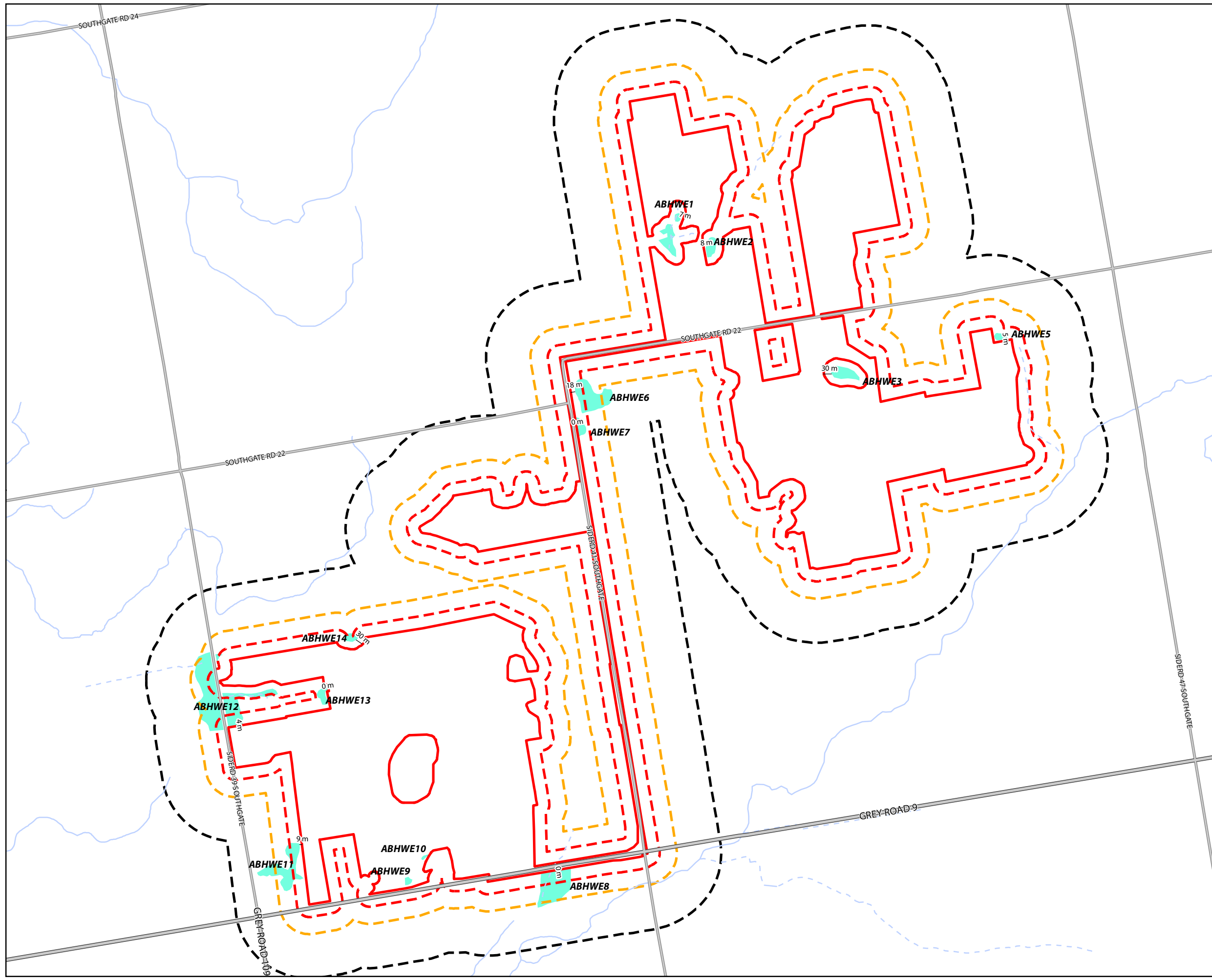
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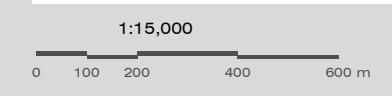
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**FIGURE 7E
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WETLAND)**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Amphibian Breeding Habitat (Wetland)



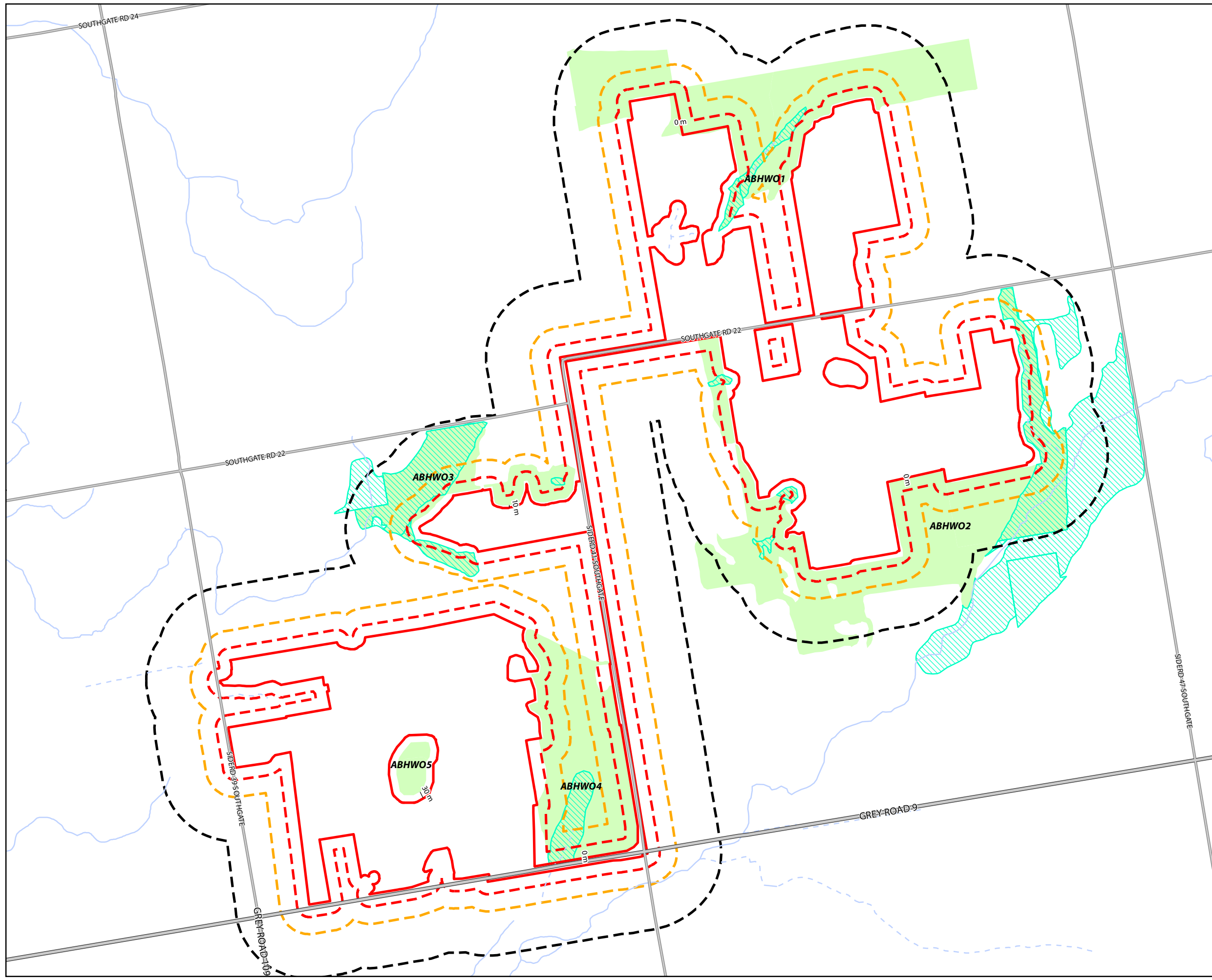
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**FIGURE 7F
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WOODLAND)**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Wetland
- Amphibian Breeding Habitat (Woodland)



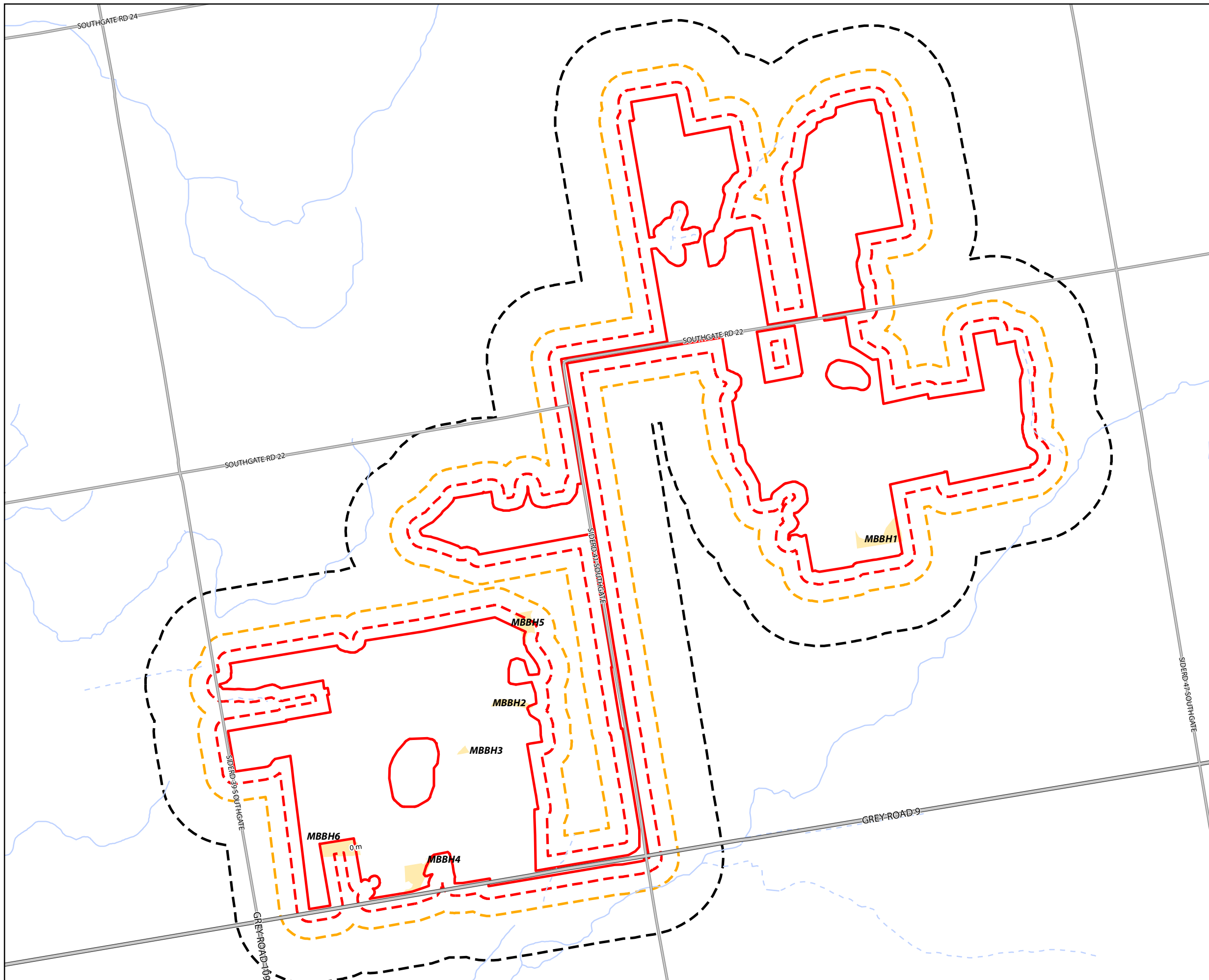
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**FIGURE 7G
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
MARSH BIRD BREEDING HABITAT**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Marsh Bird Breeding Habitat



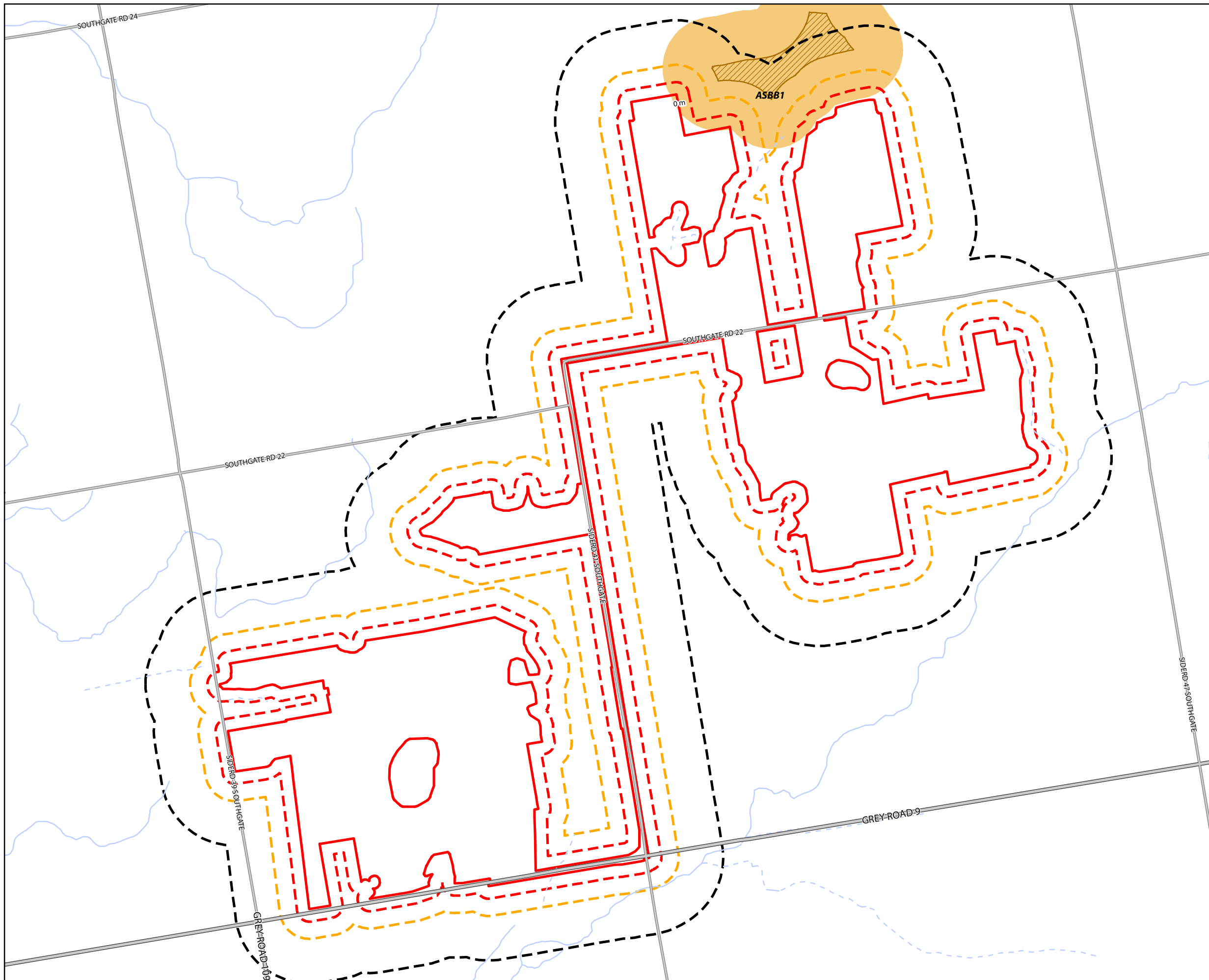
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**FIGURE 7H
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
WOODLAND AREA-SENSITIVE
BIRD BREEDING HABITAT**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- 200 m Woodland Interior
- Woodland Area-Sensitive Bird Breeding Habitat



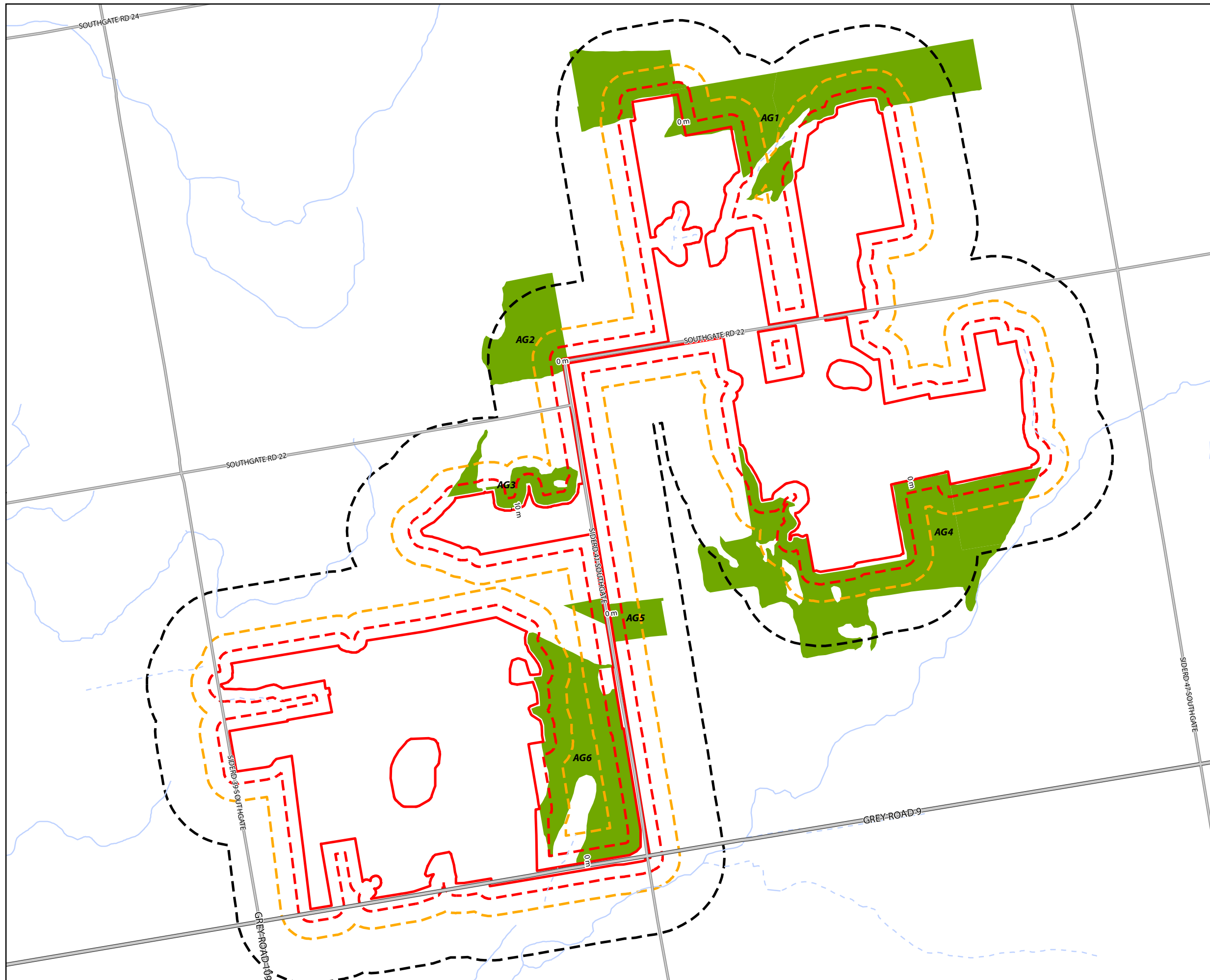
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**FIGURE 71
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
AMERICAN GROMWELL**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- American Gromwell



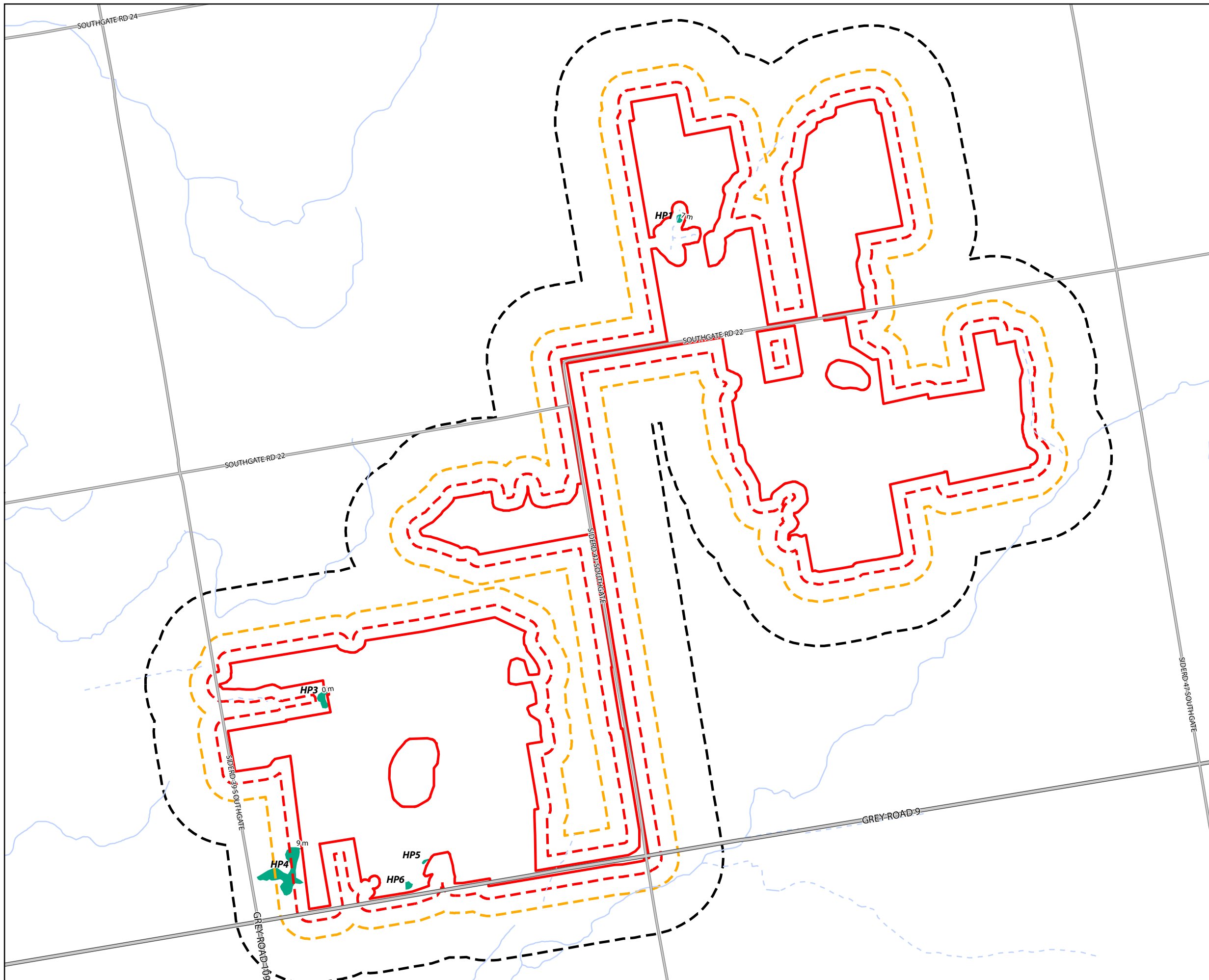
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**FIGURE 7J
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
HILL'S PONDWEED**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Hill's Pondweed



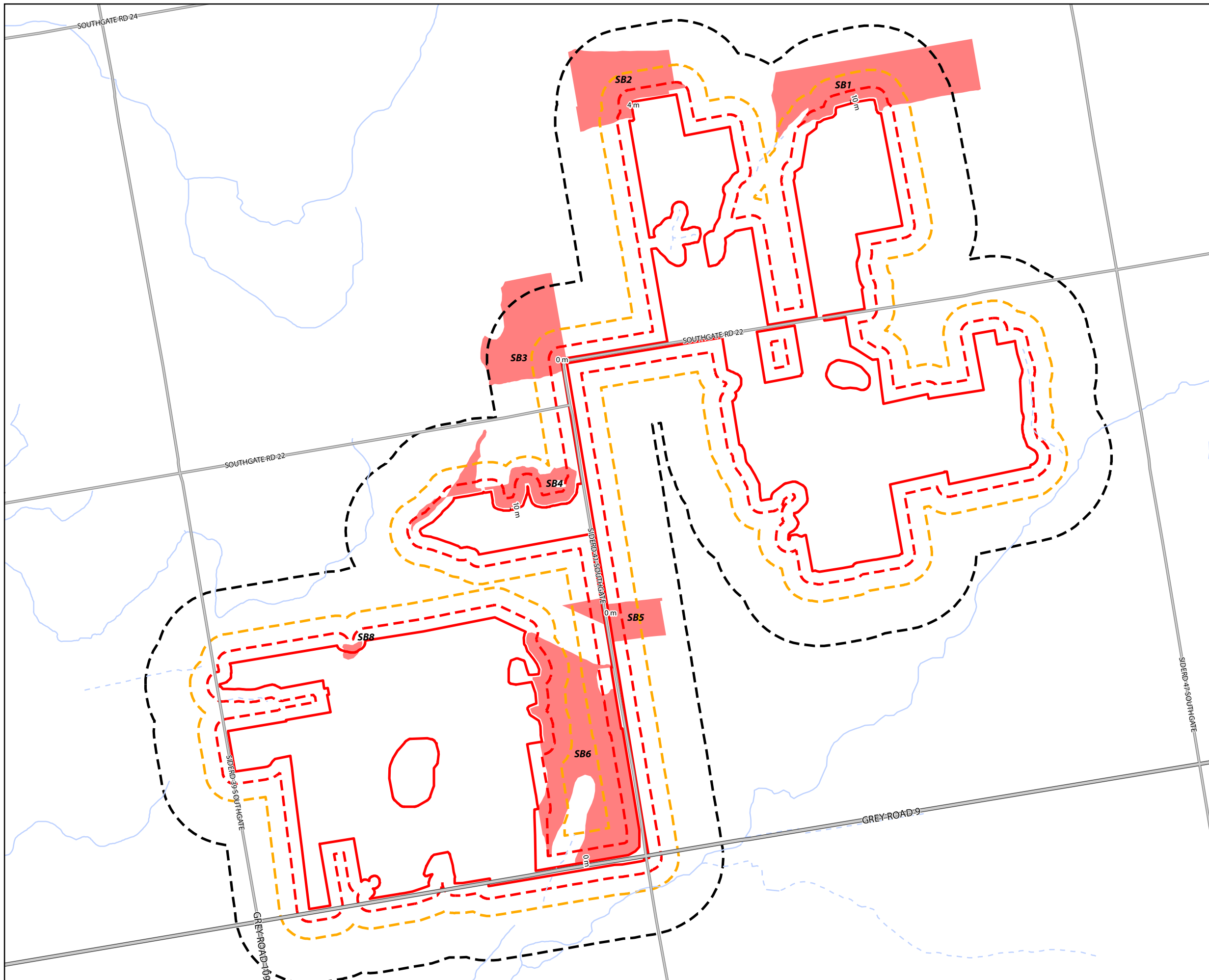
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**FIGURE 7K
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
SCARLET BEEBALM**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Scarlet Beebalm



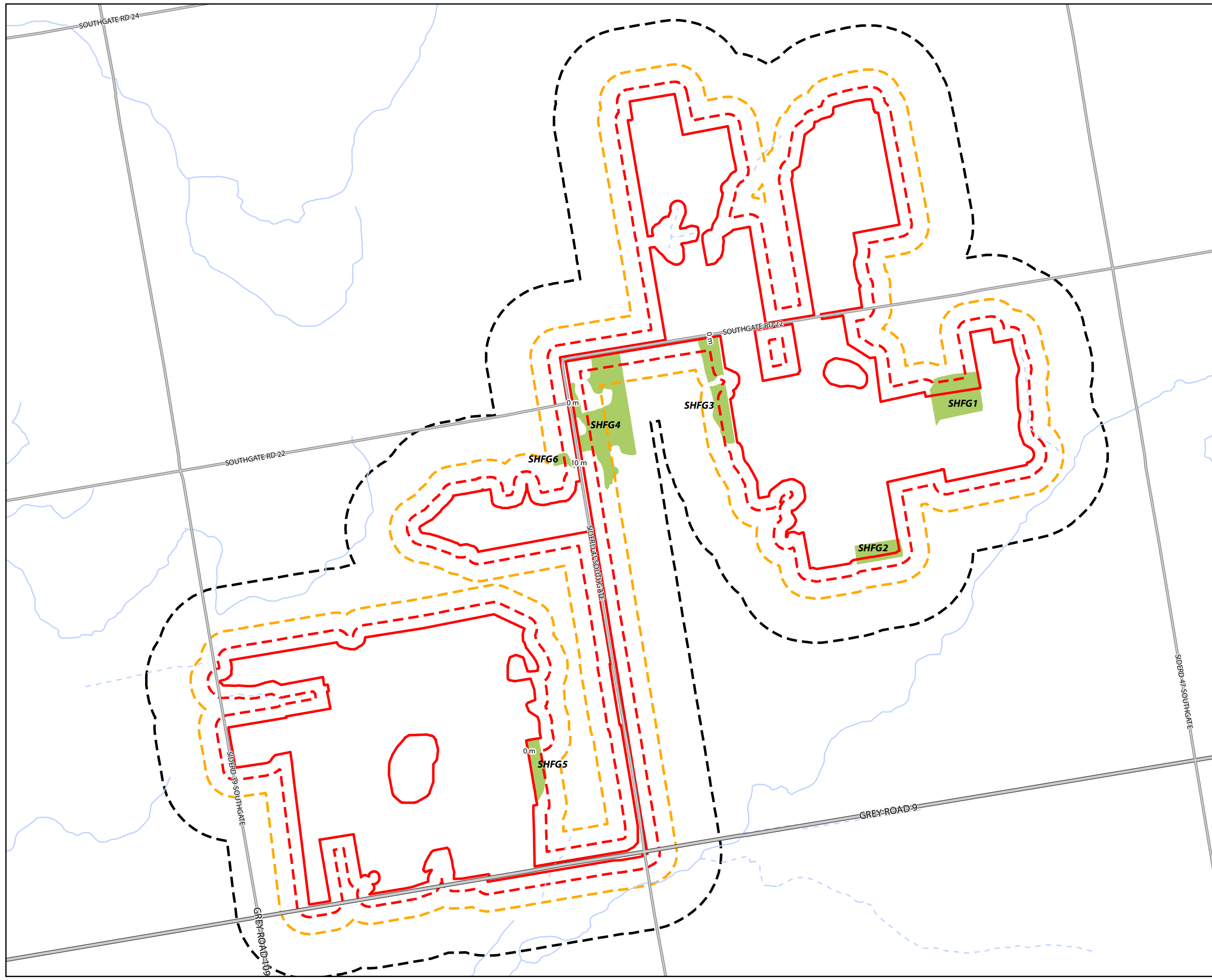
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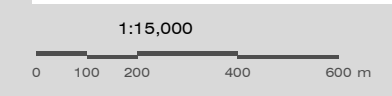
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SOUTHGATE SOLAR PROJECT

**FIGURE 7L
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
SOFT-HAIRY FALSE GROMWELL**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Soft-Hairy False Gromwell



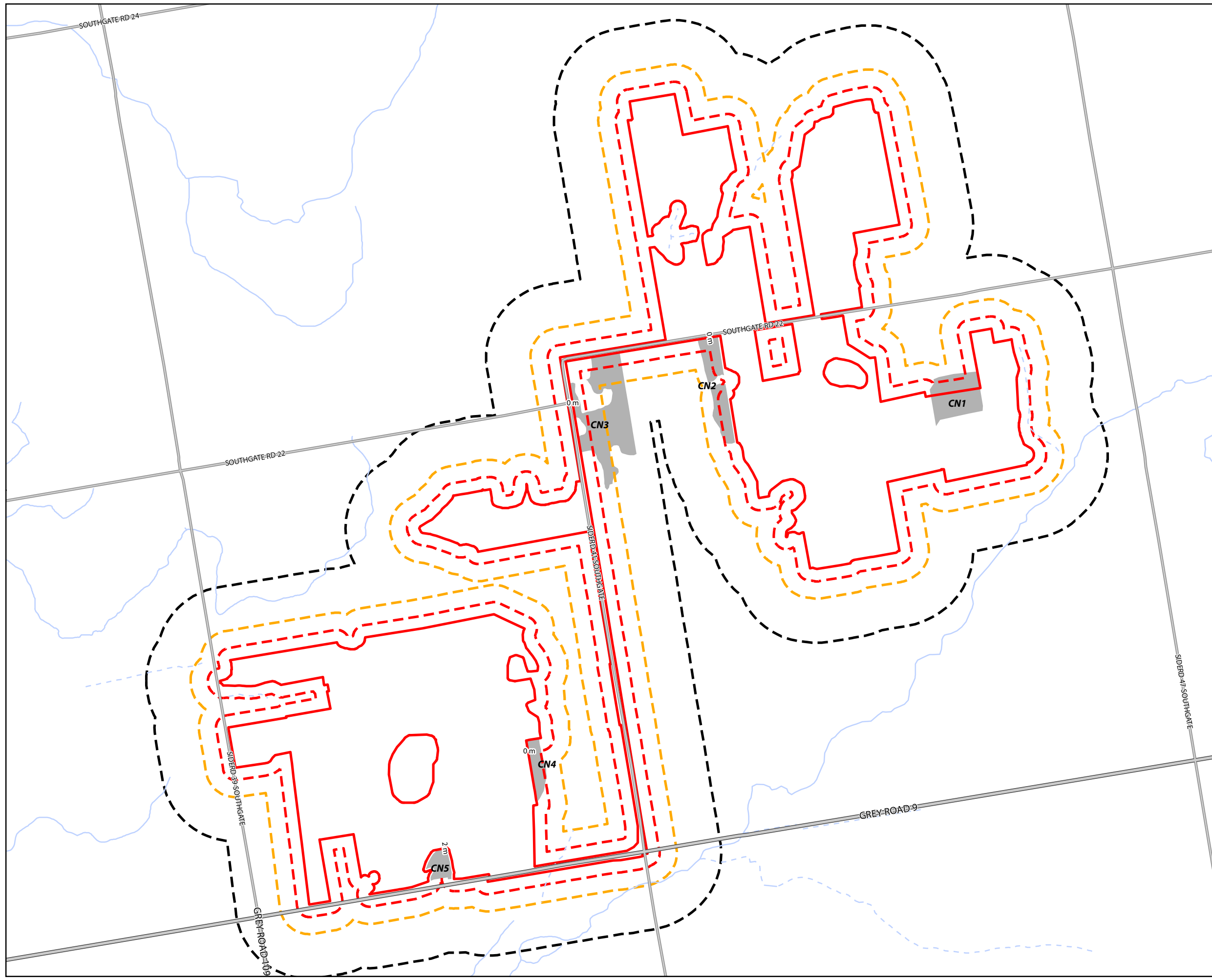
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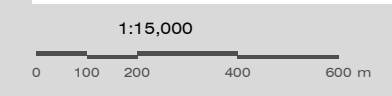
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SOUTHGATE SOLAR PROJECT

**FIGURE 7M
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
COMMON NIGHTHAWK**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Common Nighthawk



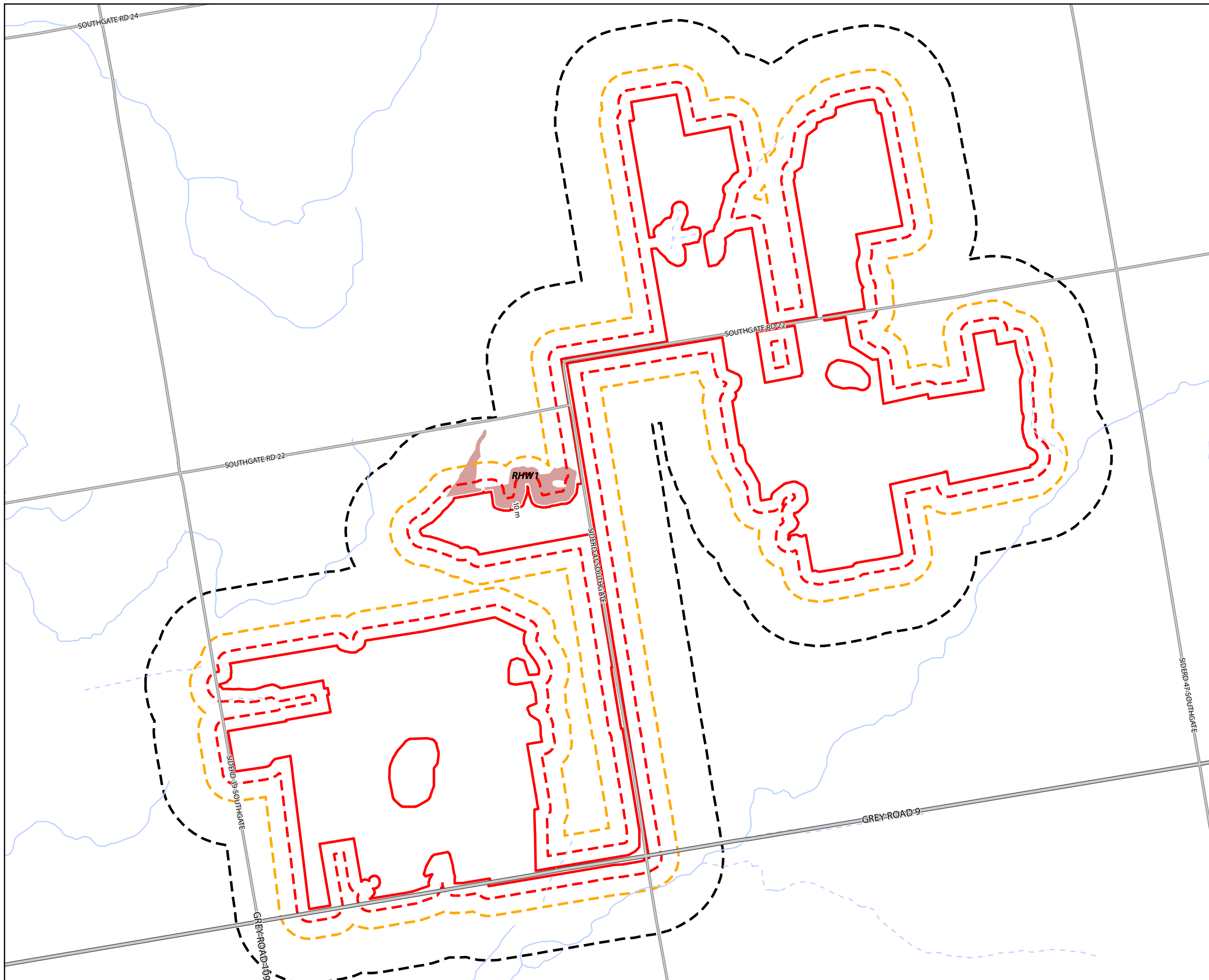
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PROJECT: 149154
STATUS: DRAFT
DATE: 1/7/2015



SOUTHGATE SOLAR PROJECT

**FIGURE 7N
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
RED-HEADED WOODPECKER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Red-Headed Woodpecker



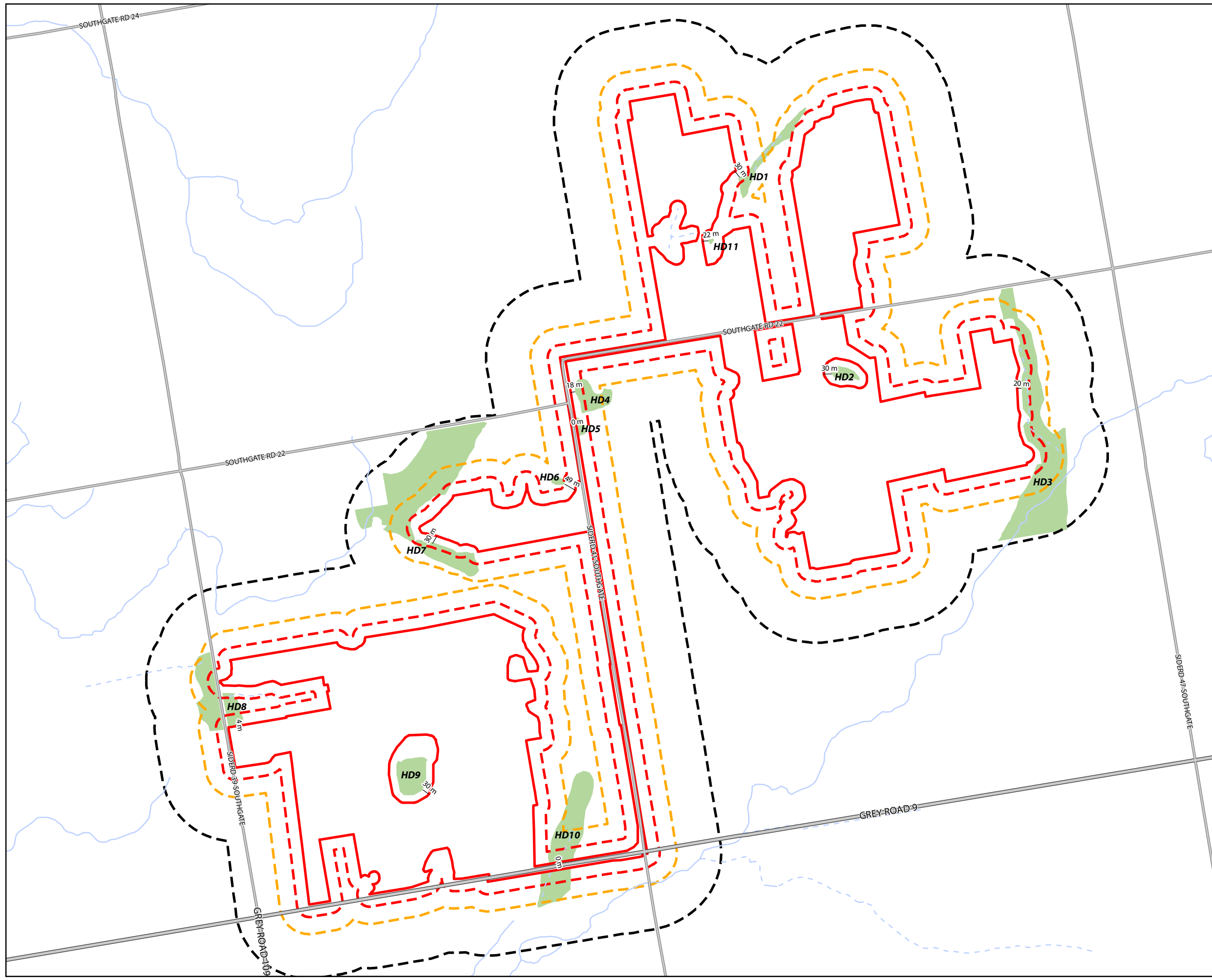
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



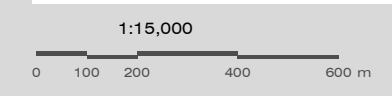
PROJECT: 149154
STATUS: DRAFT
DATE: 1/7/2015



SOUTHGATE SOLAR PROJECT

**FIGURE 70
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
HARLEQUIN DARNER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Harlequin Darners



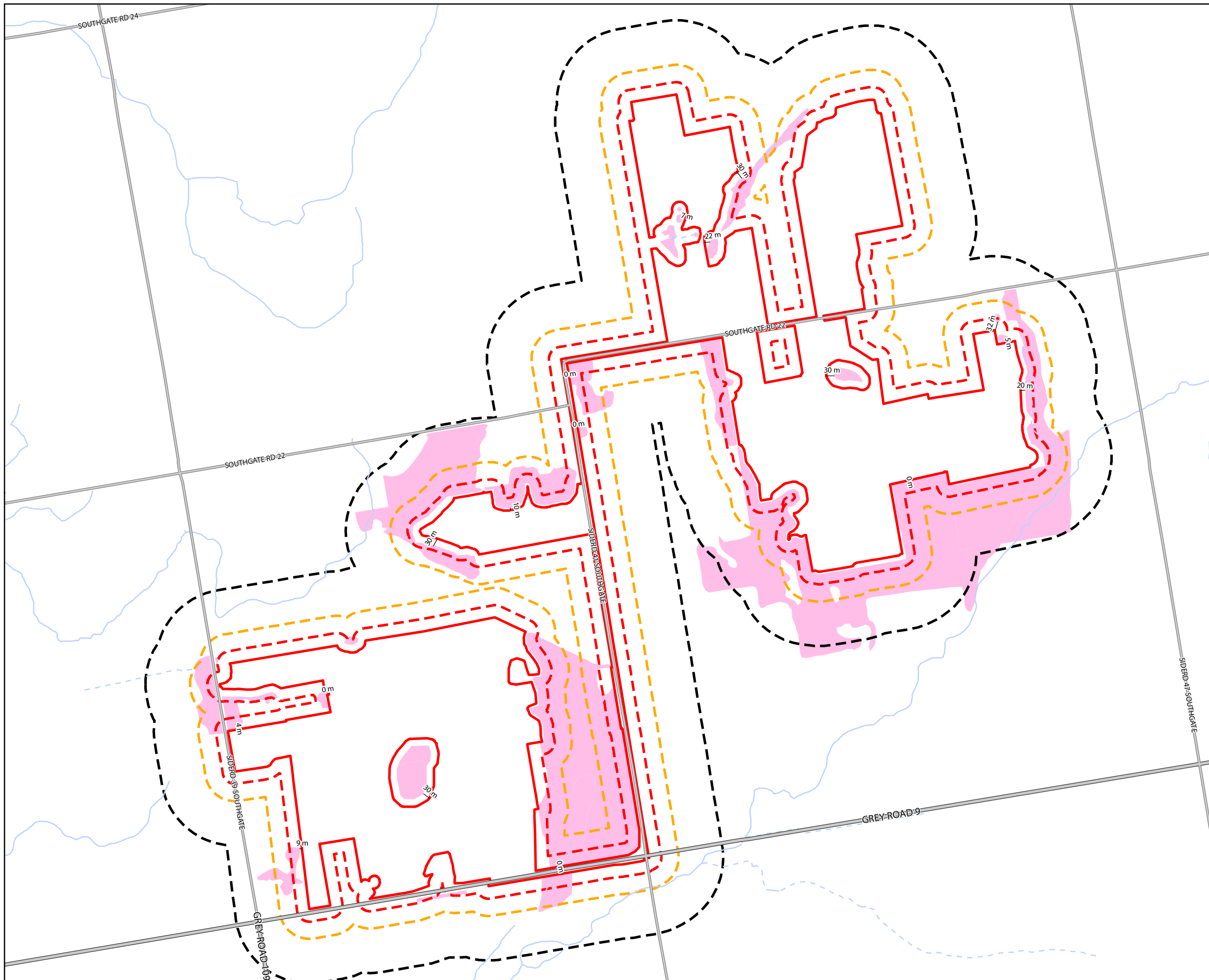
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 1/7/2015



SOUTHGATE SOLAR PROJECT

**FIGURE 7P
CANDIDATE SIGNIFICANT
WILDLIFE HABITAT
GENERALIZED CANDIDATE SIGNIFICANT
WILDLIFE HABITAT**

- Permanent Watercourse
- - - Intermittent Watercourse
- ▭ Project Location
- - - Project Location 50 m Setback
- - - Project Location 120 m Setback
- - - Project Location 300 m Setback
- Generalized Candidate Significant Wildlife Habitat:
 - Seeps and Springs
 - Waterfowl Stopover and Staging Areas (Aquatic)
 - Turtle Wintering Areas
 - Deer Winter Congregation Areas
 - Marsh Bird Breeding Habitat
 - Bat Maternity Colonies
 - Shorebird Migratory Stopover and Staging Areas
 - Woodland Area Sensitive Bird Breeding Habitat
 - Amphibian Breeding Habitat (Wetland)
 - Hill's Pondweed
 - Scarlet Beebalm



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 17/2015

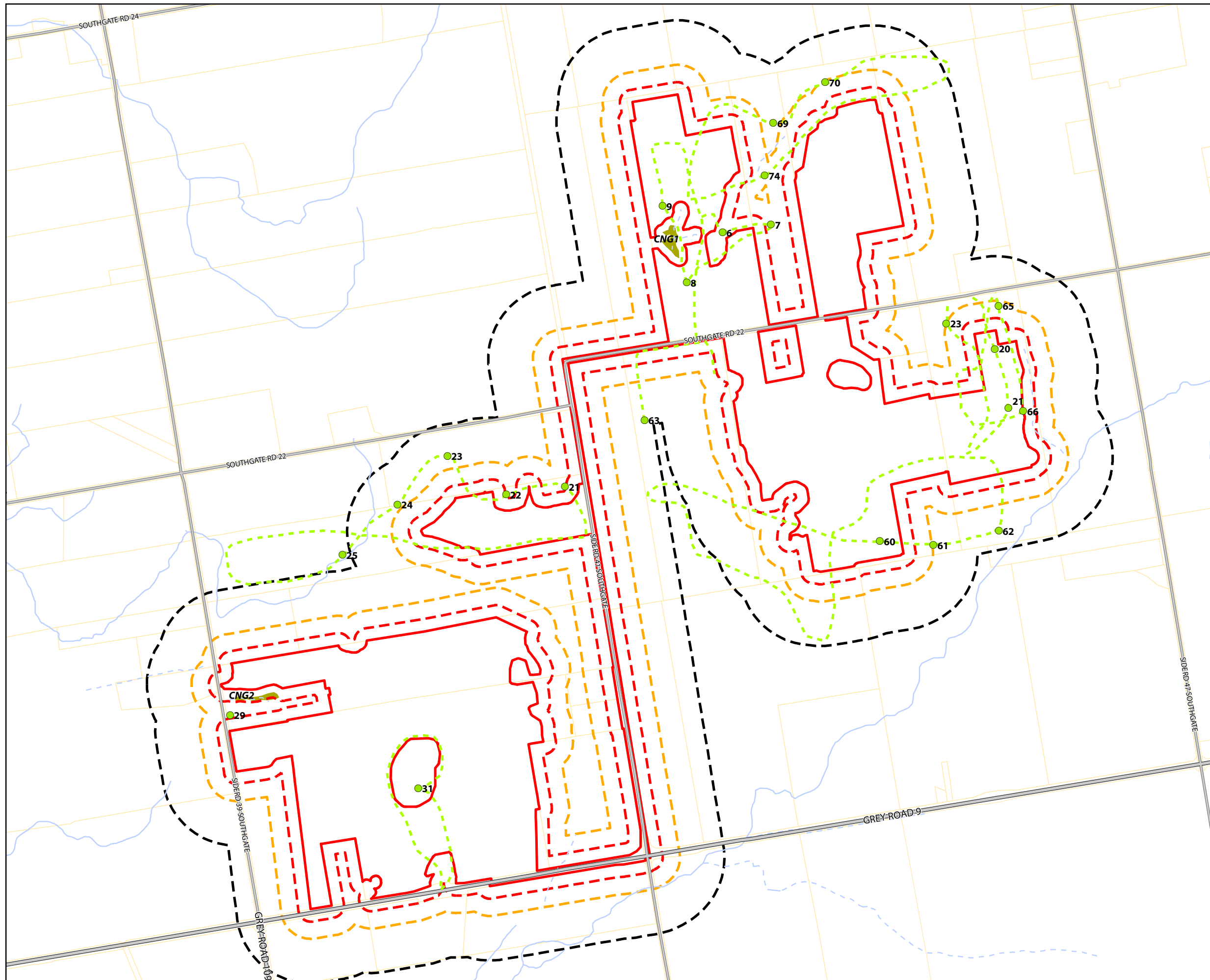


APPENDIX B
Field Surveys



APPENDIX B1

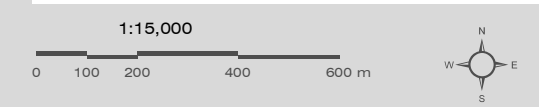
Survey Maps



SOUTHGATE SOLAR PROJECT

**FIGURE B1-1
COLONIAALLY NESTING BIRD BREEDING
HABITAT (GROUND)**

- Breeding Bird Survey Station
- - - Breeding Bird Survey Area Search Route
- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- - - Project Location 50 m Setback
- - - Project Location 120 m Setback
- - - Project Location 300 m Setback
- Parcel Boundary
- Coloniaally Nesting Bird Breeding Habitat (Ground)



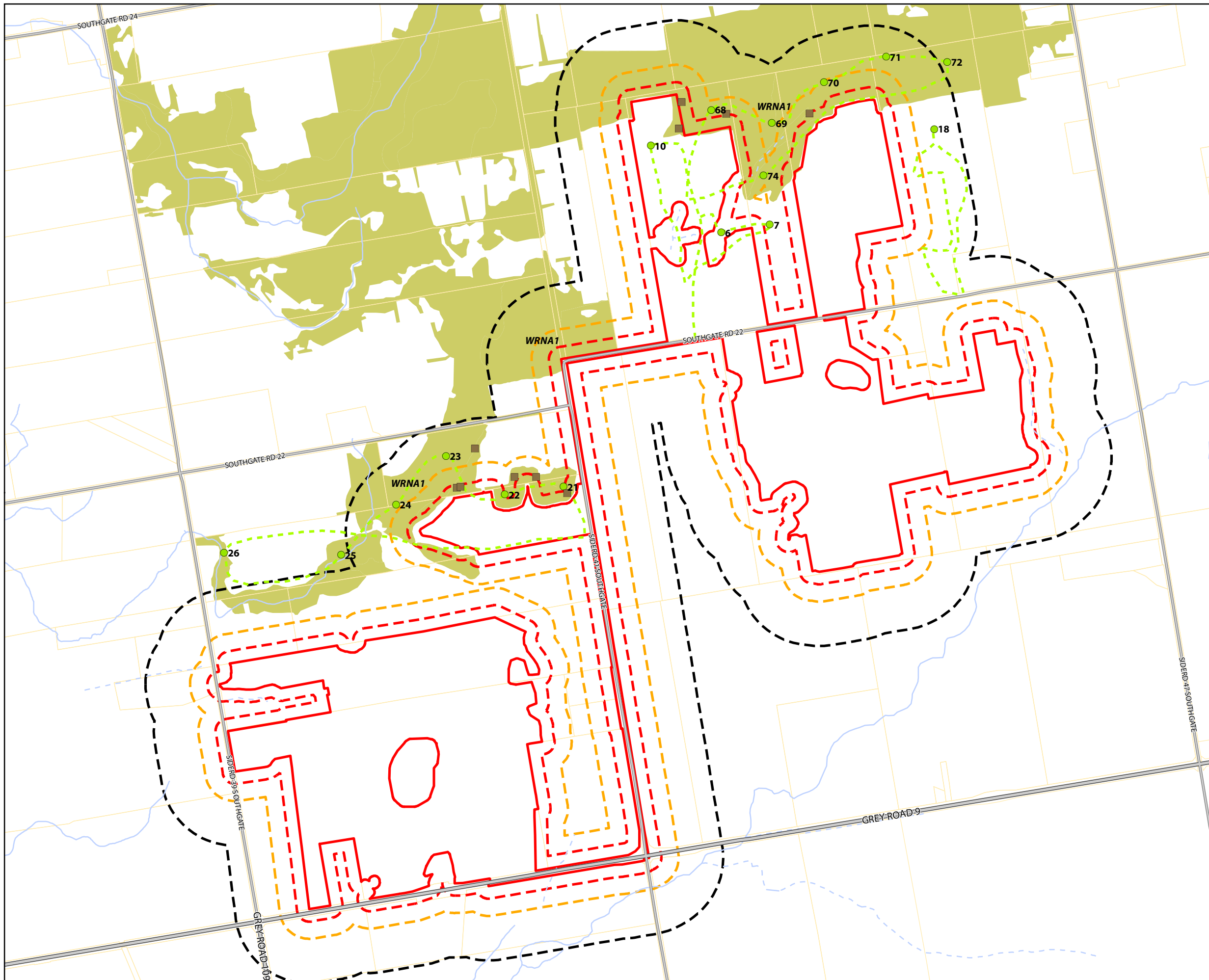
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



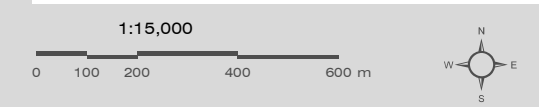
PROJECT: 149154
STATUS: DRAFT
DATE: 1/8/2015



SOUTHGATE SOLAR PROJECT

**FIGURE B1-2
WOODLAND RAPTOR NESTING AREAS**

- Snag Density Search
- Breeding Bird Survey Station
- Breeding Bird Survey Area Search Route
- Permanent Watercourse
- - - Intermittent Watercourse
- ▭ Project Location
- ▭ Project Location 50 m Setback
- ▭ Project Location 120 m Setback
- ▭ Project Location 300 m Setback
- ▭ Parcel Boundary
- ▭ Woodland Raptor Nesting Area



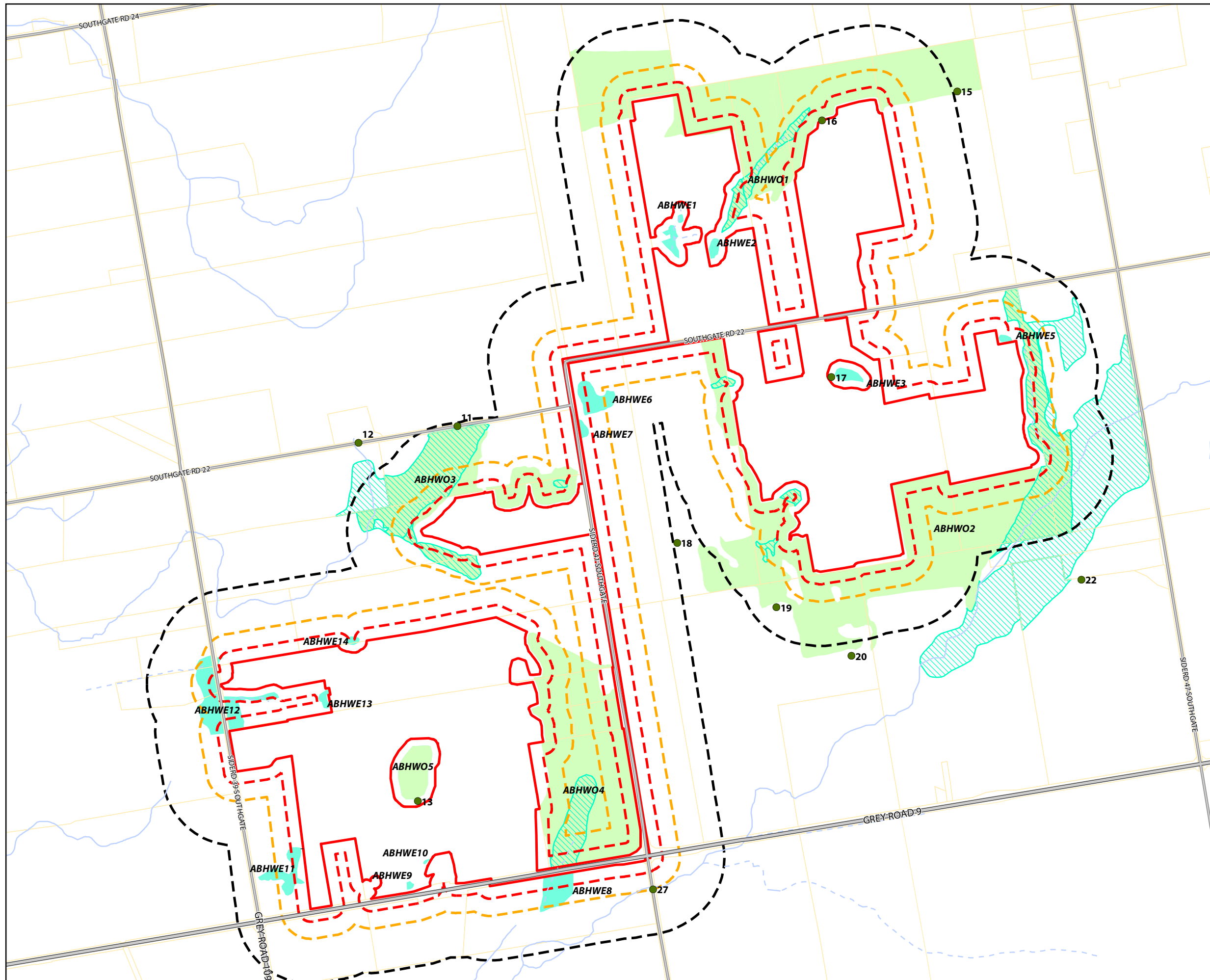
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\EOS



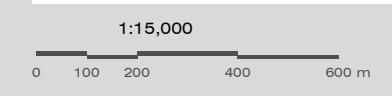
PROJECT: 149154
STATUS: DRAFT
DATE: 12/4/2014



SOUTHGATE SOLAR PROJECT

**FIGURE B1-3
AMPHIBIAN BREEDING HABITAT
(ALL TYPES)**

- Amphibian Breeding Habitat Survey Station
- Permanent Watercourse
- - - Intermittent Watercourse
- ▭ Project Location
- - - Project Location 50 m Setback
- - - Project Location 120 m Setback
- - - Project Location 300 m Setback
- ▭ Parcel Boundary
- ▨ Assumed Provincially Significant Wetland
- ▨ Amphibian Breeding Habitat (Wetland)
- ▨ Amphibian Breeding Habitat (Woodland)



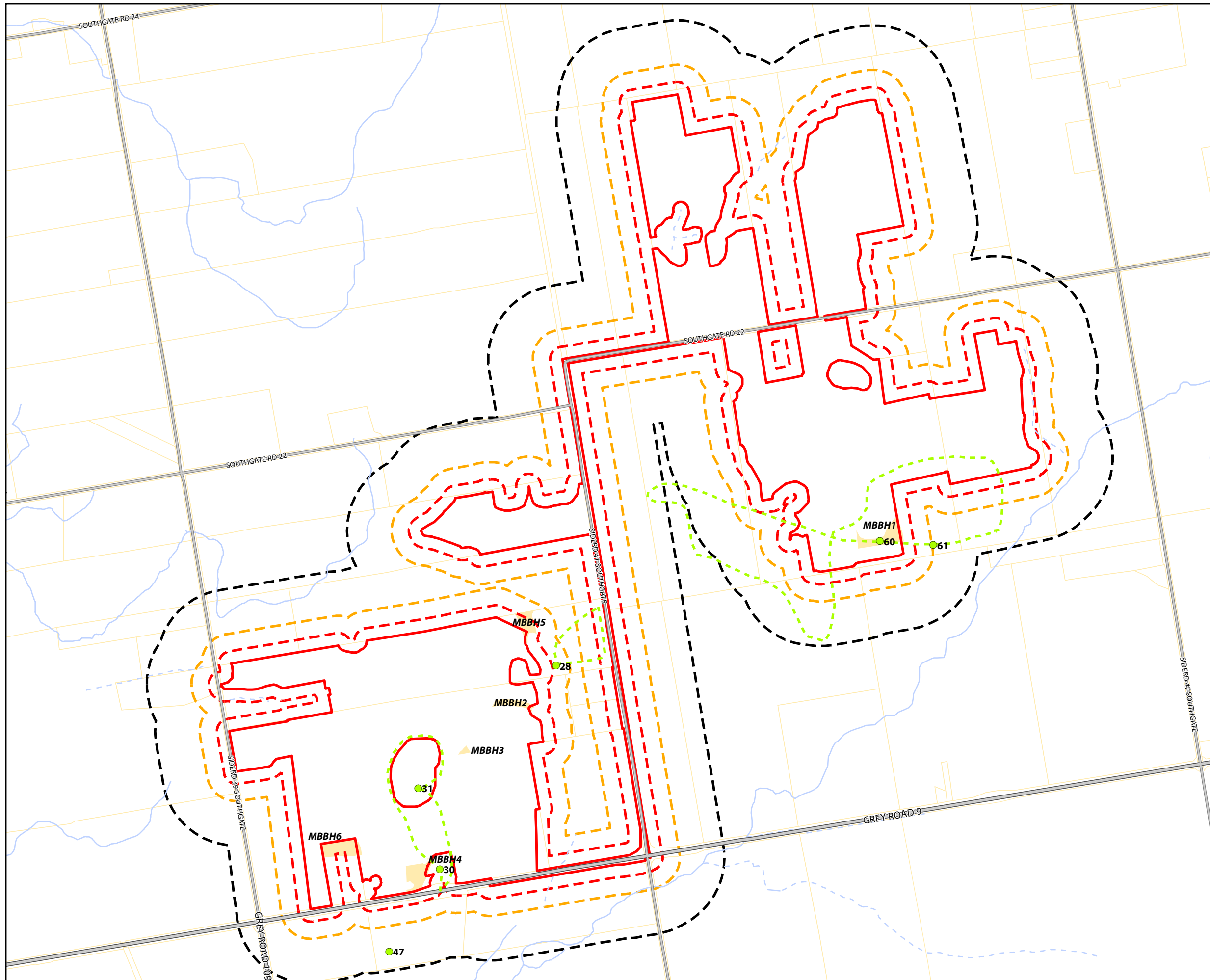
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 2/9/2015



SOUTHGATE SOLAR PROJECT

**FIGURE B1-4
MARSH BIRD BREEDING HABITAT**

- Breeding Bird Survey Station
- - - Breeding Bird Survey Area Search Route
- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Marsh Bird Breeding Habitat



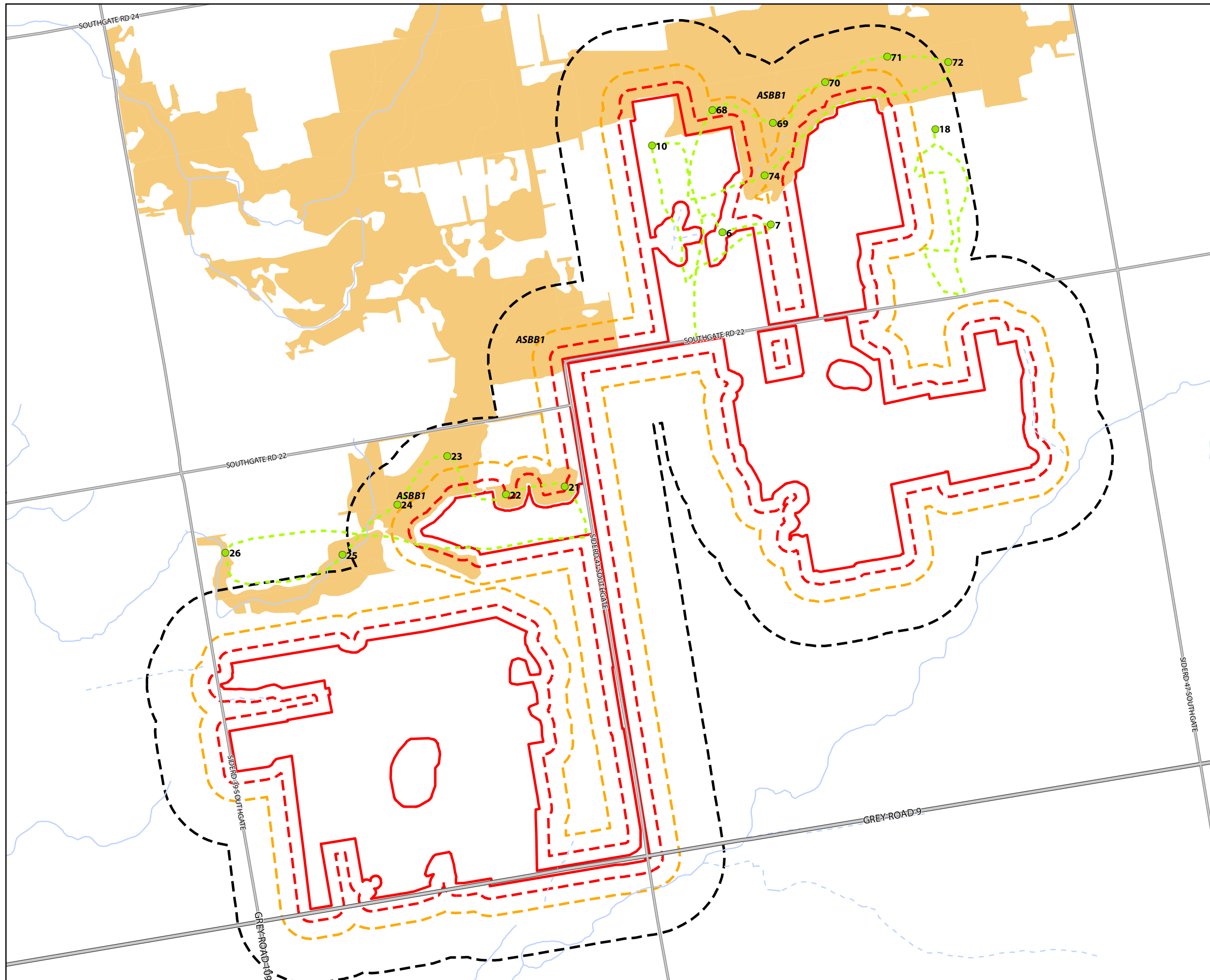
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



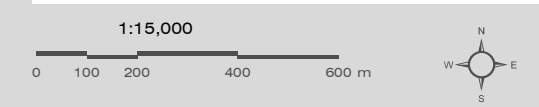
PROJECT: 149154
STATUS: DRAFT
DATE: 12/5/2014



SOUTHGATE SOLAR PROJECT

**FIGURE B1-5
WOODLAND AREA-SENSITIVE
BIRD BREEDING HABITAT**

- Breeding Bird Survey Station
- - - Breeding Bird Survey Area Search Route
- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- - - Project Location 50 m Setback
- - - Project Location 120 m Setback
- - - Project Location 300 m Setback
- Woodland Area-Sensitive Bird Breeding Habitat



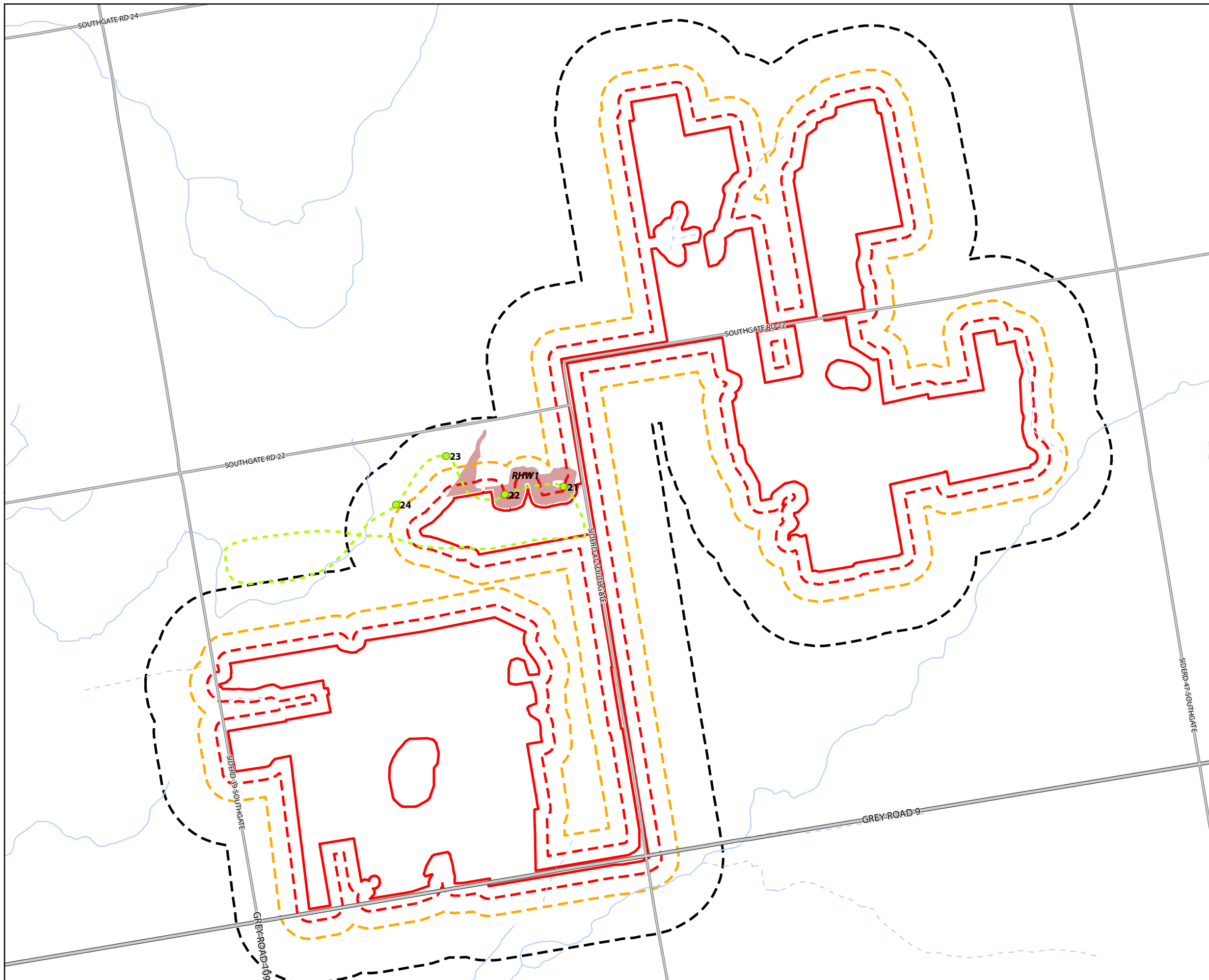
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



PROJECT: 149154
STATUS: DRAFT
DATE: 12/5/2014



SOUTHGATE SOLAR PROJECT

**FIGURE B1-6
RED-HEADED WOODPECKER HABITAT**

- Breeding Bird Survey Station
- - - Breeding Bird Survey Area Search Route
- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Red-Headed Woodpecker



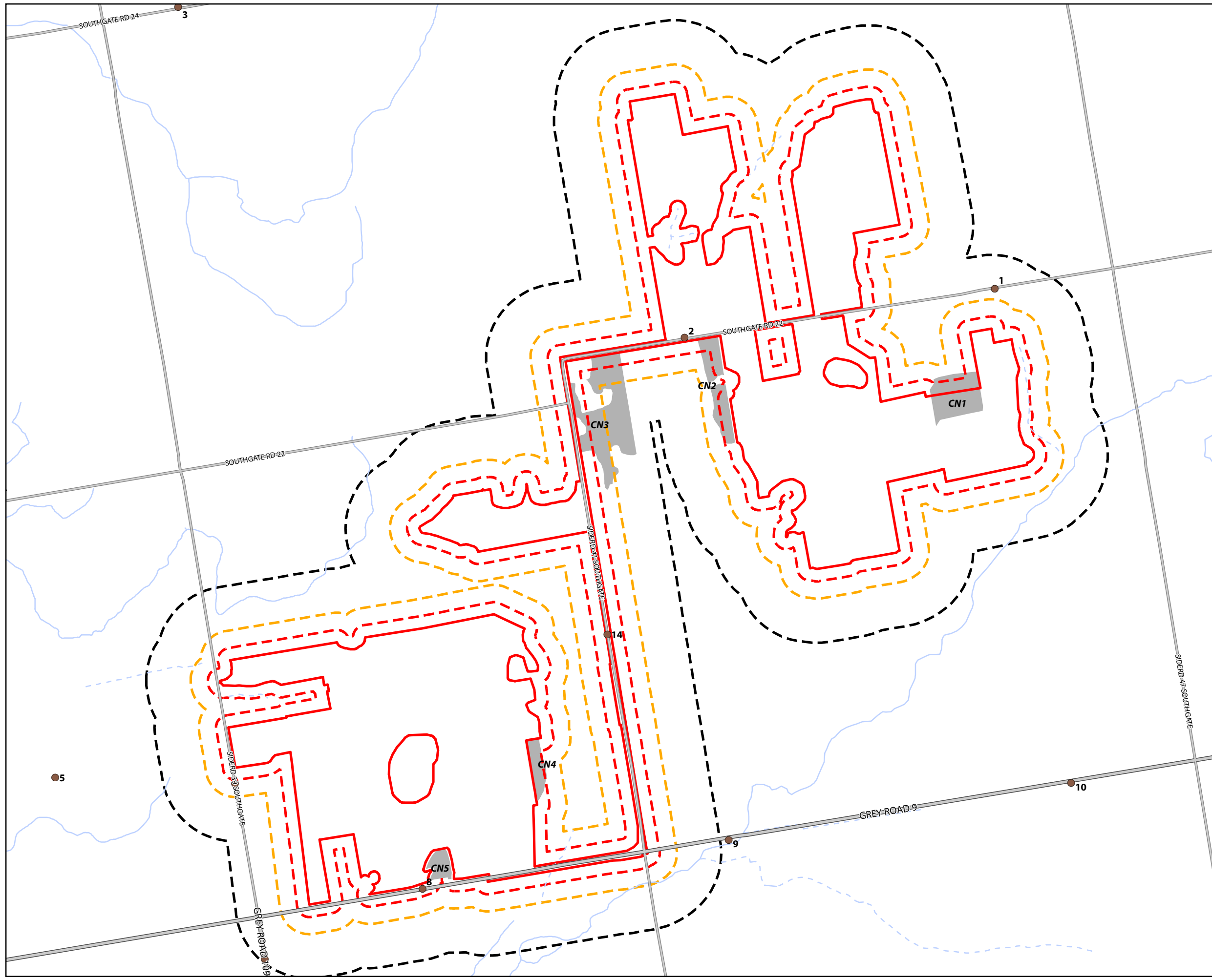
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Site Investigation



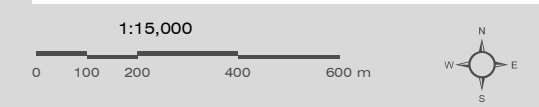
PROJECT: 149154
STATUS: DRAFT
DATE: 12/5/2014



SOUTHGATE SOLAR PROJECT

**FIGURE B1-7
COMMON NIGHTHAWK HABITAT**

- Crepuscular Bird Survey Station
- Permanent Watercourse
- - - Intermittent Watercourse
- ▭ Project Location
- - - Project Location 50 m Setback
- - - Project Location 120 m Setback
- - - Project Location 300 m Setback
- Common Nighthawk



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\EOS



PROJECT: 149154
STATUS: DRAFT
DATE: 1/8/2015

APPENDIX B2

Field Notes

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).



VISIT INFORMATION

Sunset: 20:26, 5 min surveys

Route #: _____ Route Name: Southgate Phase III Station (A - H): _____

Observer #: _____ Observer Name: Jonathan Harris

Visit #: 1 Day: 1 Month: May Year: 2014

Cloud Cover (10th): 100 Temperature (°C or °F): 7°C Beaufort Wind Scale (0-6): 1

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	✓
WOFR	✓	

* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

Station **A4**

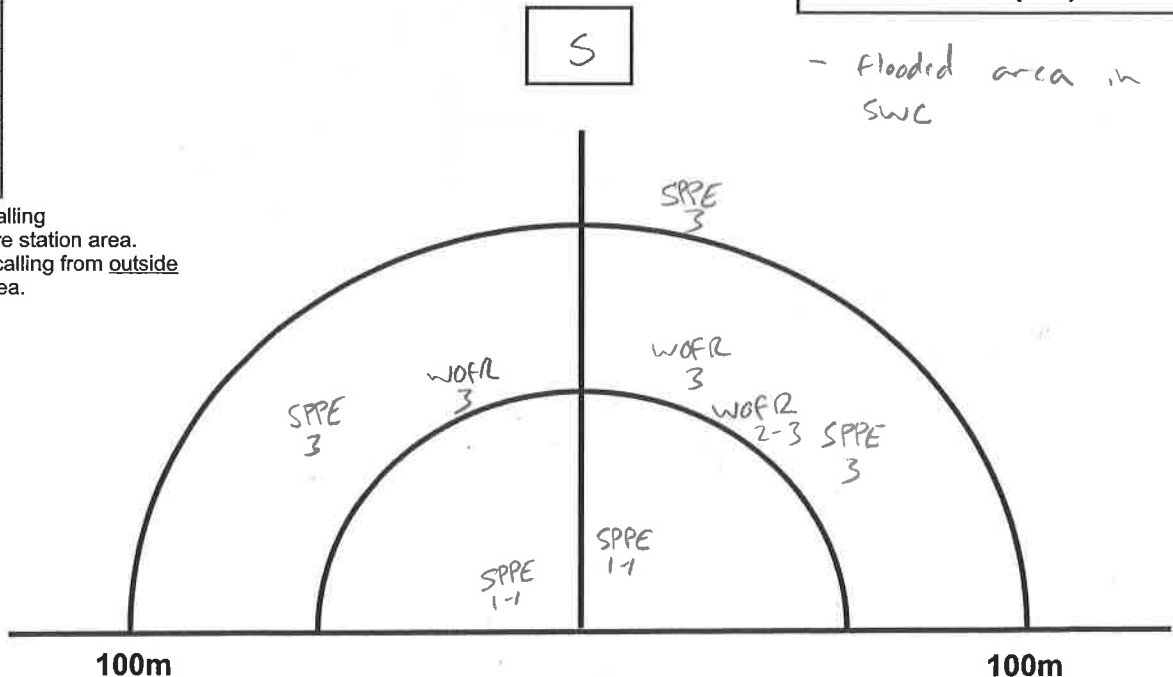
Station Start

Time (24 hr): 20:59

Background

Noise Code (1-4): 0

- flooded area in SWC



1/5

Station Start
Time (24 hr): 21:44

Background
Noise Code (1-4): 0

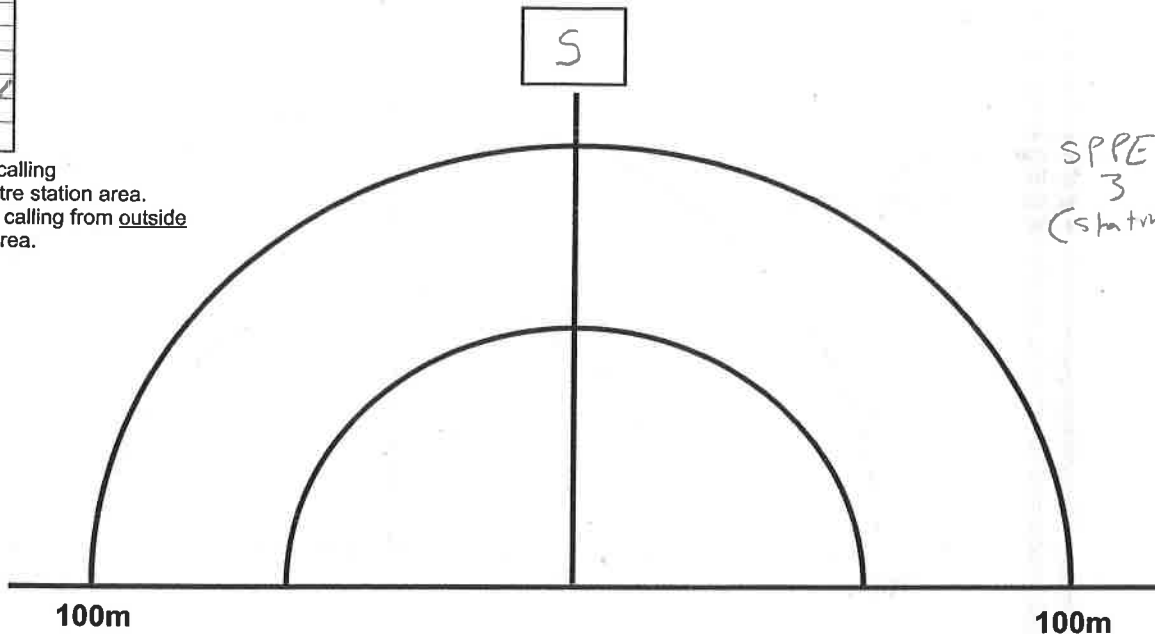
SWC

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

Station 11

S

SPPE
3
(station 12)



* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR	✓	
PIFR		
SPPE	✓	
WOFR	✓	

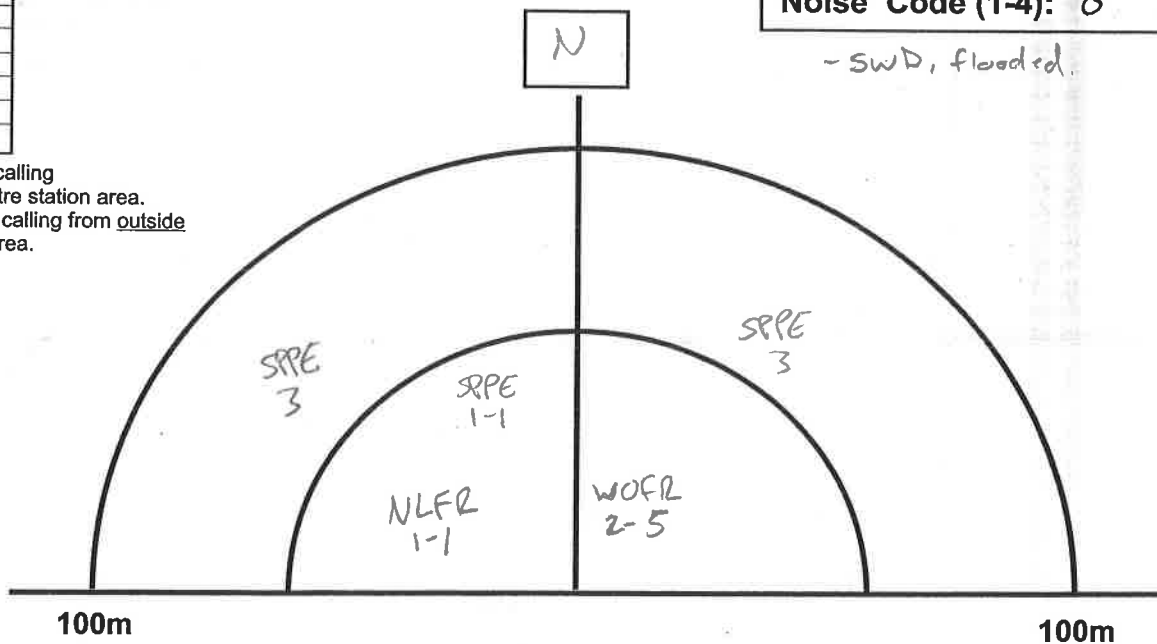
Station 13

Station Start
Time (24 hr): 22:09

Background
Noise Code (1-4): 0

- SWD, flooded.

N



* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).



VISIT INFORMATION

Sunset: 20:27; 5 min. sundays

Route #: SG ABH Route Name: Southgate Phase III Station (A - H): 15-27

Observer #: JWH Observer Name: Jonathan Harris

Visit #: 1 Day: 2 Month: May Year: 2014

Cloud Cover (10th): 100 Temperature (°C or °F): 9°C Beaufort Wind Scale (0-6): 1

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfrm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO	✓	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR	✓	

Station ~~15~~ 15

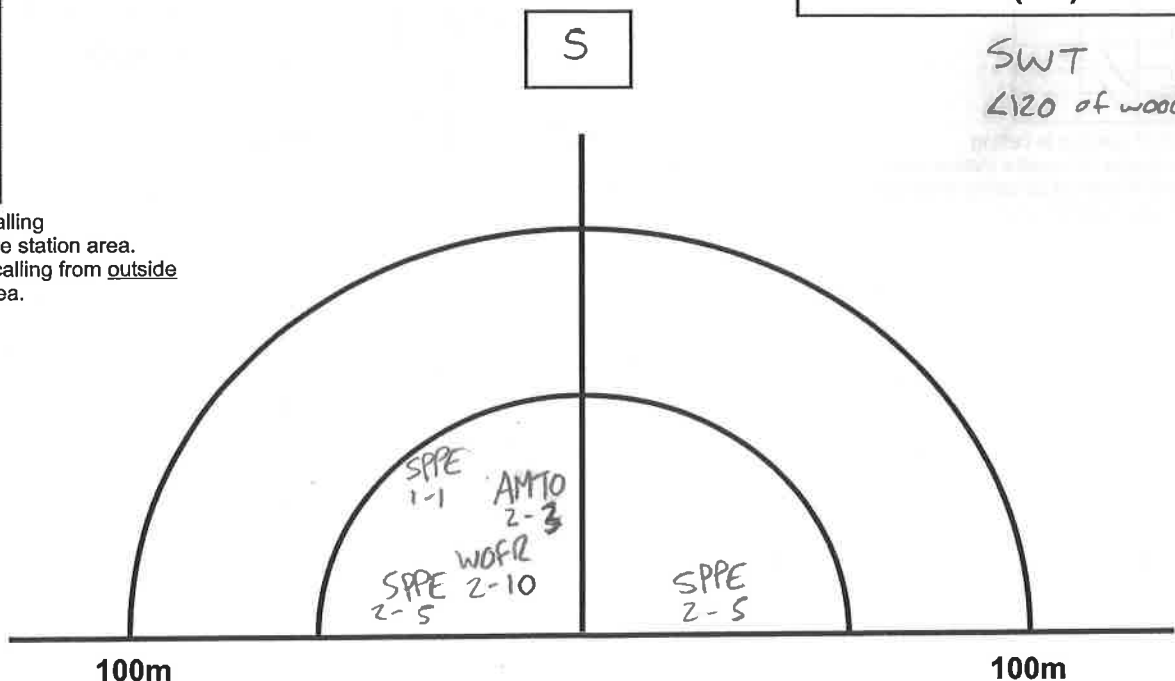
Station Start
Time (24 hr): 20:57

Background
Noise Code (1-4): 0

SWT
L120 of woodland.

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

soSP
duck sp.



1/7

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

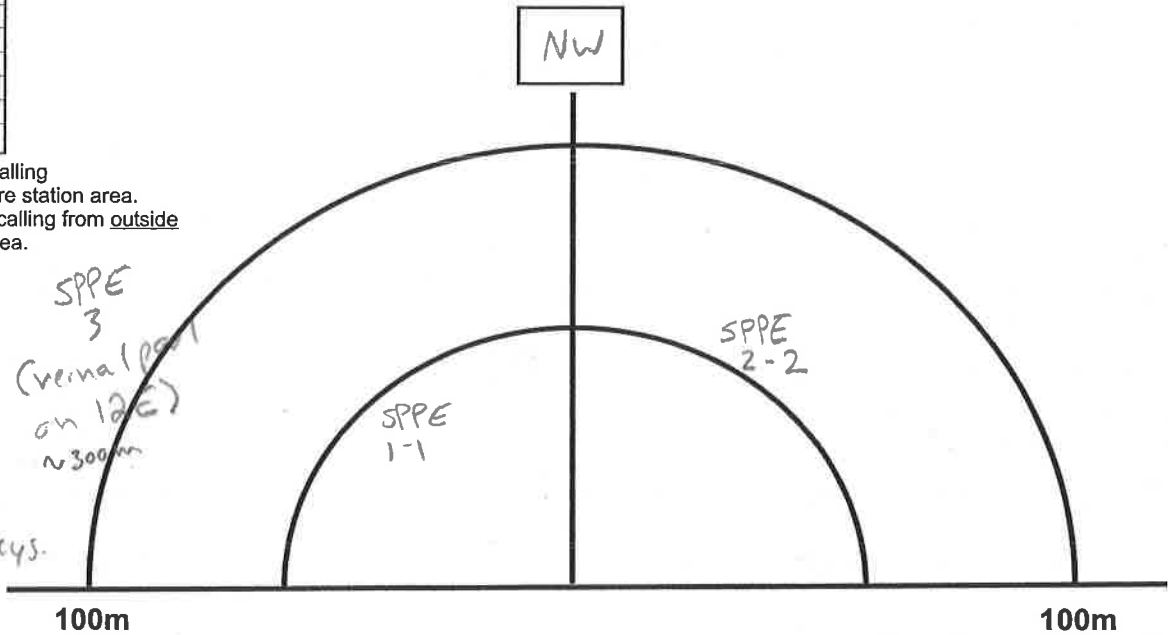
* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station Start
 Time (24 hr): 21:06

Background
 Noise Code (1-4): 1

- vernal pools in FOD

Station 16



Species	In*	Out**
AMTO	✓	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR	✓	
SPPE	✓	
WOFR	✓	

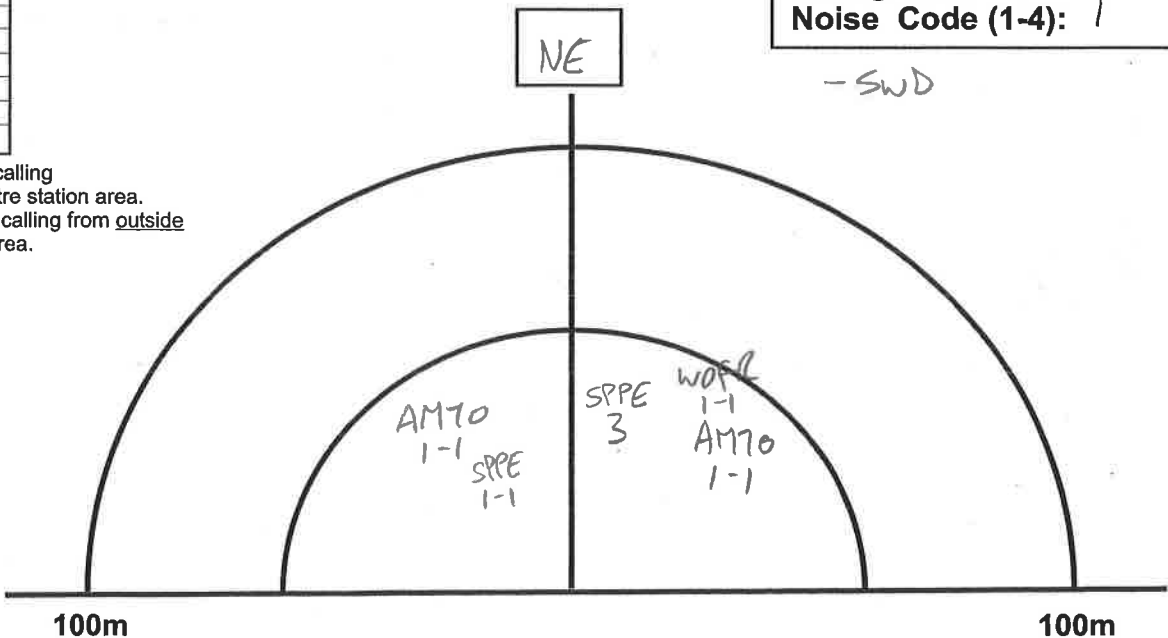
* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station Start
 Time (24 hr): 21:20

Background
 Noise Code (1-4): 1

- SWD

Station 17



Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR	✓	

* Check if species is calling from inside 100-metre station area.

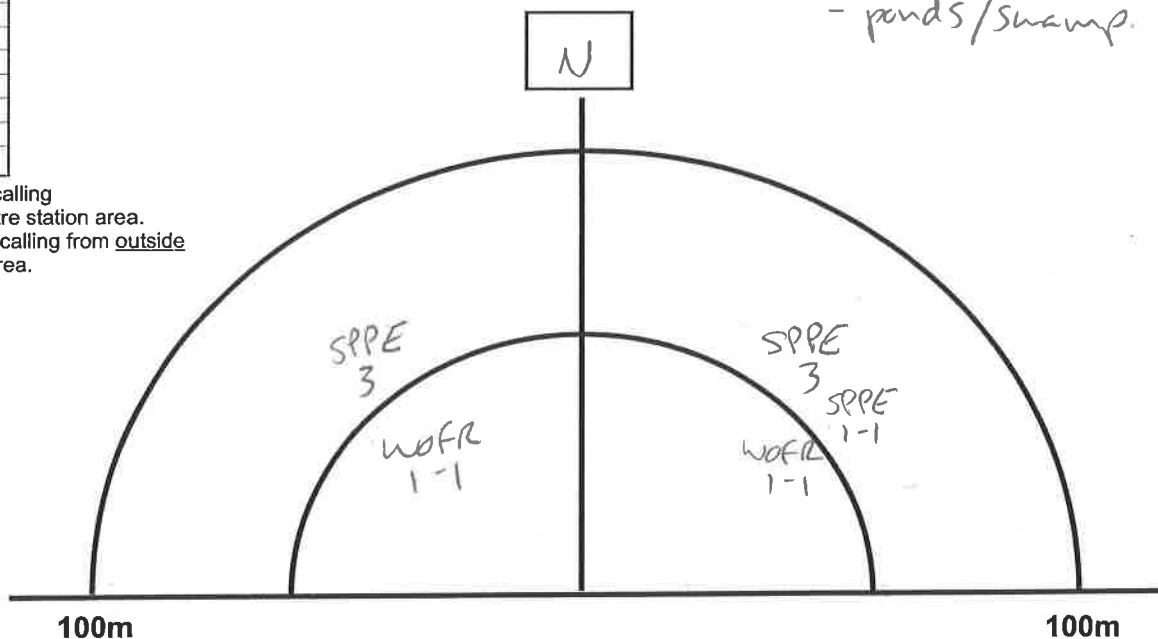
** Check if species is calling from outside 100-metre station area.

Station 18

Station Start
Time (24 hr): 21:42

Background
Noise Code (1-4): 0

w-2
- ponds/swamp.



Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

* Check if species is calling from inside 100-metre station area.

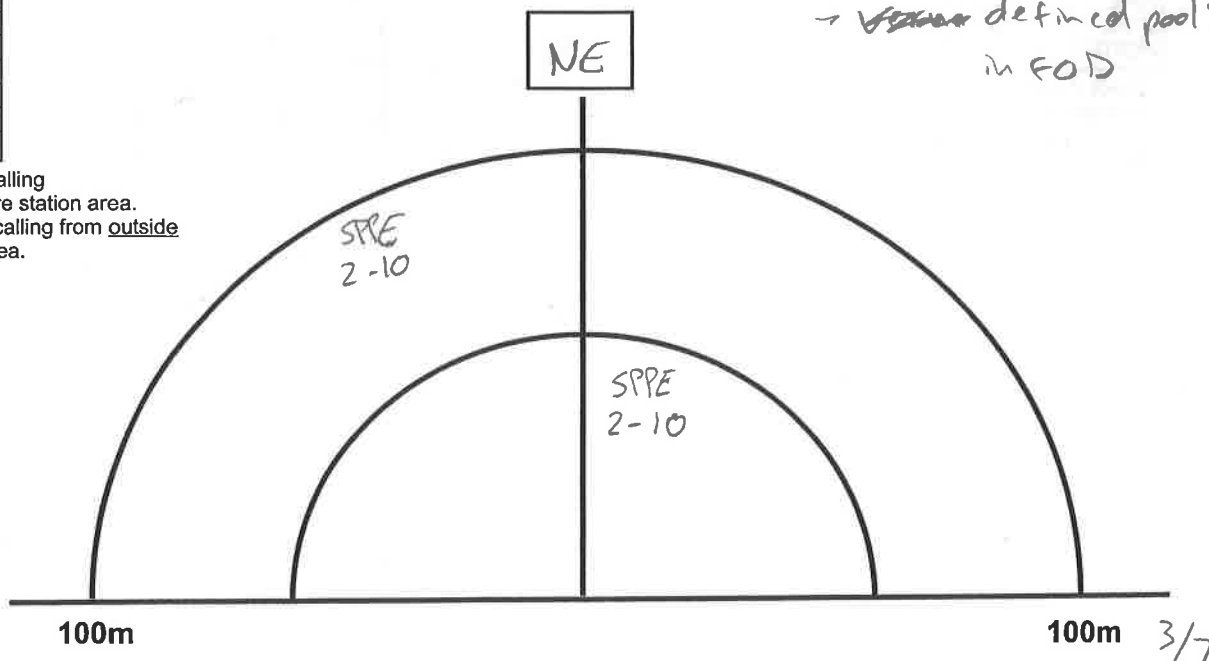
** Check if species is calling from outside 100-metre station area.

Station 19

Station Start
Time (24 hr): 21:51

Background
Noise Code (1-4): 40

w-2/3
→ ~~swamp~~ defined pools in FOD



Station Start
Time (24 hr): 21:59

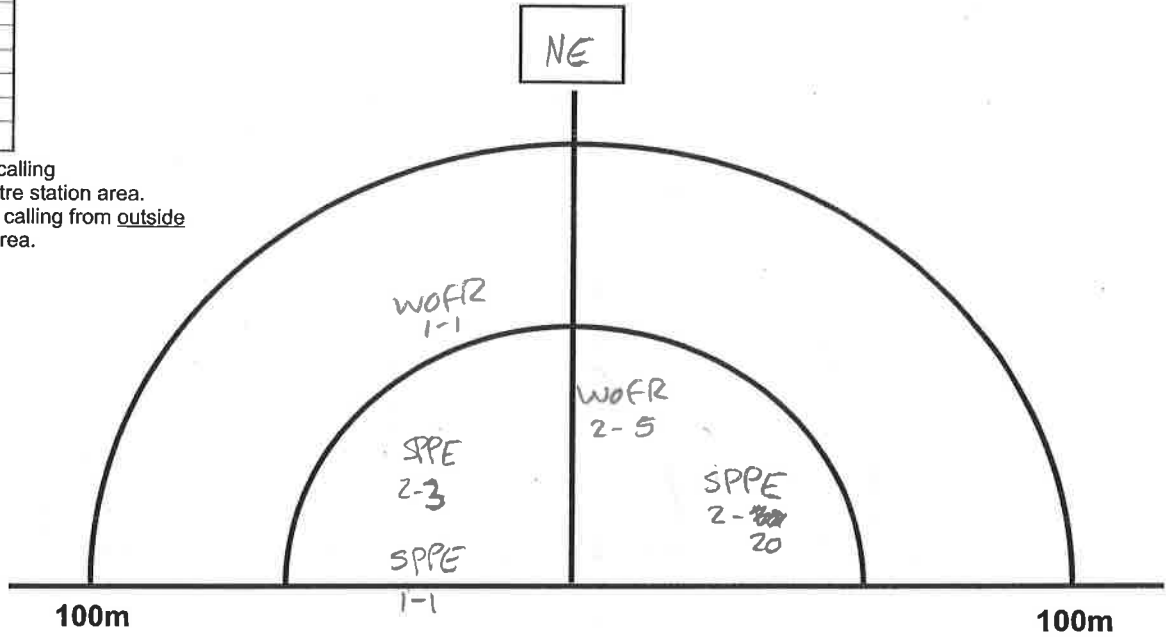
Background
Noise Code (1-4): 0

Station # 20

- defined pool in FOD

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR	✓	

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.



Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

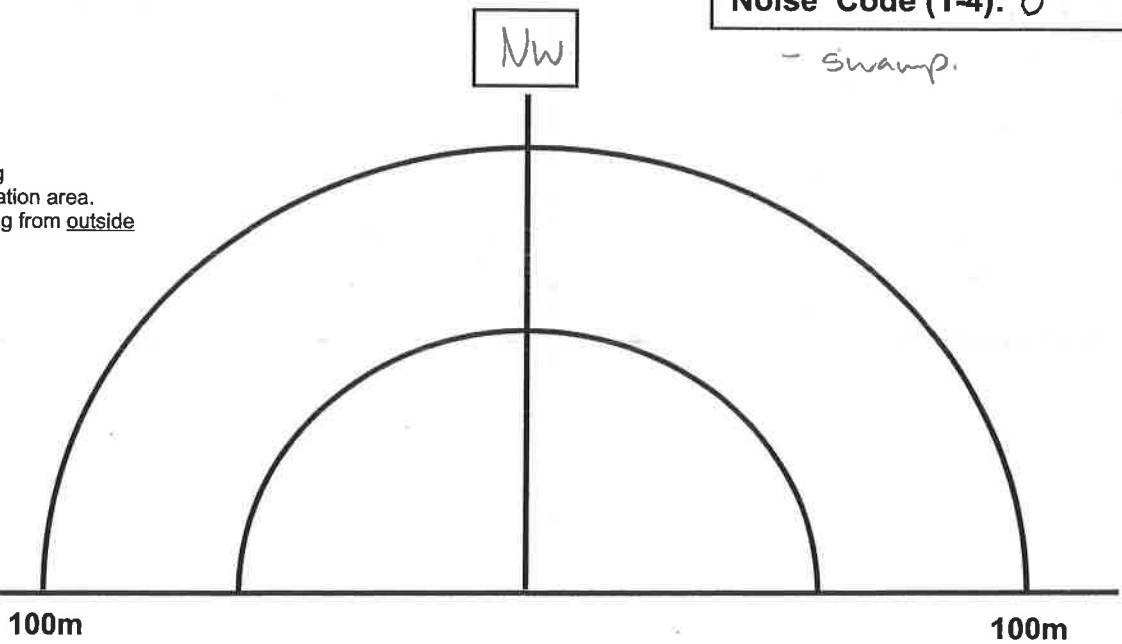
* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station # 21

Station Start
Time (24 hr): 22:11

Background
Noise Code (1-4): 0

- Swamp.



SPPE 3
 (A south of Grey rd. 9)

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

Station ~~26~~ 26

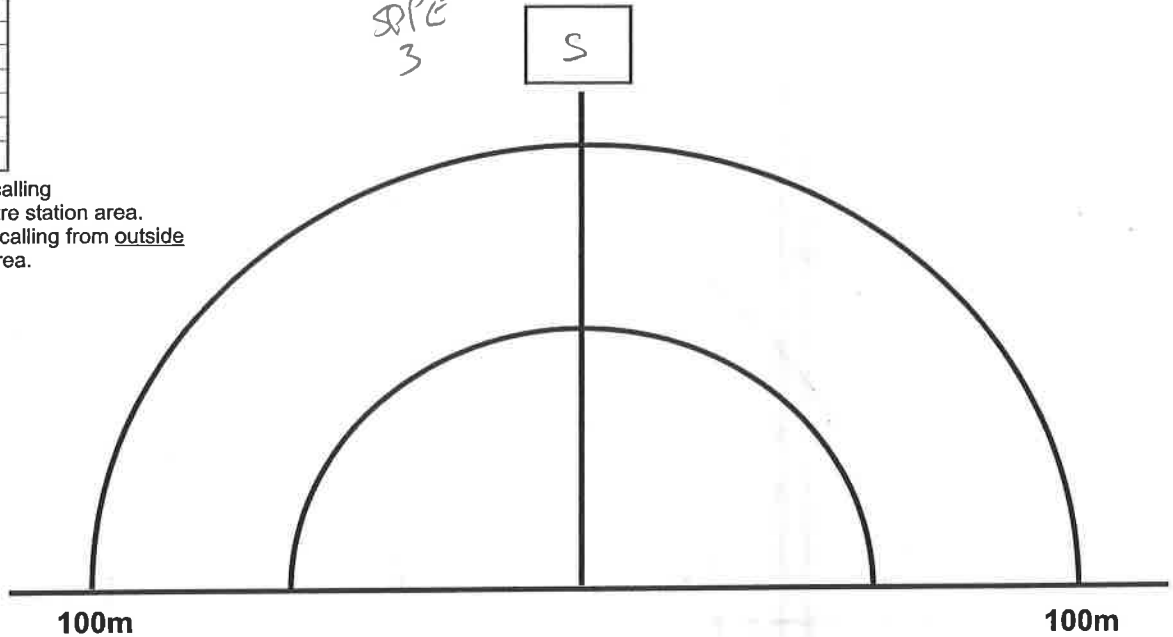
Station Start Time (24 hr): 22:58
Background Noise Code (1-4): 0

- Swamp

SPPE
3

S

SPPE
2-10



Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

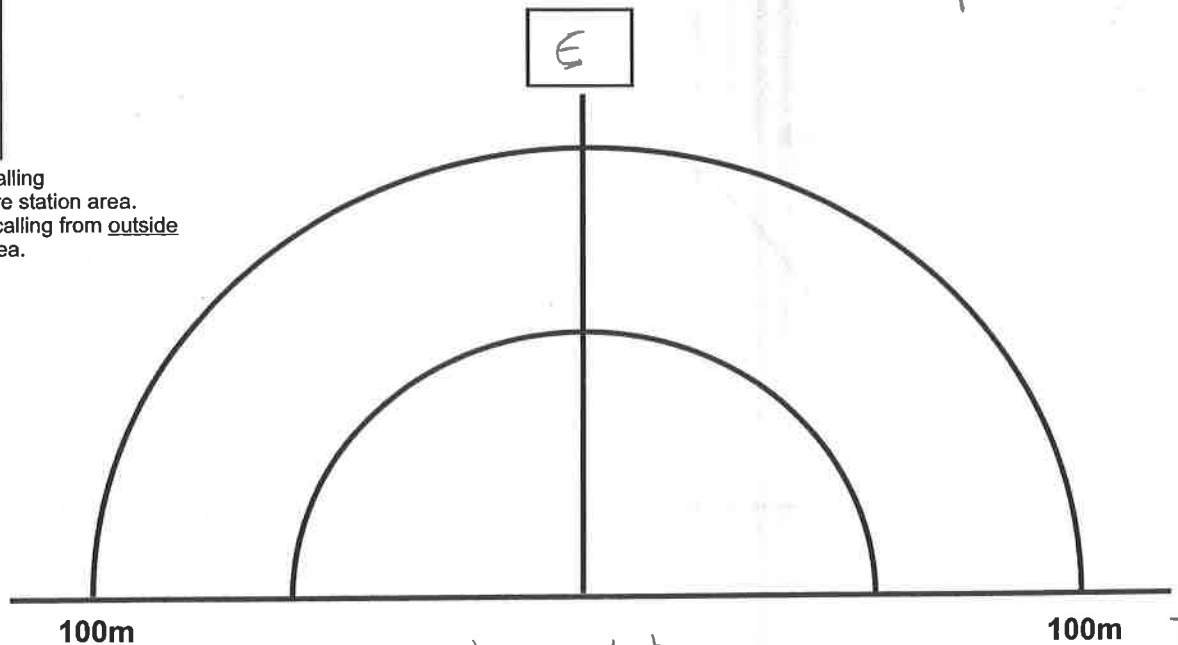
Station ~~27~~ 27

Station Start Time (24 hr): 22:05
Background Noise Code (1-4): 1

- Swamp

E

SPPE
2-10



no activity

7/7

1/7 JWH

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).



VISIT INFORMATION

Sunset - 20:55 5 min surveys.

Route #: Southgate Route Name: Southgate Station (A - H): _____

Observer #: JWH Observer Name: Jonathan Harris

Visit #: 2 Day: 28 Month: 05 Year: 2014

Cloud Cover (10th): 60 Temperature (°C or °F): 17 Beaufort Wind Scale (0-6): 1

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfrm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO	<input checked="" type="checkbox"/>	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		<input checked="" type="checkbox"/>
GRTR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
GRFR	<input checked="" type="checkbox"/>	
MIFR		
NLFR		
PIFR	<input checked="" type="checkbox"/>	
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.

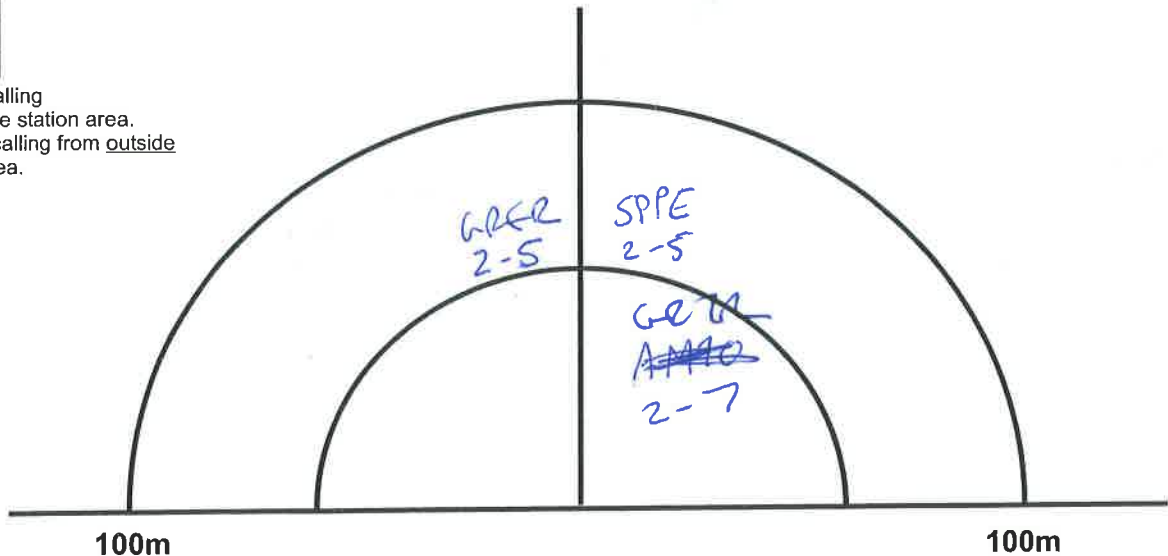
** Check if species is calling from outside 100-metre station area.

Station A
SG-ABH4

S

Station Start
Time (24 hr): 21:25

Background
Noise Code (1-4): 0



4/7 Jwlt

Species	In*	Out**
AMTO		<input checked="" type="checkbox"/>
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		<input checked="" type="checkbox"/>
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

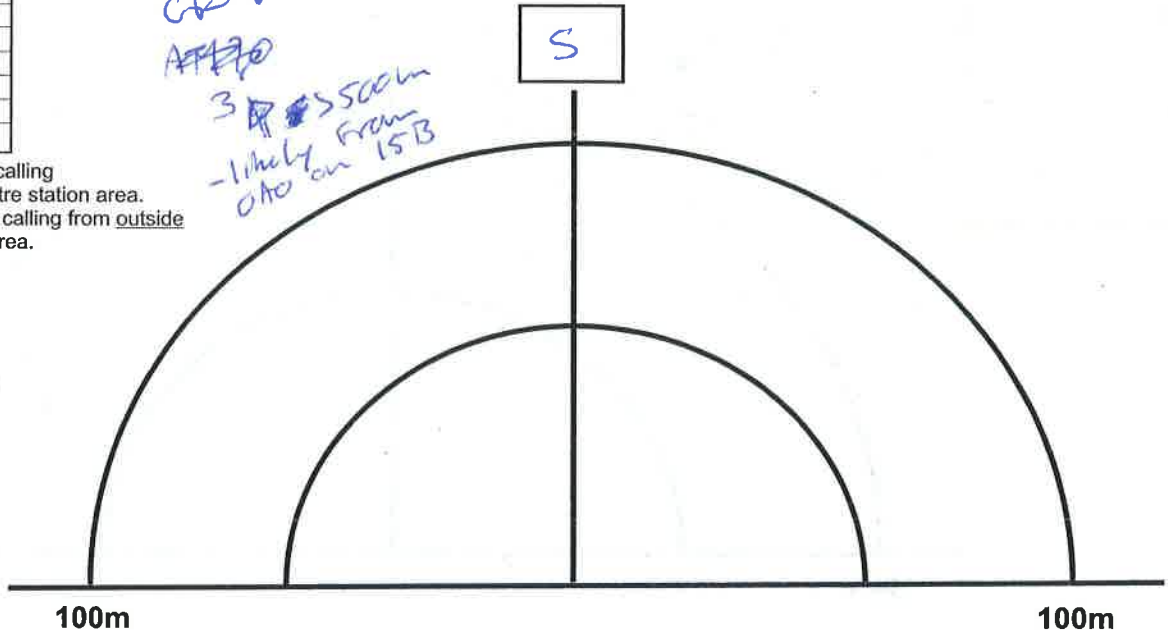
* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

GRTR
 3 ~~AP~~ 5500m
 - likely from
 Oho on 15B

Station Start
 Time (24 hr): 22:11

Background
 Noise Code (1-4): 0

Station F
 SG-ABH 11



Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

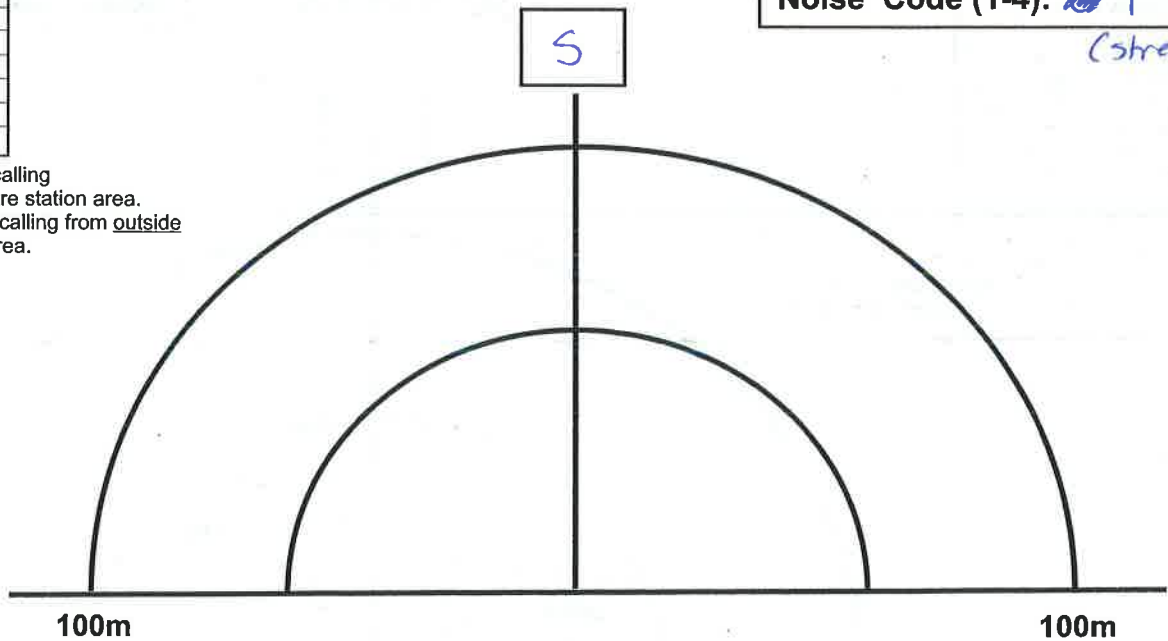
* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station G

Station Start
 Time (24 hr): 22:18

Background
 Noise Code (1-4): 1

(stream)



no activity

6/7 unit

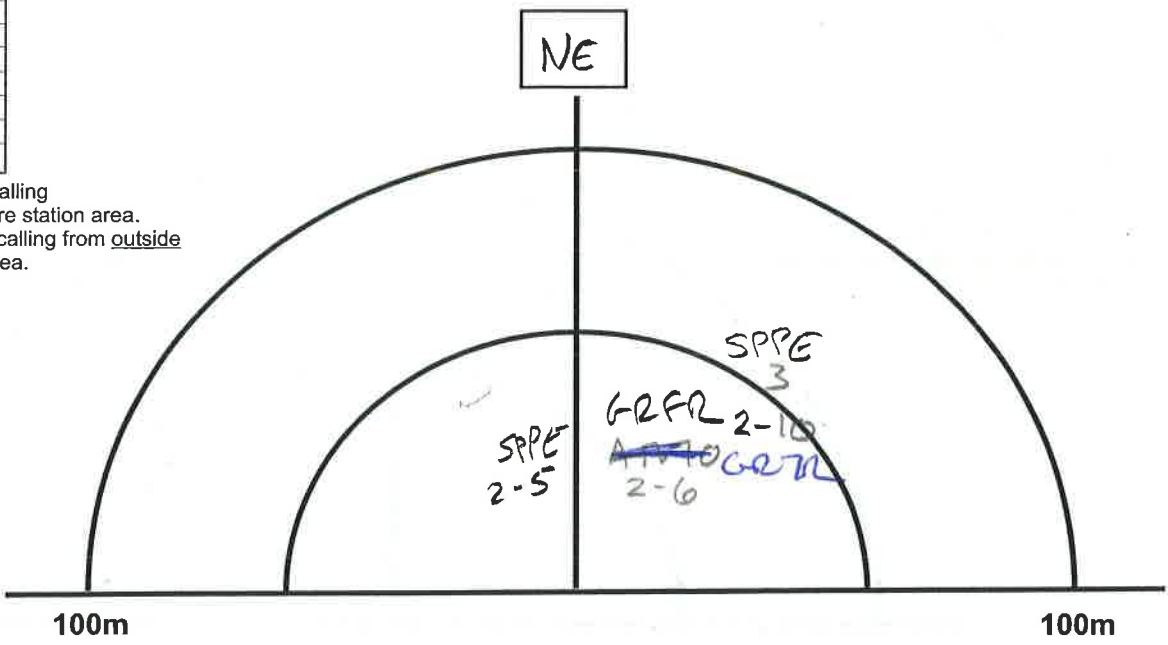
Station Start
Time (24 hr): 22:53

Background
Noise Code (1-4): 0

Species	In*	Out**
AMTO	✓	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

Station ~~18~~
SG ABH 19

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.



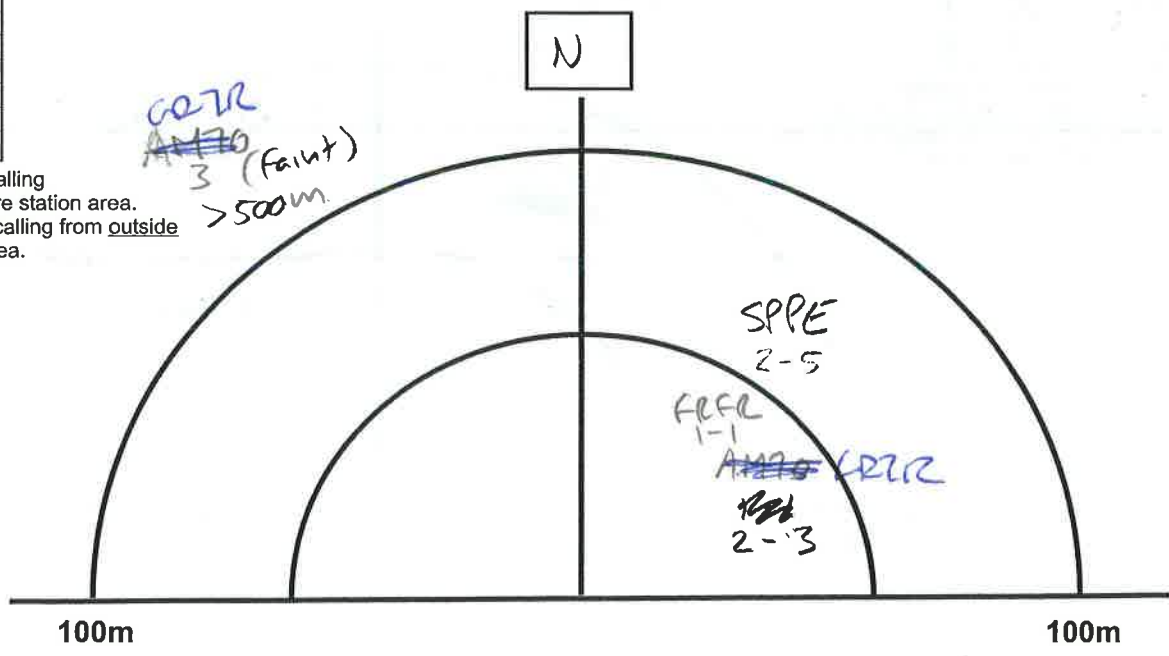
Station Start
Time (24 hr): 23:03

Background
Noise Code (1-4): 0

Species	In*	Out**
AMTO	✓	
BCFR		
BULL		
CHFR		
CGTR		
FOTO	✓	✓
GRTR	✓	
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

Station ~~19~~
SG ABH 18

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.



V/83 JWH

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).



VISIT INFORMATION

Sunset: 20:56 5 min surveys

Route #: SG Route Name: Sathgate Station (A - H): _____

Observer #: JWH Observer Name: Jonathan Harris

Visit #: 42 Day: 29 Month: 05 Year: 2014

Cloud Cover (10th): 10 Temperature (°C or °F): 16 Beaufort Wind Scale (0-6): 0

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

- Code 1: Calls not simultaneous, number of individuals can be accurately counted
- Code 2: Some calls simultaneous, number of individuals can be reliably estimated
- Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

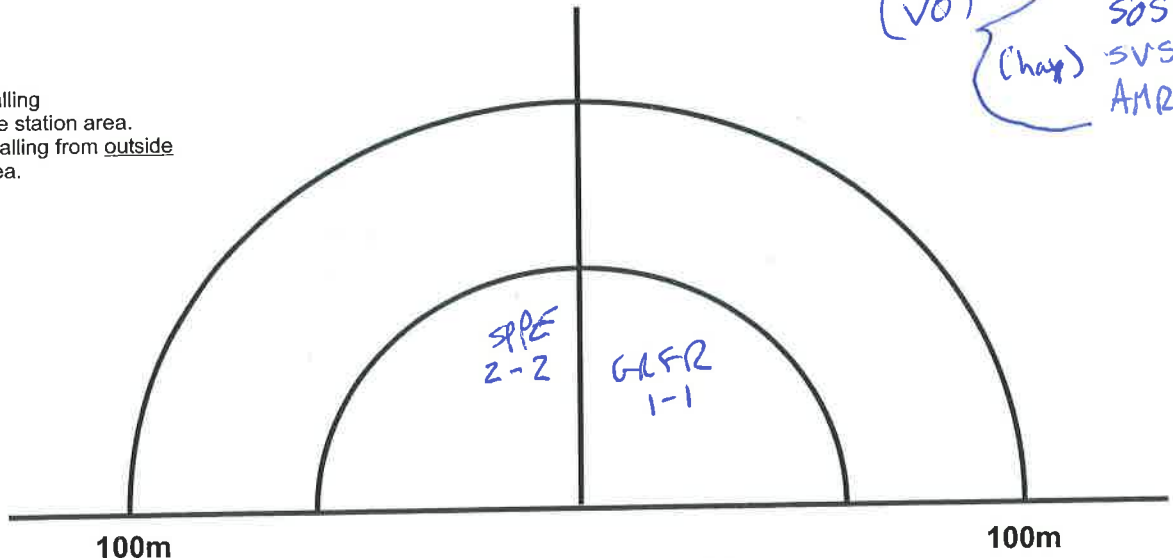
Station A
SG ABHIS

S

Station Start
Time (24 hr): 21:26

Background
Noise Code (1-4): 0

(VO) { GRCA
SOSP
(Chap) SVSP
AMRO



← GRTR (faint) 3 > 500m

2/3 JWH

May 29.14

Station Start

Time (24 hr): 21:37

Background

Noise Code (1-4): 0

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		✓
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

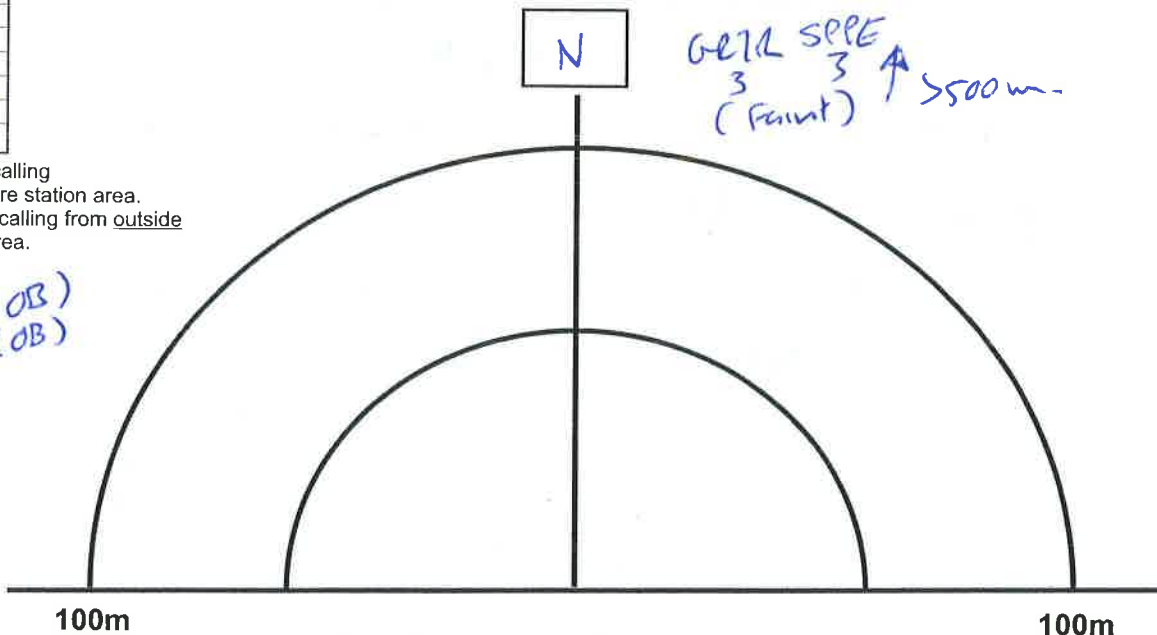
Station **B**
SG ABH 16

GRTR SPPE
3 3 ↑ 500m
(Faint)

* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

skunk (OB)
raccoon (OB)



Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR	✓	✓
SPPE	✓	✓
WOFR		

Station **C**
SG ABH 17

Station Start

Time (24 hr): 21:53

Background

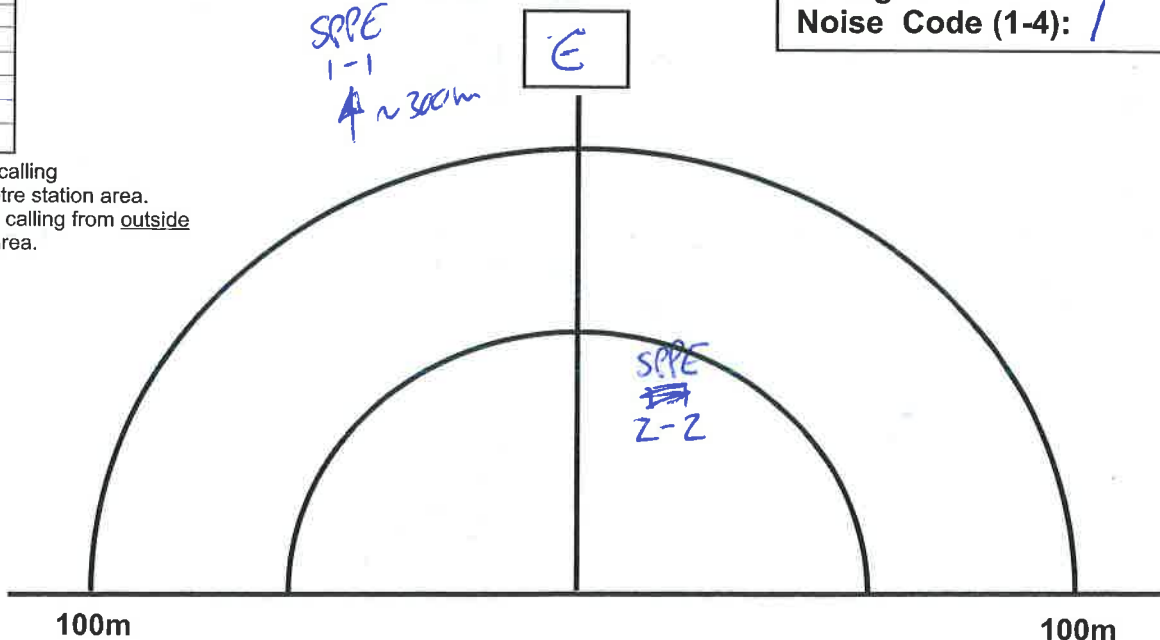
Noise Code (1-4): 1

* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

SPPE
1-1
↑ ~ 300m

SPPE
~~1-1~~
2-2



Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).

Southgate ASH 13



VISIT INFORMATION

Route #: _____ Route Name: _____ Station (A - H): _____

Observer #: _____ Observer Name: Trevor Goulet

Visit #: _____ Day: 28 Month: 05 Year: 2014

Cloud Cover (10th): 10% Temperature (°C or °F): 15°C Beaufort Wind Scale (0-6): 3

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfm2008.cdr, rev 02/2008

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR	✓	
FOTO		
GRTR		
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

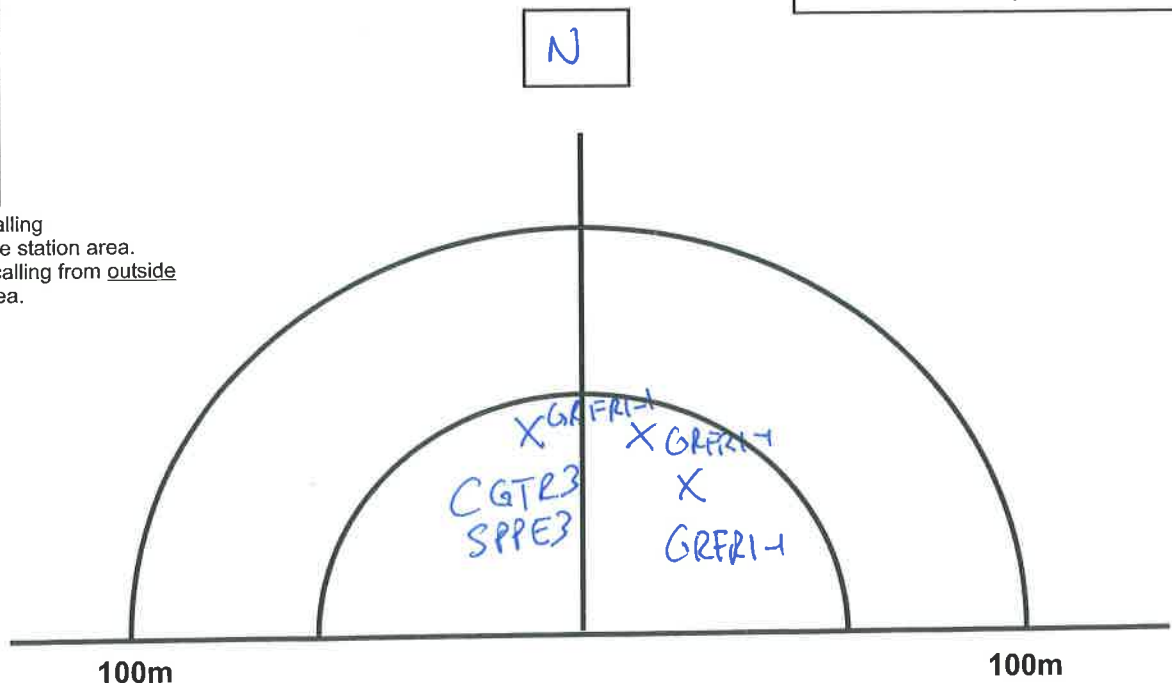
* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

Station ~~A~~ 13

Station Start Time (24 hr): 2255

Background Noise Code (1-4): 1



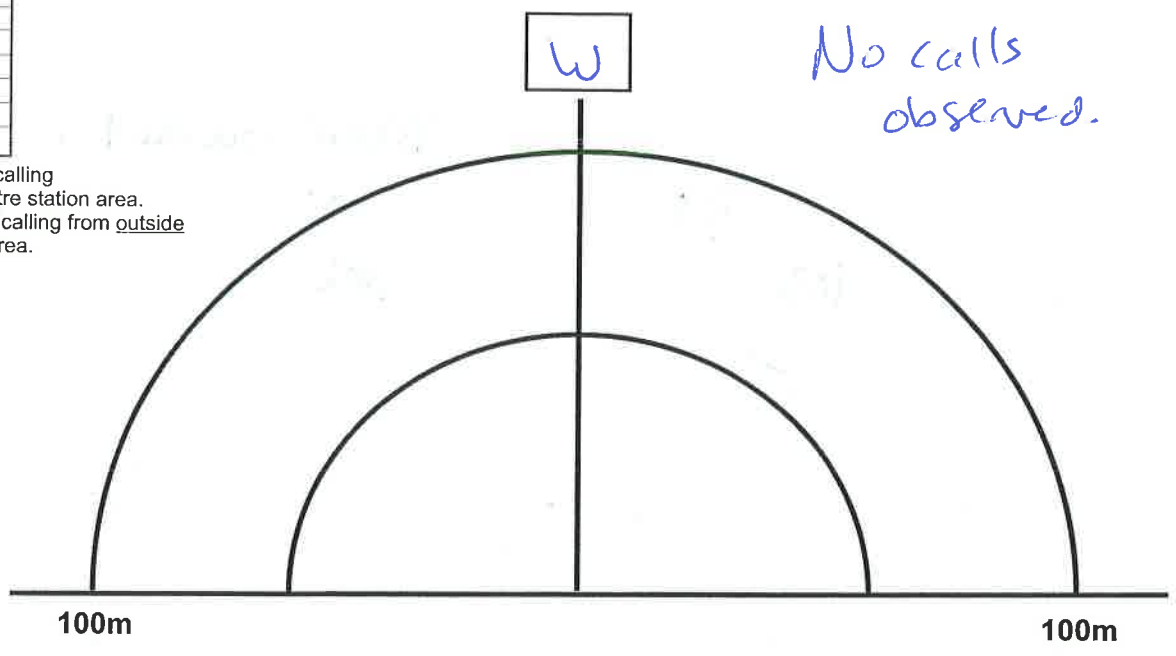
Station Start
Time (24 hr): 2315

Background
Noise Code (1-4): 1

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

Station B 27

No calls
observed.



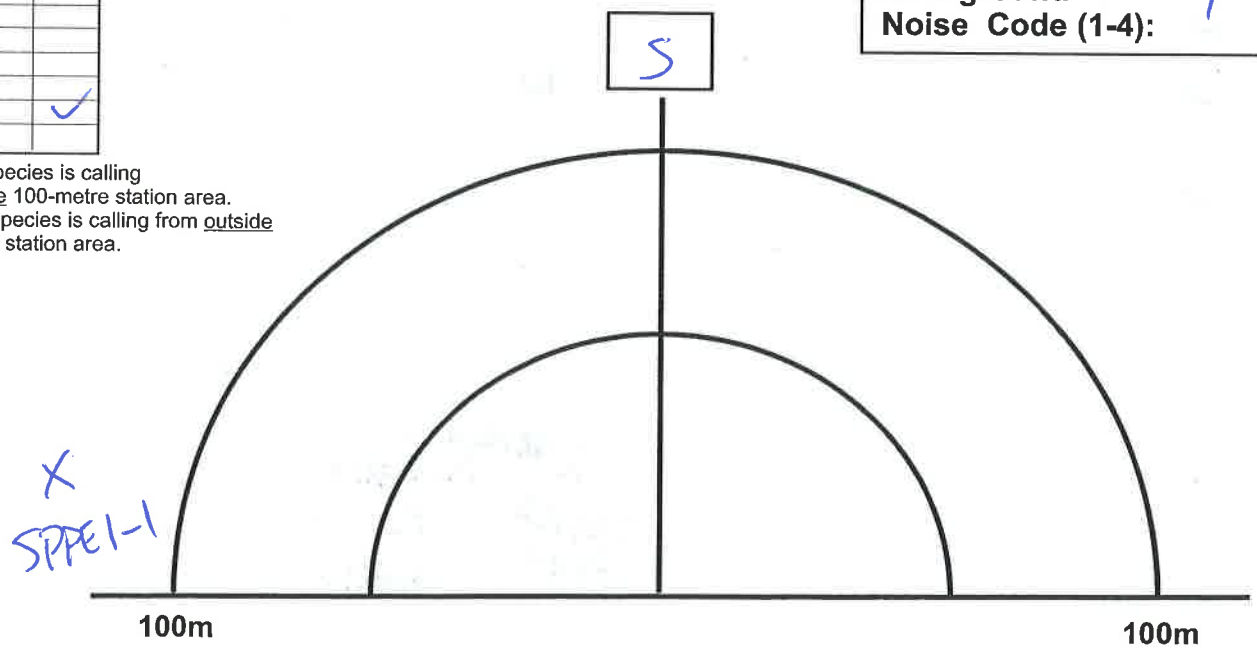
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

Station C 26

Station Start
Time (24 hr): 2325

Background
Noise Code (1-4): 1



* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Surveyor - Jonathan Harris May 29. 14

1/4
Sunrise: 05:45 JWH
May 29. 14

Point Count Survey: Field Data Sheet

Station No. 1 Visit No. 1 Start Time 0600 ~~0605~~ 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC1 0518761 4885052

Weather Conditions 6°C, CC=20%, W=1, no rain, heavy dew

RWBL •
WITU ••
BLJA •



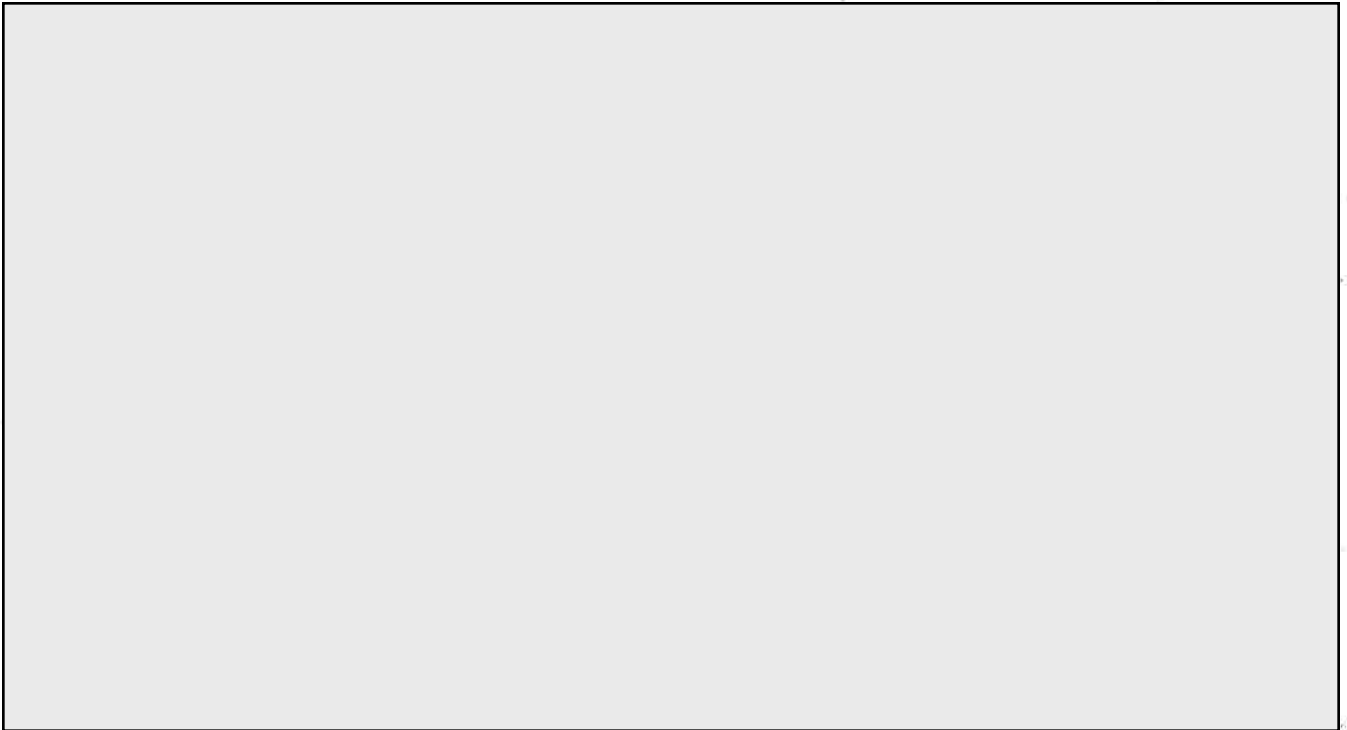
Alfalfa Field
70/30 grass/ferb.
litter layer made up
of grasses approx. 1-2cm
approx. height of veg.
is 0.5m.
- alfalfa A
- taro off A
- orchard grass. 0

s of Area Search

Station No. 2 Visit No. 1 Start Time 0614 5 min 10 min (circle)
UTM or Waypoint 0518768 4885074 - SG BOBO PC2

Weather Conditions _____ PICS - 15 to 18

SOSP •



2/4 JWH
May 28.14

Point Count Survey: Field Data Sheet

Station No. PC6 Visit No. 1 Start Time 0746 5 min 10 min (circle)
UTM or Waypoint 0520588 4884420 SG B080 PC6

Weather Conditions

~~SG B080 PC7 0520784 4884420~~

PICS - 31 - 34.

hayfield

- 70/30 grass to forb
- orchard grass A
- taraxacum 0
- clover 0
- height - 0.5 to 0.7 m
- litter layer is ~ 1-2cm

CWBL 96
kill
COYE
YCWNA



Notes, Results of Area Search

Station No. PC7 Visit No. 1 Start Time 0758 5 min 10 min (circle)
UTM or Waypoint SG B080 PC6 0520784 4884452

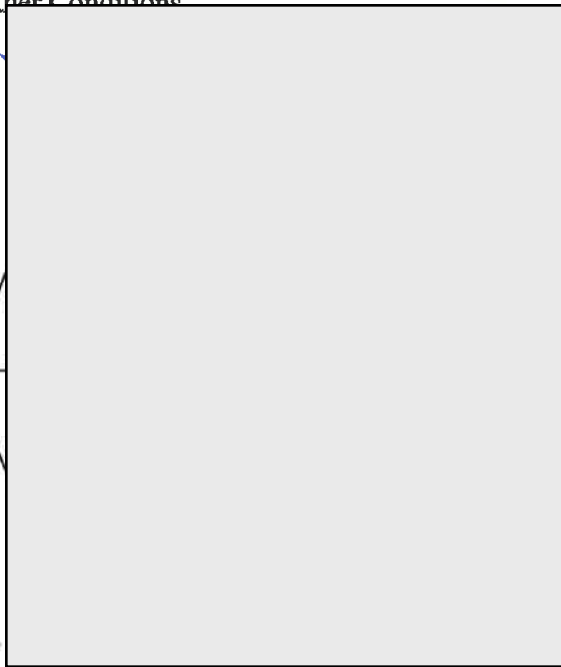
Weather Conditions

PICS - 35 to 38

horse pasture
- heavily grazed at
back

- 80/20 grass to forb
- minimal litter layer

* ~~SA~~
SUSP
Brown thrasher
+ EAKI
MODO
WITU
BAOR
SNIP



Habitat Notes, Results of Area Search

- veg. height ~ 0.2 to 0.4 m
- banyard grass
- TARAXACUM
- orchard grass.

3/4
JWH
May. 28.14

Point Count Survey: Field Data Sheet

Station No. PC8 Visit No. 1 Start Time 0816 5 min (10 min) (circle)

UTM or Waypoint SG BOBO PC8 0520443 4884217 PICS - 39-42.

Weather Conditions _____

shipe.
* GAWL
AWBL
HOFL
Grack/c

hay field/pasture.
80/20 grass to forb.
- clover (0)
- TARAOFF (0)
- orchard grass (A)
litter layer.

Habitat Notes, Results of Area Search

Station No. PC9 Visit No. 1 Start Time 0833 5 min (10 min) (circle)

UTM or Waypoint SG BOBO PC9 0520345 4884526

Weather Conditions - PC staggered a bit to avoid ponds & MAM.

PICS - 43-46

RWBL
SOSP

hay field.
80/20 grass to forb.
~ 0.5 to 0.7 m high.
- orchard grass (A)
- TARAOFF (0)
- clover (0)
Litter layer ~ 1-2 cm

May 29. 14

4/4
JWH

Point Count Survey: Field Data Sheet

Station No. PC10 Visit No. 1 Start Time 0848 5 min 10 min (circle)

UTM or Waypoint SG 8080 PC10 0520303 4884770

Weather Conditions End: 13°C, 30% CC, w=1/2, no rain

hay field

70/30 grass/farb.

height ~ 0.5m

- alfalfa (O)
- TARAOFF (O)
- orchard grass (A)

RWBL
AMCR



Observation Notes, Results of Area Search

1/8

JWH

May 30. 14

Station No. PC11 Visit No. 1 Start Time 0545 5 min 10 min (circle)

UTM or Waypoint SG 8080 PC11 0520417 4883017

PICS - 46 to 49

Weather Conditions 7°C, 20% CC, w=0, no rain, heavy dew

hayfield comprised of 80% grass: 20% farb.

- ✓ Alfalfa (A)
- orchard grass (D)
- TARAOFF (O)

Litter layer present ~ 1-2 cm deep

veg height ~ 0.5 to 0.7m

INBU
SVSP *
SOSP
Grackle



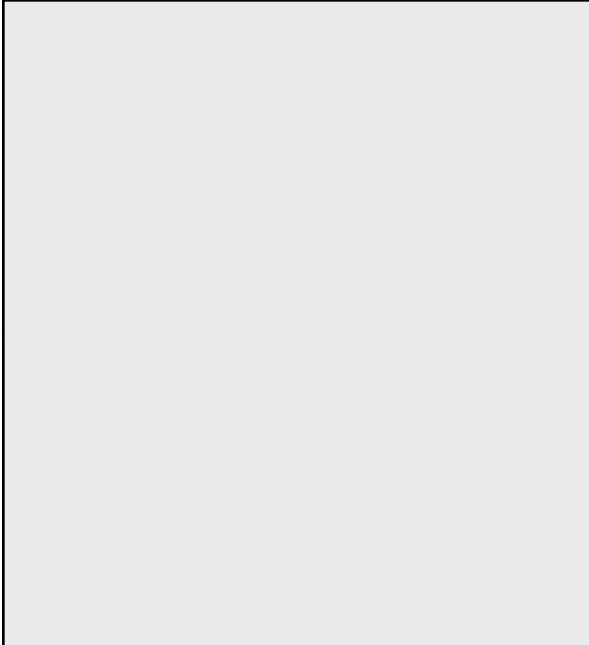
2 3/8 JWH

Point Count Survey: Field Data Sheet

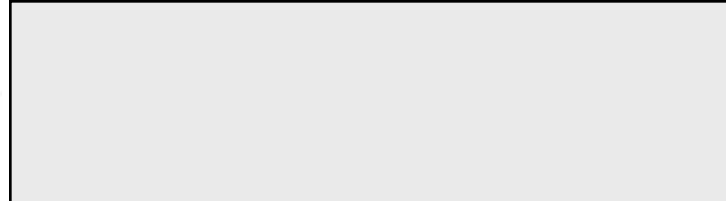
Station No. PC 12 Visit No. 1 Start Time 0600 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC 12 0520396 4883453

Weather Conditions PICS - S0 to S3

RWBL



Hayfield
90% forb to 10% grass
TARAOFF (D) clover (R)
Alfalfa (A)
POAPRAT (O)
Litter layer minimal to absent
veg height ~ 0.5m



Habitat Notes, Results of Area Search

Station No. PC 13 Visit No. 1 Start Time 0615 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC 13 0520605 4883328

Weather Conditions PICS - S4 to S7

WITU
SVSP



Hayfield
80% grass to 20% forb
POAPRAT (A)
Alfalfa (O)
TARAOFF (R)
Litter layer present
~ 1cm
veg height ~ 0.5m

Habitat Notes, Results of Area Search

3/8
JWB

Point Count Survey: Field Data Sheet

Station No. PC14 Visit No. 1 Start Time 0628 5 min (10 min) (circle)
UTM or Waypoint SG BOBO PC14 0520534 4883569

Weather Conditions Pics - 58 to 61

COYE
FISP
SOSP
BLJA



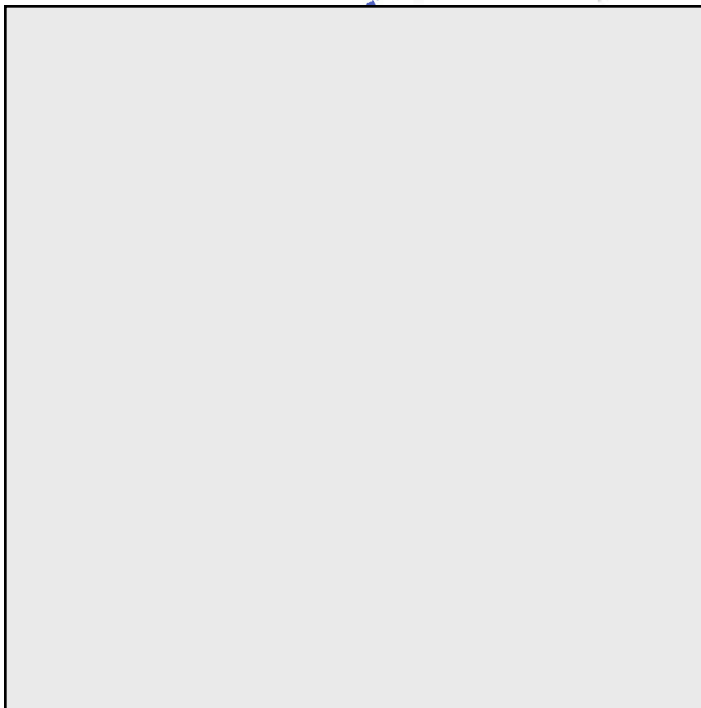
* same habitat conditions as PC13



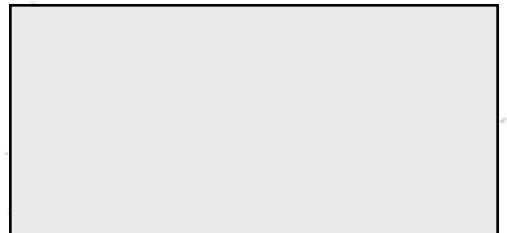
Station No. PC15 Visit No. 1 Start Time 0641 5 min (10 min) (circle)
UTM or Waypoint SG BOBO PC15 0520477 4883810

Weather Conditions Pics: 62-65

RWBL



* same habitat conditions as PC13/14.



at Notes, Results of Area Search

Point Count Survey: Field Data Sheet

Station No. PC16 Visit No. 1 Start Time 0701 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC16 0521438 4884264

Weather Conditions PICS - 66-69



Grackle
RODO
TRES
MODO
BLJA
WILL
AMRO

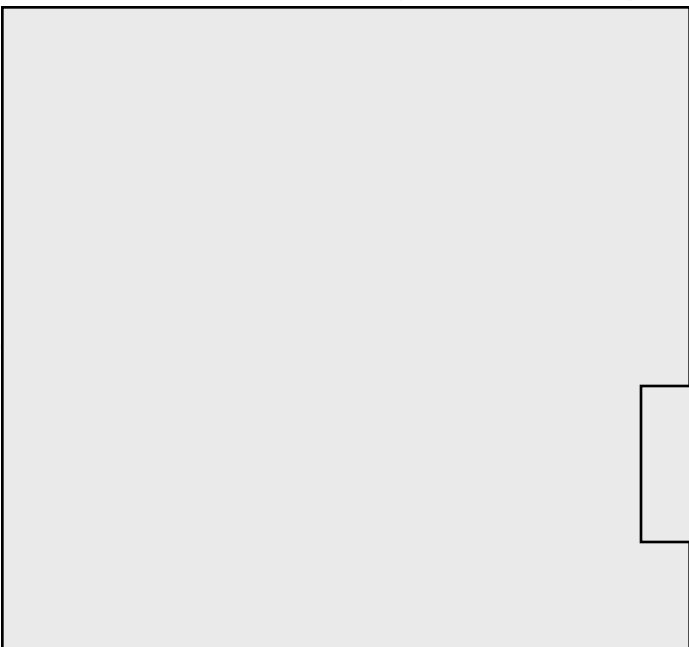
Hay field.
60% forb to 40% grass
Alfalfa (0)
TARAOFF (0)
orchard grass (0)
Litter layer present
~ 2cm
veg height ~ 0.3 to 0.5m



Notes, Results of Area Search

Station No. PC17 Visit No. 1 Start Time 0722 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC17 0521377 4884651

Weather Conditions PICS - 70 to 73



Active Pasture.
(cattle)
90% forb to 10% grass.
clover (A)
TARAOFF (A)
Grass sp. (R)
Litter layer minimal
veg height
~ 10cm



Habitat Notes, Results of Area Search

* PC17 is >250m from PC16 because the lower half of pasture is more heavily grazed (closer to barn)

Point Count Survey: Field Data Sheet

Station No. PC18 Visit No. 1 Start Time 0736 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC18 0521449 4884838

Weather Conditions Pics:

hay field

AMGO
SVSP *
SOSP *



west - alfalfa - 90% forbs
10% grass.

east - dandelion - 95% forbs
5% grass.

both fields lack a
litter layer.

- veg. height ~ 0.10 to 0.30 m

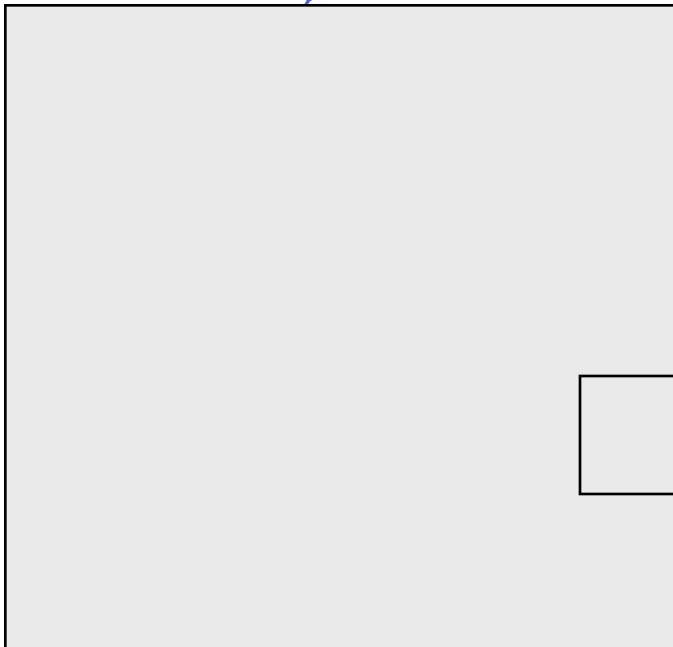
abitat Notes, Results of Area Search

Station No. PC19 Visit No. 1 Start Time 0750 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC19 0521577 4884588

Weather Conditions Pics: 74 to 77

hay field.

SVSP *



50/50 grass/forbs.

Alfalfa (0)
orchard grass (0)
TARROGE (12)

- litter layer absent.

- veg. height ~ 0.3m



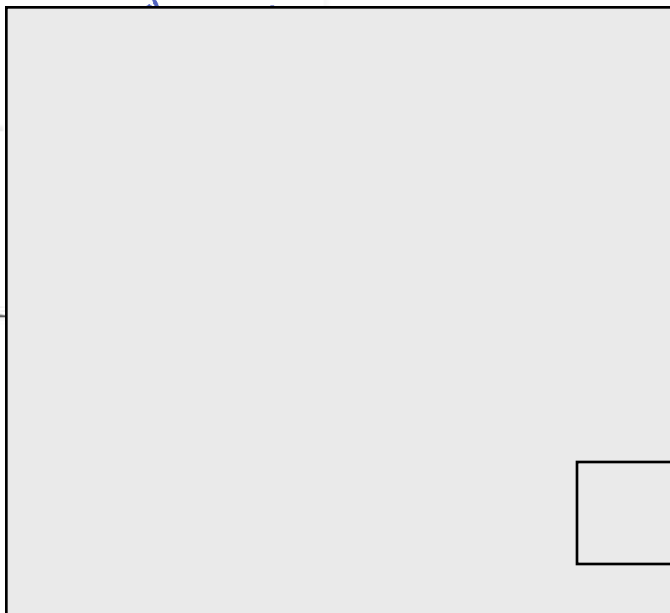
abitat Notes, Results of Area Search

Point Count Survey: Field Data Sheet

Station No. PC20 Visit No. 1 Start Time 0809 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC20 0521689 4883744

Weather Conditions _____

AMRO
DEWCC
RWBL
FLSP *



hay field

90/10 grass/forb

- burnyard grass (A)
- taro off (R)
- alfalfa (O)
- grass sp. (A)

LMR layer present

~ 2-3cm

veg. height = 0.10 to 0.3m

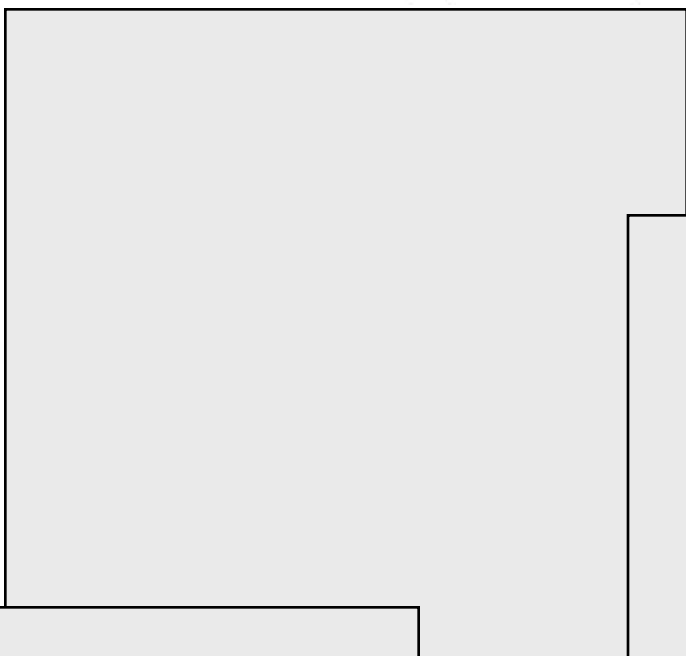


Notes, Results of Area Search

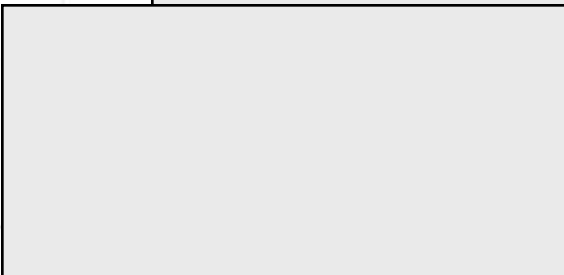
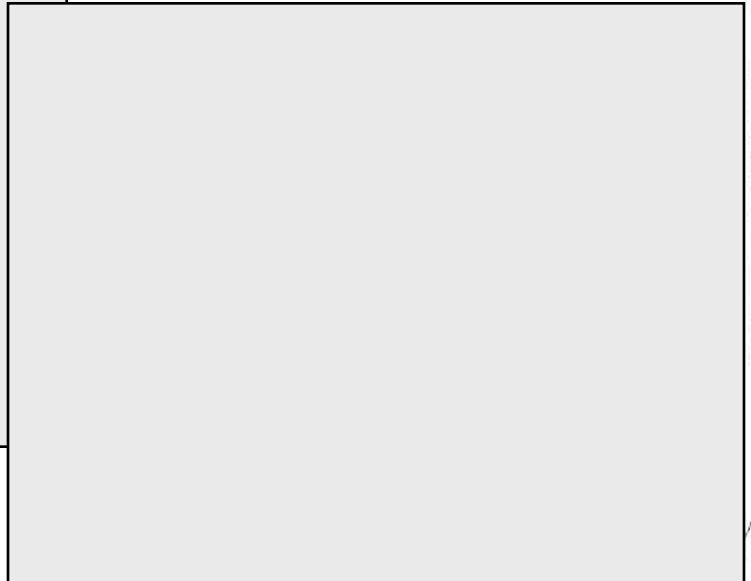
Station No. PC21 Visit No. 1 Start Time 0821 5 min 10 min (circle)
UTM or Waypoint SG DOBO PC21

Weather Conditions Pics: 78 to 81

snack
RWBL
BLJA
NOFI



x habitat conditions
same as PC20

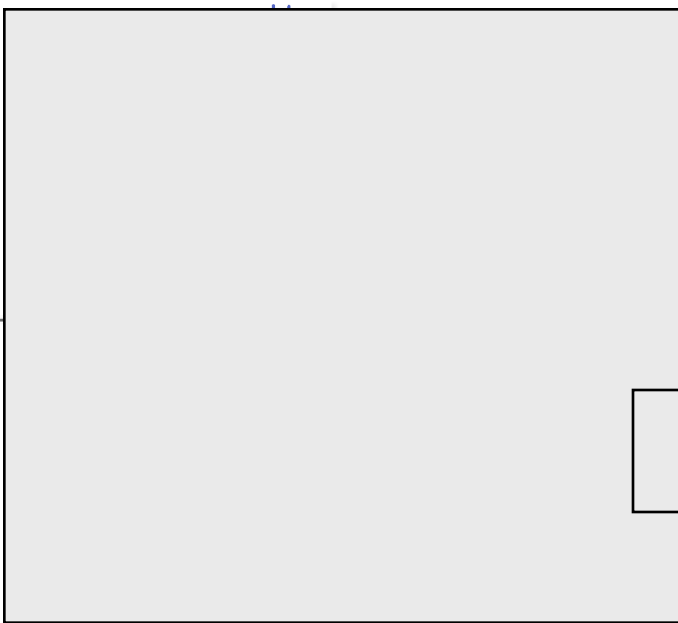


Point Count Survey: Field Data Sheet

Station No. PC 22 Visit No. 1 Start Time 0834 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC22 0521580 4883525

Weather Conditions P.Z.S: 82 to 85

BLJA
SAV SP *



hay field
80% fwb, 20% grass.
Alfalfa - D
grass sp. ●
turnoff - R
Litter layer absent.
veg height ~ 0.4m

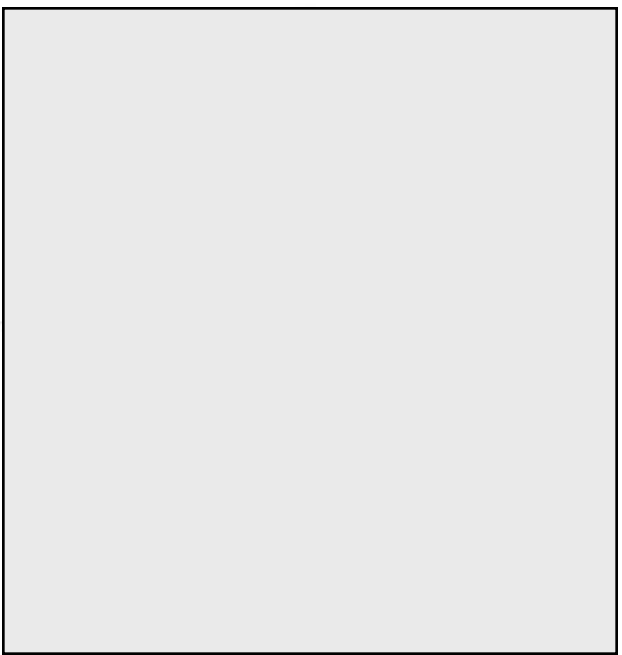


Notes, Results of Area Search

Station No. PC 23 Visit No. 1 Start Time 0851 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC23 0521493 4884051

Weather Conditions Pics: 86 to 89

SOSP



hay field.
90% fwb to 10% grass.
Alfalfa (D)
variegated grass (O)
turnoff (R)



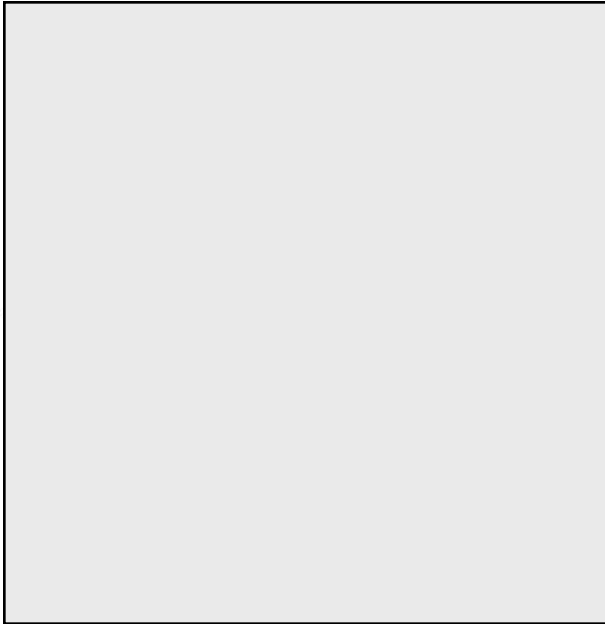
2/2 JWH

Point Count Survey: Field Data Sheet

Station No. PC5 Visit No. 2 Start Time 0619 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC5

Weather Conditions _____

SUSP *
AMCR
TLGS
BCHH
Harrier *
SOSP

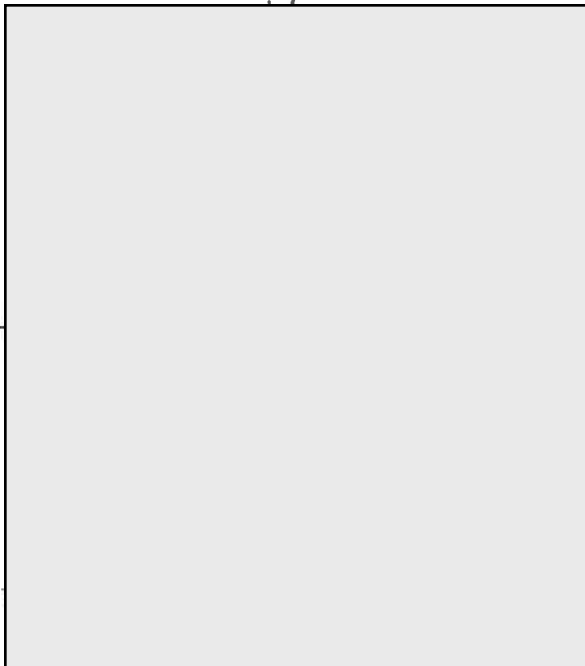


Habitat Notes, Results of Area Search

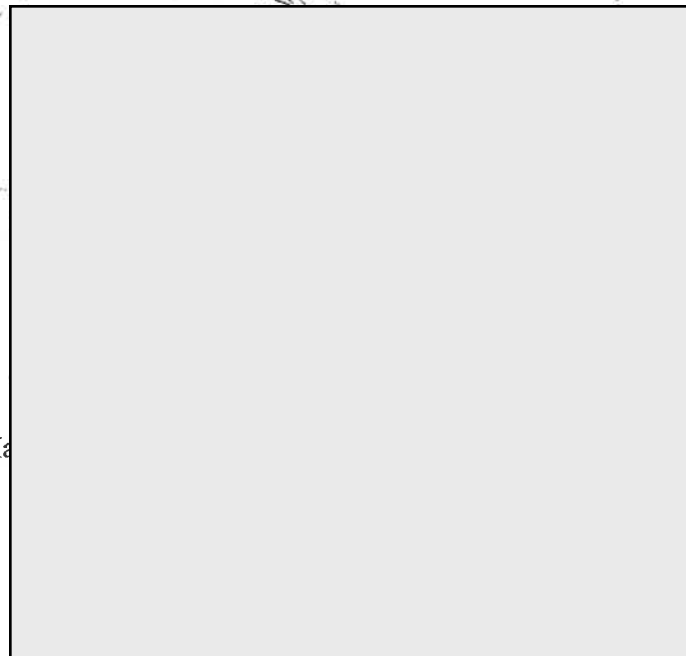
Station No. PC8 Visit No. 2 Start Time 0640 5 min 10 min (circle)
UTM or Waypoint SG BOBO PC8

Weather Conditions _____

RWBL



* cattle moved into pasture



Ha

3/2 JWH

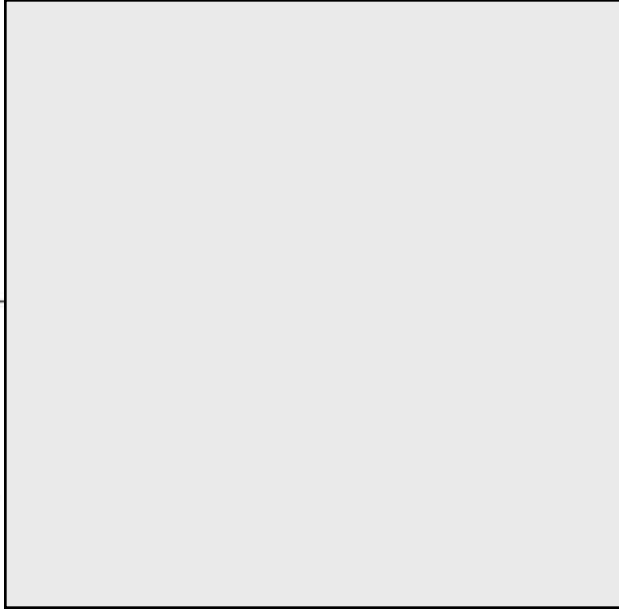
Point Count Survey: Field Data Sheet

Station No. PC20 Visit No. 2 Start Time 0700 5 min 10 min (circle)

UTM or Waypoint SG BOBO PC20

Weather Conditions _____

SVSP
AM20
RWDL
~~CHSP~~ *
CHSP
AM60
INBU



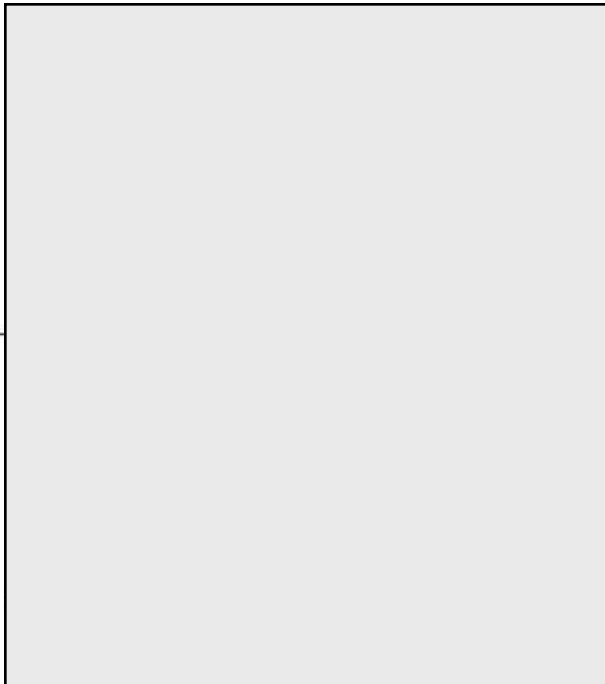
Habitat Notes, Results of Area Search

Station No. PC21 Visit No. 2 Start Time 0714 5 min 10 min (circle)

UTM or Waypoint SG BOBO PC21

Weather Conditions _____

AM20
KEVI



Habitat Notes, Results of Area Search

4/7 JWH

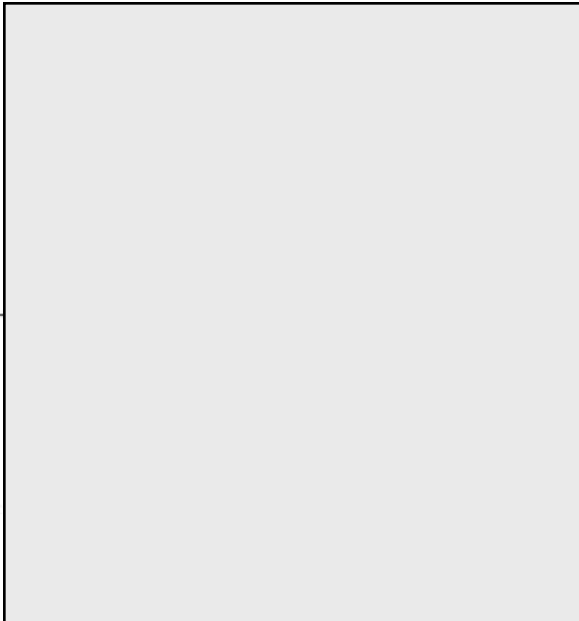
Point Count Survey: Field Data Sheet

Station No. PC 22 Visit No. 2 Start Time 0727 5 min 10 min (circle)

UTM or Waypoint _____

Weather Conditions _____

~~SVP~~
SVSP *
FISP +



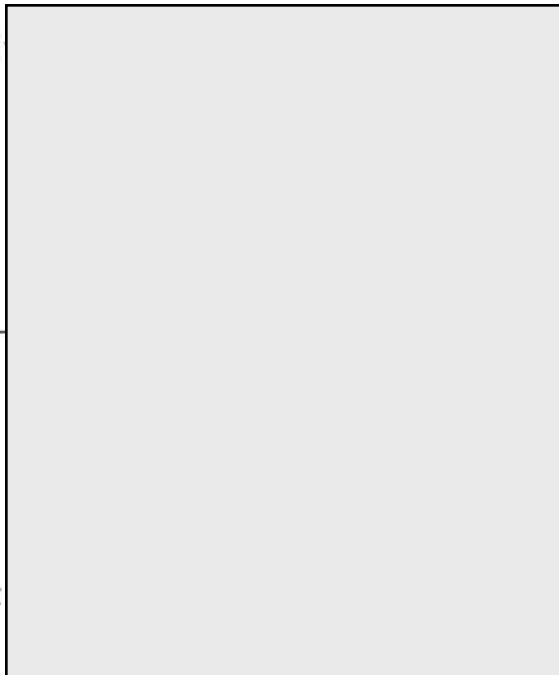
Habitat Notes, Results of Area Search

Station No. PC 23 Visit No. 2 Start Time 0743 5 min 10 min (circle)

UTM or Waypoint SW Bobo PC 23

Weather Conditions _____

AMRO
HOE1
CHSP



Habitat Notes, Results of Area Search

5/7 JWH

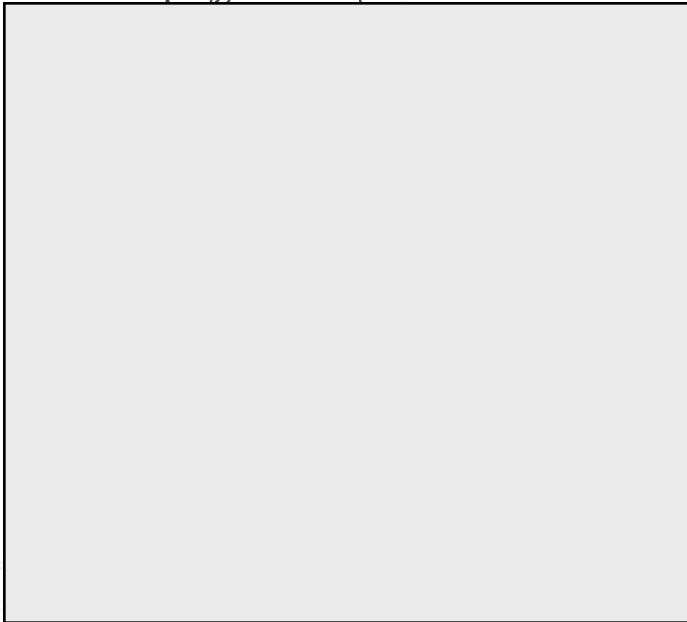
Point Count Survey: Field Data Sheet

Station No. PC24 Visit No. 2 Start Time 0802 5 min 10 min (circle)

UTM or Waypoint SG BOBO PC24

Weather Conditions _____

RWBL
AM10



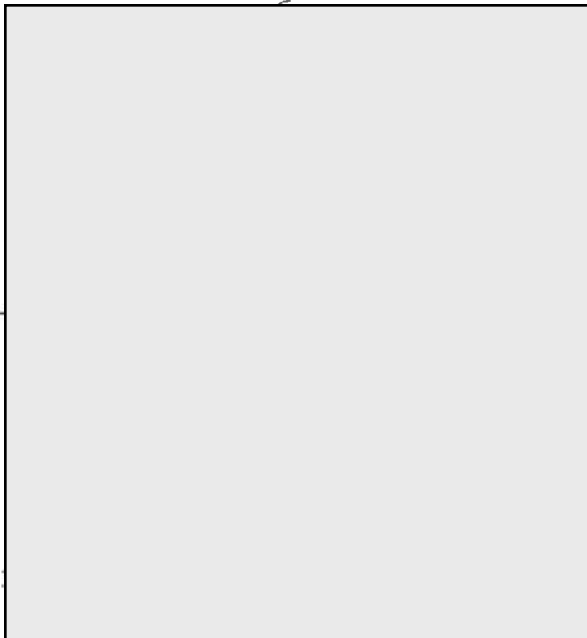
Habitat Notes, Results of Area Search

Station No. PC Visit No. 2 Start Time 0817 5 min 10 min (circle)

UTM or Waypoint SG BOBO PC40

Weather Conditions _____

RWBL



Habitat Notes, Results of Area Search

P1013

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Southgate Solar Properties 708 UTM Map no.: _____ New ID # 10011

Date: 06/05/2014 Observer: RLK

Wind (Beaufort scale): 1 Sky: _____ Precipitation: None Temp: 10 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	AMRO		*					5
	BEWA		*					5
	INBU		0					5
	ORLA		0					5
	MUWA		0					5
	CGWA				0 0			5
	AMOR					0 0		5
	HOWR					0		5
	REU				*			5
	BAOR				*			5
	ISLA						*	5
<hr/>								
	HOWR	0 0						5
	AMOR		0 0	0				5
	SOSP	0	0					5
	REU		0					5
	INBU	0						5
	CGWA	*						5

5:21
5:21 -
5:31
FOD woodlot
near crop field

Between 21 & 22
5:44-5:54
FOD woodlot near crop land.

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
Between 22 23 small P00	FAWP	.						3
	HEU	.						3
	AMBO	10						3
SGPC 23 6:06- 6:16 SWC/ SWM	COYE		.					3
	HAUO		.					3
	TEWA	.						3
	AMBO	.						3
	PUFI	.						3
	GLFL							3
	SACB			.				3
	BTNW NOWA					.		3
between 23 and 24	WTSP	.						not w/ ess.
	OVEN	.						3
SGPC 24 6:40- 6:50	WUVR	.						3
	WTSP		.					3
	BLJA	.						3
	COYE			.				3
	BCH		.					3
	GLFL			.		.		3
	NOLJA			.				3
	YRWA AMBO		.					3
between 24 and 25 swc/ hydro ops	SAWW	.						3
	NOLJA	.						3
	INBU	.						3
	SOSJ	.						3
	GLFL	.						3

GPS "seep" ground water seep with significant flow pics 5073-5075

P. 1 of 2

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Southgate Solar Property 9 UTM Map no.: New ID # 12
 Date: 06/05/2014 Observer: RLG
 Wind (Beaufort scale): 2 Sky: 20% Precipitation: none Temp: 12 °C
 Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
SG-PC27 8:21- 8:31 Small FDD woodlot	REVI	"	'					9
	CSWA	'						5
	BCH				"			5
	AMCR				"			5
	INBU						"	5
SG-PC28 8:39- 8:49 Small FDD woodlot	REVI	"	'					9
	EALW		"					5
	INBU			"				5
	AMCR		"					5
	BLJA						"	5

clip mark.

P. lot 2

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Southgate Solar Property 10 UTM-Map no.: New ID# 13

Date: 04 10 2014 Observer: RLB

Wind (Beaufort scale): 3 Sky: 20% Precipitation: NOAP Temp: 20 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total	
		0-50m	51-100m	>100m	0-50m	51-100m	>100m		
SAPL 30 9:29- 9:39 regenerates FOD/L wood containing plant matter	REWH		'	'				S	GREEN
	AMAD	'						S	
	CANG							call	
	BAOR		'					S	
	CEOW	''						S	
	BCHH				'			S	
	SOSP						'	S	
REVI							S	ridge to N	
SAPL 31 9:47- 9:57 pull/march/ swamp veg	NOFL		'					S	
	REWH	''	''					S,P	
	LAVI		'					S	
	EUST	''						FY	
	COBR		''					H	
	MALL						'	H - lowland	
SOSP						'	S		

Armslack REVI ' S from hedge to E
at SAPL 31 INBV ' S
crop/marsh edge SOSP - ' H
→ 10:18 BARS - ' - No aerial foraging over marsh adjacent
MALL - 14 - No high yellow site central
butterfly 2014 5007-5008
SPSA - ' - 0.105 in marsh
WTD

P.1 at 6

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Southgate Solar Properties 15a, 15b, 15c, 15d, 15e, 15f, 15g, 15h, 15i, 15j, 15k, 15l, 15m, 15n, 15o, 15p, 15q, 15r, 15s, 15t, 15u, 15v, 15w, 15x, 15y, 15z UTM Map no.: New IDs 20, 21, C, 18, 19

Date: 06/09/2014 Observer: PLB

Wind (Beaufort scale): 1 Sky: 30% Precipitation: none Temp: 12 °C

Comments: Weather at Finish Temp 20°C, Wind B2, Cloud 10%

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	INBU	0						0
	ALFL							0
	GRCA							0
	BAWL							0
	CHSP							0
	PLBL			0				0
	COYE							0
	SOSP							0
	MDWA							0
	BXIT							0
	CHSP							0
	KILL							0
	AMGO							0
	BLJA	0						0
	TEVA	0						0

50052
7:21
7:21
meadow
marsh
small
power line
of energy
crop land
Between
520
53

H. family CAPNLER

P.5 of 6

SG-PC60
59:50

SG-PC60
10:33-
10:43
Meadow/
thick Kof
near FOD

SG-PC61
10:51-
11:01
FOD

SG-PC62
11:10-
11:20
FOD/
SWM

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	TUVV	2						X in comp
	SDSP	1						S
	CCFL		2					P
	FISP		1					W
	CHSP		1					W
	AMCR			1				W
	REUI			2				W
	INBU		1	1				W
	EALW			1				W
	SDSP				1			W
	GRCA				1			W
	INBU	1						W
	OUIEN		1					W
	CSWA	1						W
	CCFL		1					W
	REUI		1	1				W
	EALW		1					W
	AMCR				1			W
	MOWA				1			W
	CCFL			1				S
	SDSP			1				S
	SCTA		1					S
	AMCR			1				S
	KLJA		1					S
	BTWV		1					S
	HALD	1						S/call
	INBU	1						S
	OUIEN				1			S

ADU

P.202

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
SGWC65 6:01-6:11 small deciduous woodland in the park	EUST	☒						5
	AMLE	'						5
	COGL	☐						5
	GCFL			'				5
	REBL			'				5
	ENBL		'					5
between 65 & 66	SO5P	'						5
	AMLO	'						5
SGWC66 6:20-6:30 sw meadow hayfield	SO5P	'						5
	AMLO	'	'					5
	BLJA			'				5
	RISP			'				5
	WTSP		'					5
	GRSP		'					5
	REVL			'				5
	BTNW			'				5
	GCFL						'	5
	INBL						'	5
	VFER						'	5
	EUST					☒☒		5
COYE					'		5	
SGWC67 6:36-6:46 Conifer plantation Deciduous Thicket	BLJA	'		'				5
	CEAL	'						5
	MDDO	'					'	5
	AMLO					'		5
	FIGP						'	5

GCFL

red squirrel

P. 1 of 6

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Southgate Solar Properties 20, 21, C, 18, 19 UTM Map no.: _____

Date: 06/27/2014 Observer: PLW

Wind (Beaufort scale): 1 Sky: <10% Precipitation: none Temp: 12 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	KWBL	"	"					S
	FAKI	"						S
	COYE	"	"					S
	SOOP	"	"	"				S
	WITV		"					S/call
	AMCR			"				S
	ALFL	"						S
	GCFL					"		S
	REH					"		S
	BERI				"			H
<hr/>								
	COYE	"						S
	GCFL	"						S
	RWBL	"						S

5:32
5:43

GRFR

between 5:05-4

checked barn at Finish on property 20.
 BARS in area going in & at of barn, no nests seen, but nesting probable.

June 27 2014

P. 3 of 6

20, 21, 0, 18, 19

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
Between 54-55 Crap/dog	AMCR	'						16
	GLJA	'						9
SCPC 55 6:54 7:04	OVEN	'						9
	GLJA	'			.			9
	FAWP	'	'					9
	REVI	"						9
	LOTH	'	'					9
	AMCR	'					"	Stall
	AMAD	'			.			9
Between 55-56	INBU	'						9
SCPC5b 7:15 7:25	LOTH	'						9
	ACFL	'	"					9
	REVI	'	'	.				9
	BCCH	'	'					9
	AMCR	'		'				9
	HA40	'	'					Stall
	AMAD	'	'					9
	GLJA	'						9
	SO3P	'			.			9
	RBGR	'				"		9
	CEAU	'			"		9	
	LAVI	'			.		9	
Between 56-57	FAWP	'						9
	REVI	'						9
	OVEN	'						9

GREY

GREY

June 27 2014

P. J. A. 6

20, 21, C, 18, 19

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
56-PC59								
8:19	REVI	'						4
	AMCR			'				1/2 call
8:29	SOSP			'				4
	REVI							4 call
	AMAO			'				5
Between								
59-60	WITU	'						4
8:30	KILL	'						5
8:31	AMCR	'						1
8:32								
8:33								
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8:36								
8:37								
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11:00								

56-PC59
8:19
8:29

Between
59-60
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10:58
10:59
11:00

56-PC60
8:34
8:44

56-PC61
9:56
9:06

Between
61-62

white
admission

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
56-PC64 8:19- 8:29 hay field beside station cut * no view into barn near PC64 to check for BARS activity.	CEAW	"						S
	FISP			"				S
	MWBL	"	"	"				S
	AMAO			"			85	H, S
	KEVI			"				S
	GCEL			"				S
	INBU		"					S
	SAUS			"				S
	AMRO	"		"				S
	HOLR			"				S
	BLJA							S
	BORD						"	S
	NERA						"	S - spot
	FUST						"	FL
	BARS						50	H - lead
	RBAR						"	H - farm FL
56-PC65 8:42- 8:53 Between 65 & 66	MONO	"						S
	AMVE	"						S
	COYE	"	"					S
	BLJA	"						S
	SOSP	"	"					S
	BGCH	"						S
	AMAO	"						S
	AMRO	"	"					S, No
	COGR	"	"				"	S
	CHST	"	"					H
CEAW	"		"				S	
AMCR	"		"				No S	
								S
	EAL	"						S
								S

GREY
in hay

Spot
30m
cleaning
farm cut
hay
1/3 in
cut hay
over
cut hay

A1073

Appendix 3. Sample data sheet for ten-minute point counts

New IDs
14, 15, 16, 17

Location (Site Name): Satygate Solar Properties 12, 12a, 13, 14 UTM Map no.: _____

Date: 06/10/2014 Observer: RLB

Wind (Beaufort scale): 1 Sky: 30% Precipitation: none Temp: 15 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
SGPC68 7:19- 7:29 FOD	KEVI	'	'	'				S
	OVEN	'	'					S
	EAWP		'				'	S
	YBSA		'					S
	BLSA						'	S
	AMCR						'	S
Between 6868 & 69	WTTG	'					'	H
SGPC69 7:37- 7:47 FOD	KEVI		'					S
	OVEN			'				S
	EAWP		'					S
	BLSA	'						S
	AMCR			'				S
	SCCH		'					S
	SCIA				'			S
	GCFL						'	S

(9:00)

Between 690
70

SGPC70
7:54
8:04
FOD

Between 700
71

SGPC71
8:12
8:22
FOD

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	WOTH	"						S
	MOWA	"						S
	REVI	"						S
	FAWP	"	"					S
	BTBW	"	"					S
	BLSA			"				S
	RUGP	"						H
	AMRD		"					S
	WOTH						"	S
	NOFL					"		S
	VEER					"		S
	MOWA						"	S
	CSWA	"						S
	REVI	"						S
	BTBW		"					S
	FAWP		"	"				S
	VEER			"				S
	BLSA			"				S
	MOWA			"				S
	NOFL			"				S/call
	AMCR						"	S
	WOTH						"	S
	REVI					"		S
	DUEN					"	"	S
	KILL					"	"	S/call - call down
	Woodpecker					"	"	-feeding noise

1. Red
Square
Archer

call down
noise
-feeding noise

SGPC73
8:28-
8:38
FOO

Between
73 & 74
Forest edge

SGPC74
FOO/
SLWD near
edge
9:02-
9:12

After
PC 74
house
burn Area

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	YBCU/HAV			"				5-YBCU
	CSWA		"					5
	EAJP		"					5
	BTBW	"						5
	AMRO		"					5
	COYE			"				5
	OVEN						"	5
	HAWD				"			5-call
	AMGL						"	5
	SOOP	"						5
	HOWR	"						5
	MOLLA	"						5
	EAJP	"						5
	RFWI		"					5
	OVEN	"						5
	WISA			"				5 display
	HOWR			"				5
	RWSE			"				5
	GCFL						"	5
	SOOP					"		5
	BAR5	"						11 - no access to bang to collect

typical call

display

no access to bang to collect

D. Wolf 3

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Saturngate Solon W turbines 14-17 (old #'s 12, 12a, 13, 14) UTM Map no.: _____

Date: 06/23/2014 Observer: PLB

Wind (Beaufort scale): 2 Sky: 20% Precipitation: none Temp: 15 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
56P68 5:32- 5:42	OVEN	'						5
	REVI	''	''					5
	WOTH		'					5
	AMDO	'	'					5
	SCTA	'						5
	HALO							5
	EAWP					'		5
	AMCR						''	5 call
56P69 5:50- 6:00	OVEN	'		'				5
	REVI		'	''				5
	MOSO			'				5
	AMCR			''				5
	RBGL			'				5
	BIFD					'		5
	EAWP					'		5

Between 69-70

SO PC 70
6:09
6:19

Between 70-71

SO PC 71
6:33-
6:43

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
	FAWP	"						5
	REVI	"						5
	FAWP		"					5
	VEBL		"	"				5
	MOWA		"					5
	REAR		"					5
	AMCO			"				Skull
	OVEN	"					"	5
	Wood pecker		"					Feeding
	AMRU		"					5
	BTBL				"			5
	YBSA				"			Skull
	NOFL				"			Skull
	WBNU	"						5
	BTBL		"					5
	FAWP		"	"				5
	REVI			"				5
	OVEN			"				5
	MOWA					"		5
	AMCO					"		5
	AMCO				"			5, No
	WOIT					"		5

chipmunk

GPS 272 - small butterfly near PC70 DBH 3cm full crown, crotch present

GPS 279 - butterfly DBH 5cm full crown, crotch present pieces 5532-5533
-small dead butterfly beside

properties 1417

Page 3 of 3

June 23 2014

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50m	51-100m	>100m	0-50m	51-100m	>100m	
SAPC72 6:51- 7:01	REU	'						5
	BTBL	'						5
	EALP			'				5
	AMCR			'				5
	MDDP			'				5
	OVEN		'	'				5
	AMLD		'					5
	BLJA						'	5
Between 7:20 7:4 (#73 was not used) too close cropped preparable	MWA							
	BTBL							
SAPC74 7:22- 7:32	REU	'						5
	EALP	'						5
	OVEN	'						5
	WITV		'					5
	BLJA			'				5
	AMCR		'					5
	SOSP			'				5
	BAOR		'					5
YBSA	'						5	
After 7:4 back to car. crop edge thrued house/ hay field (cut) → 7:38	COYE	'						5
	BCC4	'						5
	CHSP	'						5
	SOSP	'						5
	WITV	'						5
	WCCA	'						5

WITV

checked barn on 14 - no evidence of BARS nesting
no BARS seen.

Nightjar Stops Description Data
(only needed if not submitted in previous year)

Use this form if you are not able to provide a digital map of your stopping points. See Nightjar Survey Network Website at www.ccb-wm.org for more details on how to provide digital or hardcopy map data.

Observer Name	Richard Baxter
State	Ontario
County	
Route Name and Number	Sutcliffe Solar
Year of Survey	2014

UTM

Stop#	Latitude e.g., dec degrees 38.43567 or deg, min, sec 38° 56' 07"	Longitude e.g., dec degrees 71.45465 or deg, min, sec 71° 25' 39"	or Location Description	# Houses Visible	Dominant 3 habitats (use codes below)
1	521707	4884187	Roadside Pasture	2	
2	520446	4883988	Roadside Pasture	0	
3	518390	4885331	Roadside Pasture	2	
4	518620	4882177	Roadside Pasture	2	
5	517890	4882201	Pasture	0	
6	518741	4881463	Pasture	1	
7	517810	4880924	crop, meadow, marsh woodland	0	
8	519382	4881798	pasture, woodland meadow	1	
9	520627	4881946	pasture, swamp plantation.	2	
10	522017	4882178	pasture	1	

14 520133 4882201 hydro clearing/crop PDB 0

Habitat Codes:
 PF = Pine/Conifer/Mixed Forest D = Developed (urban, residential area) W = Water
 HF = Hardwood Forest O = Open (fields, lawn, clear-cut) M = Marsh/Wetland
 P = Prairie SHR = Shrub AG = Agriculture

please feel free to add others if needed

Mail this form to: Nightjar Survey Network, Center for Conservation Biology, College of William and Mary Williamsburg, VA 23187-8795

or email digitally completed version to: mdwils@wm.edu. Include *Nightjar Survey* on subject line of email.

11	523223	4882382	Hay field	1	
12	523629	4884573		1	
13	520924	4886124		0	

PC25

0812-
0822
red squirrel

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50 m	51-100 m	>100 m	0-50 m	51-100 m	>100 m	
	W7SP		.					
	SOSP			.				
	BCHH				.			

S
S
H

Area search
0822-
0829

PC24
0829-
0839

	W7SP	(same as PC25)					
	HAWO				.		
	SWSP					.	
	red-headed woodpecker (nonvocal)				.		

S
S
S
call

Area search
0839-
0848

PC23
0848-
0858

	BTNW		X	.			
	BCHH		:				
	WBNU		X	.			
	NowA		.		.	.	

S
S
S
S

Area search
0858-
0905

PC26
10:54-
11:04

	SOSP	.			.		
	EUST	:					
	RWBL		.		:		
	TUVV	.			:		

S
F/O
S
F/O

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Southgate - Property 12 UTM Map no.: _____

Date: 19 / 06 / 2014 Observer: Jonathan Harris

Wind (Beaufort scale): 2/3 Sky: 5%cc Precipitation: none Temp: 16 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes			Second five minutes			Total	EVI
		0-50 m	51-100 m	>100 m	0-50 m	51-100 m	>100 m		
PC 27 0920 - 0930	REVI		.						S
	INBU	.							S
Area search 0930 - 0938									
PC 28 0938 - 0948	AMCR		..						Call
	AMGO	..							F/O
	BLJA		..						S
PC 29 10:38 - 10:48	INBU		..						S
	EWBL		.						S
	SOSE				.				S
	AMGO				..				F/O
	BHCO				.				S

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Salthgate - Property 13 UTM Map no.: _____

Date: 19/10/2014 Observer: Jonathan Harris

Wind (Beaufort scale): 2/3 Sky: _____ Precipitation: none Temp: 16 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

PC 31
10:03 -
10:13
GRFR
pinked
with

Stn	Species Code	First five minutes			Second five minutes			Total
		0-50 m	51-100 m	>100 m	0-50 m	51-100 m	>100 m	
	RWBL	..						
	CAGO		*					
	Eust	..						
	Cackie	::						
	BCCH	.						
	SOSP		.					
	BAOR					.		
	BAOR	..						
	BLJA				..			
	RWBL					.		
	GRFL				..			

S
H, FY
H
calls, H
H
S
S
S, CF
H
S
P

PC 30
10:20 -
10:30
WTD

4/5

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).



VISIT INFORMATION

Sunset: 21:09, 15 min surveys.

Route #: SG Route Name: Salthgate Station (A - H): _____

Observer #: JWH Observer Name: Jonathan Harris

Visit #: 3 Day: 25 Month: 06 Year: 2014

Cloud Cover (10th): 100 Temperature (°C or °F): 17 Beaufort Wind Scale (0-6): 0

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfm2008.cdr, rev 02/2008

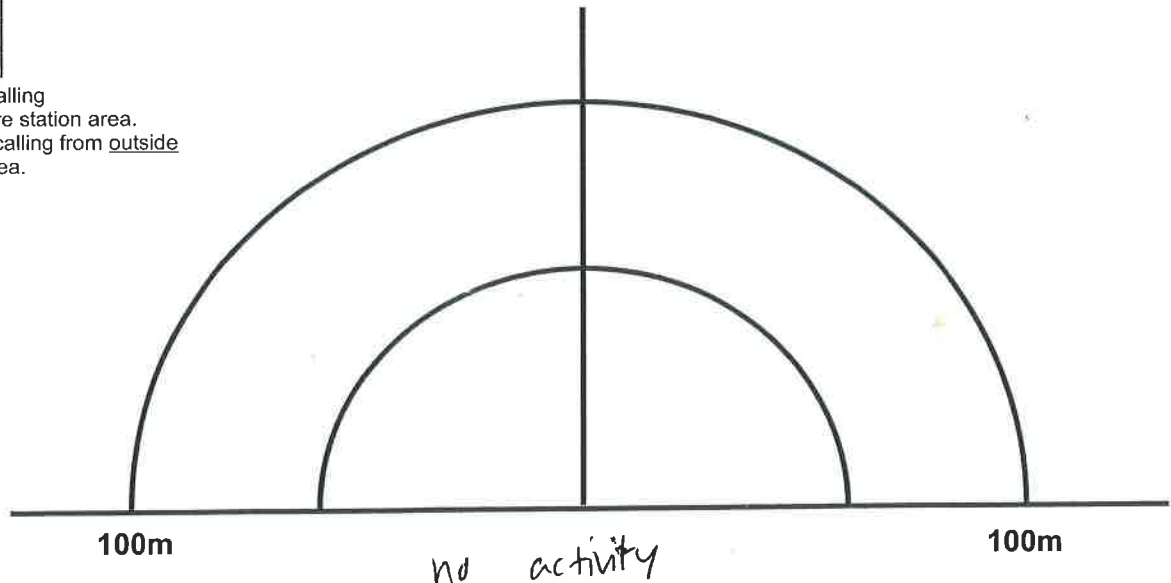
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

Station ~~14~~ 15

Station Start Time (24 hr): 21:39

Background Noise Code (1-4): 0

S



* Check if species is calling from inside 100-metre station area.

** Check if species is calling from outside 100-metre station area.

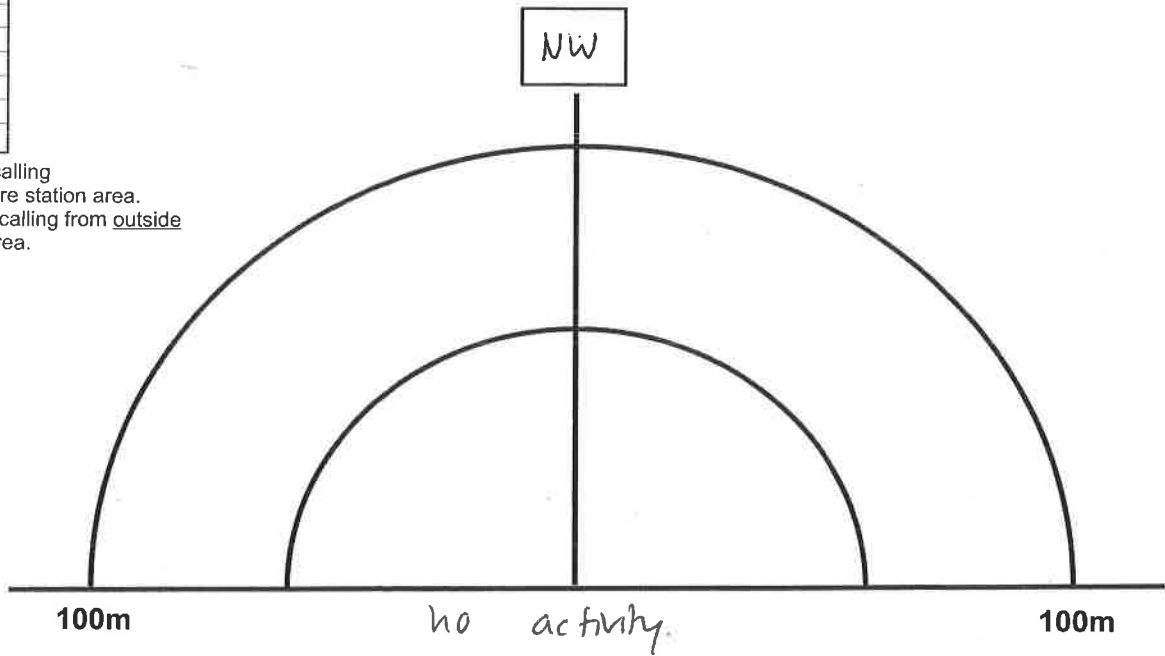
2/5

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:51
Background Noise Code (1-4): 0

Station 16



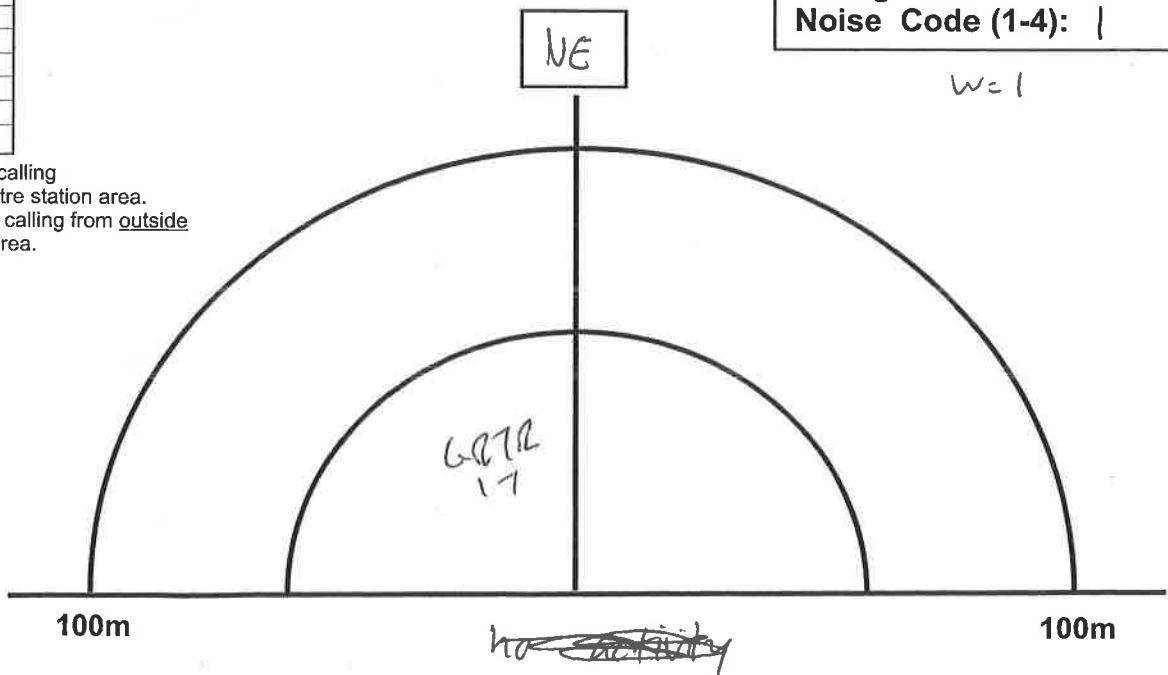
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station 17

Station Start Time (24 hr): 22:06
Background Noise Code (1-4): 1

w=1



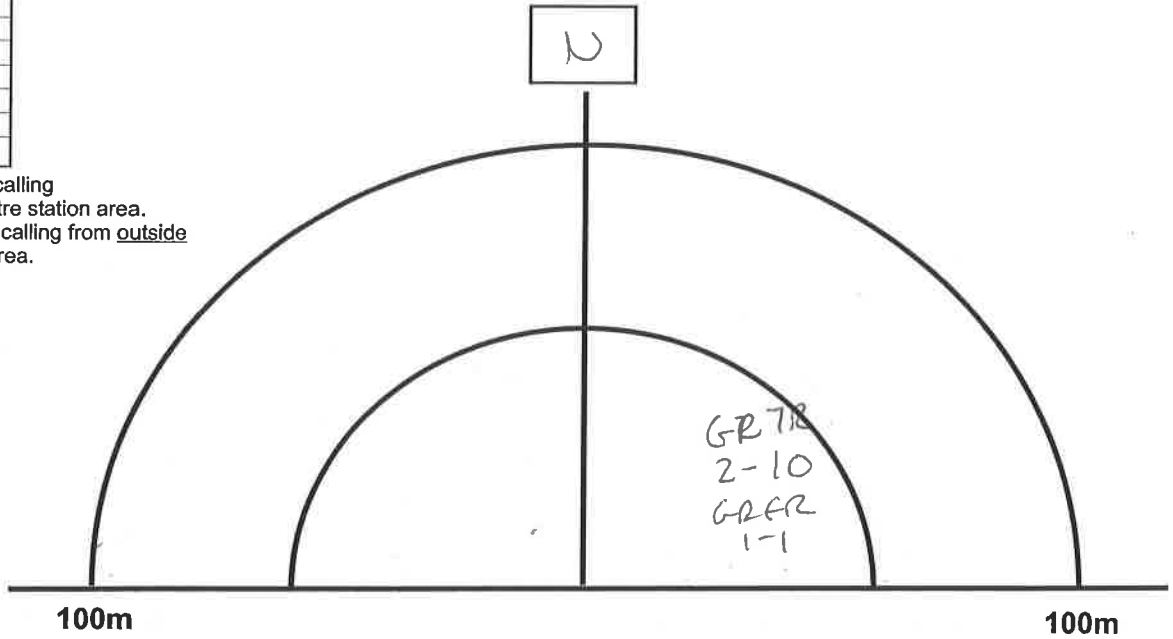
315

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station ~~18~~ 18

Station Start Time (24 hr): 22:14
Background Noise Code (1-4): 0

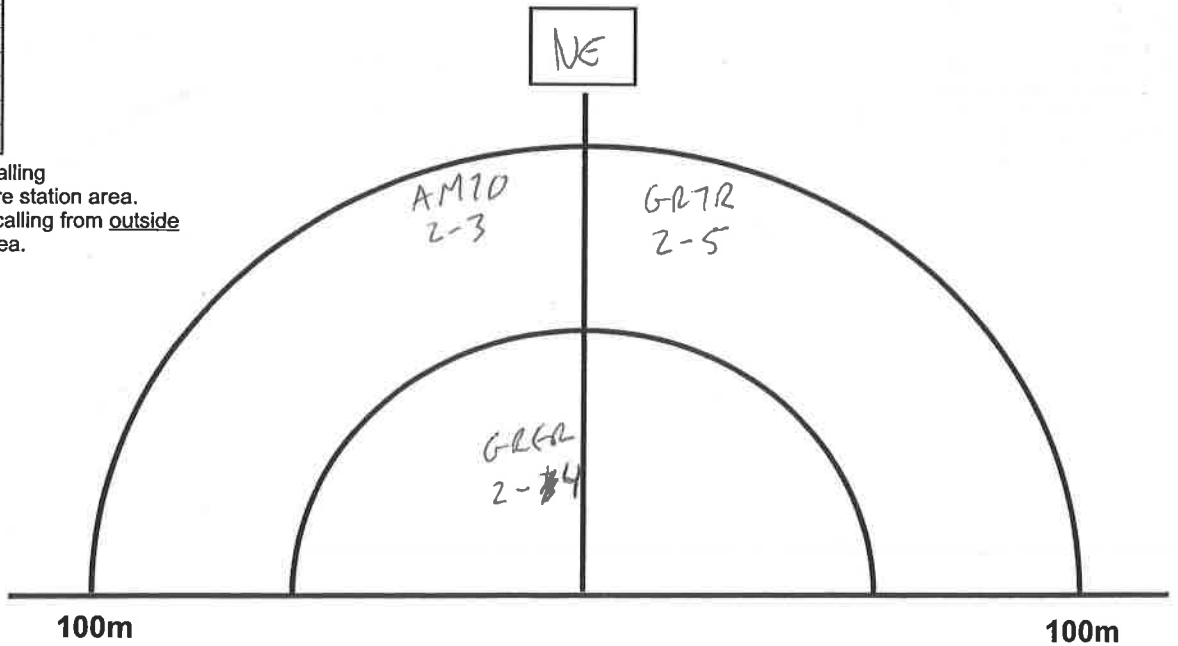


Species	In*	Out**
AMTO	✓	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station ~~19~~ 19

Station Start Time (24 hr): 22:34
Background Noise Code (1-4): 0



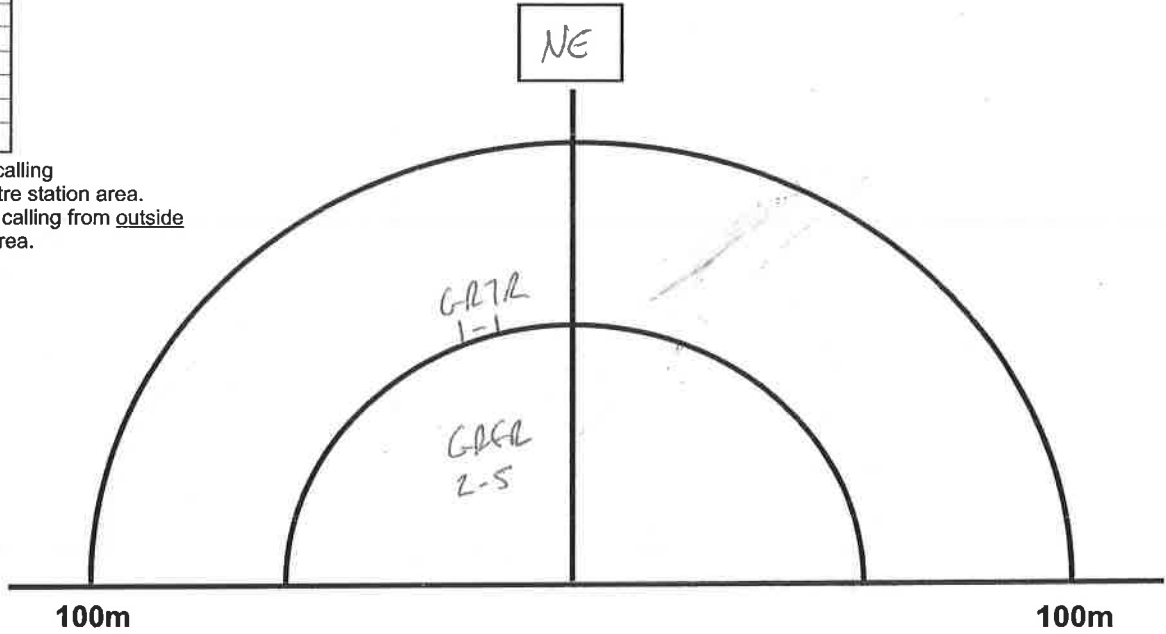
4/5

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR	✓	
GRFR	✓	
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station ~~18~~ 20

Station Start Time (24 hr): 22:44
Background Noise Code (1-4): 0

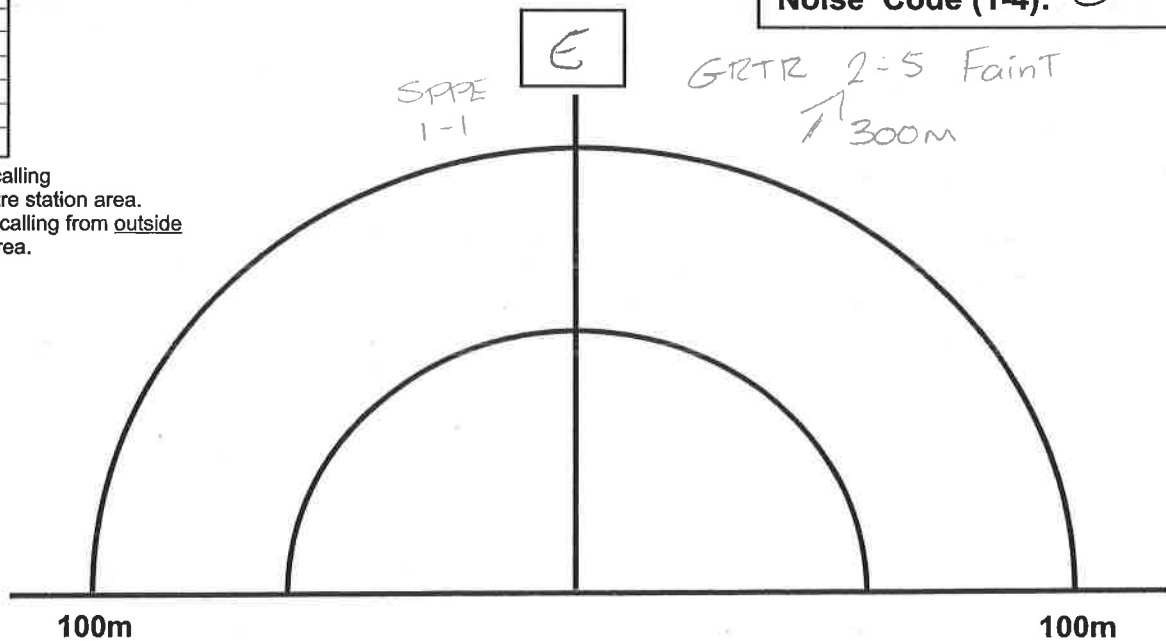


Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station ~~18~~ 24

Station Start Time (24 hr): 11:01
Background Noise Code (1-4): 0

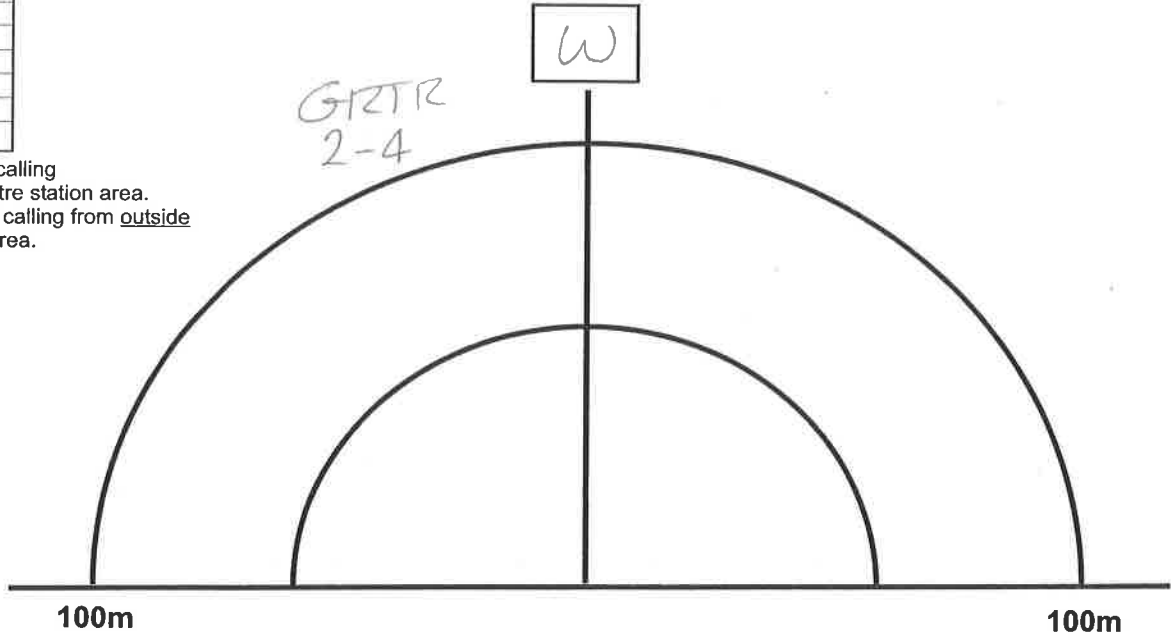


5/5

Station Start Time (24 hr): 11:08
Background Noise Code (1-4): 1

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

Station F
23

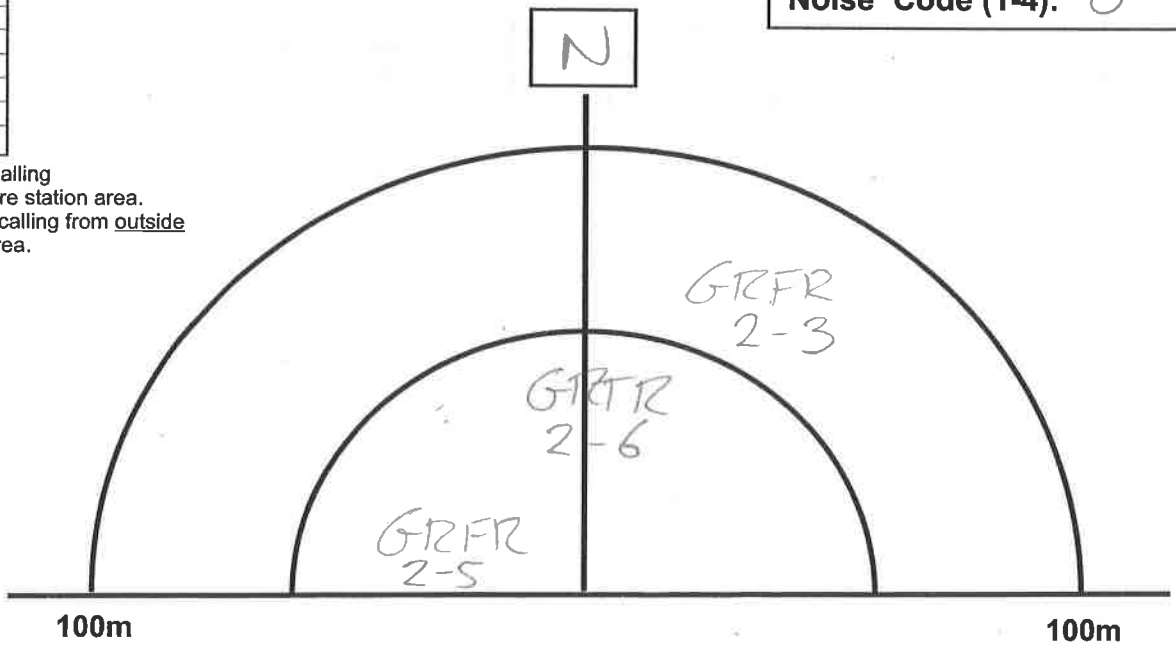


* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

Station Start Time (24 hr): 11:23
Background Noise Code (1-4): 0

Station G
13



* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

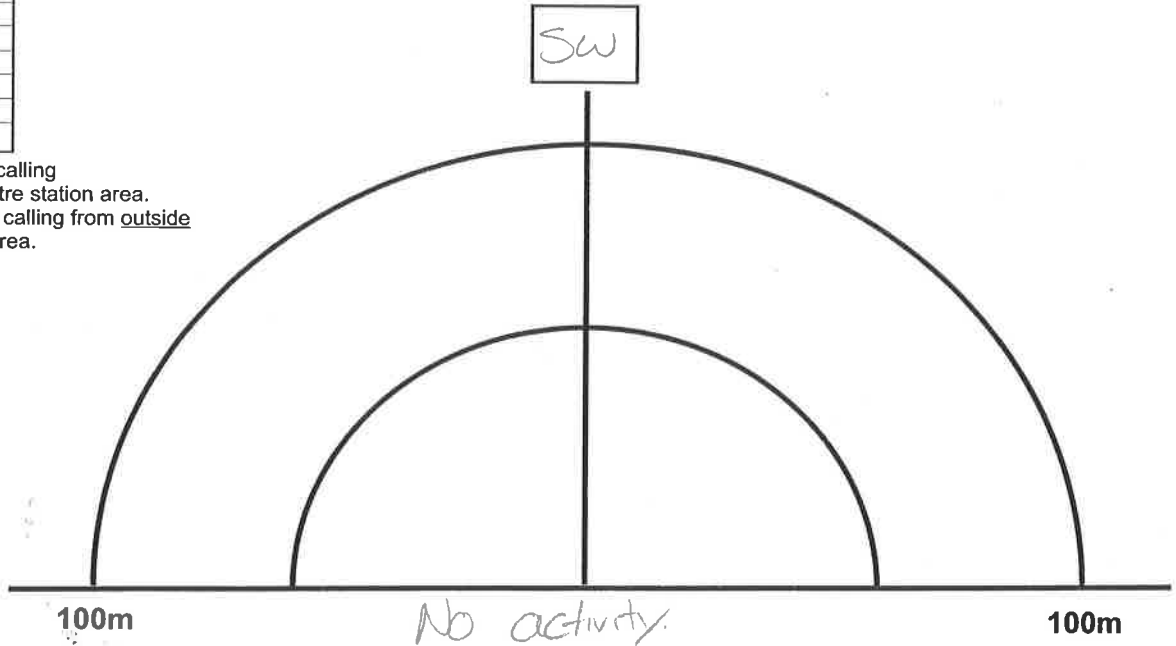
5/5

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 11:22
Background Noise Code (1-4): 0

Station F
28

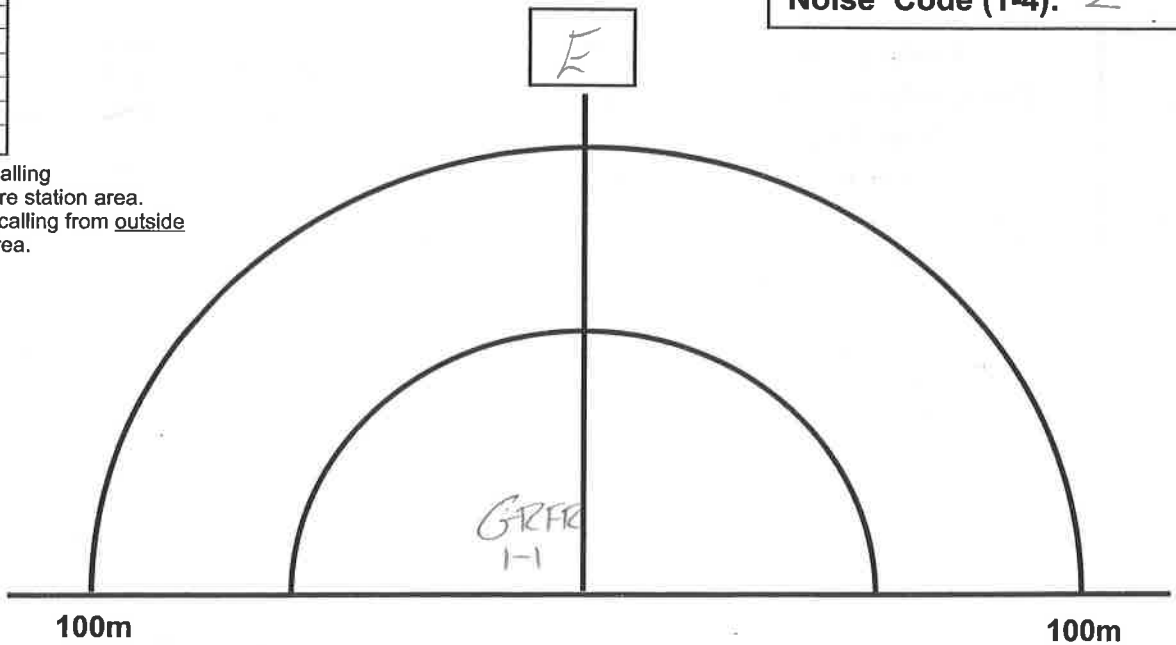


Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
 ** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 11:29
Background Noise Code (1-4): 2

Station G
27

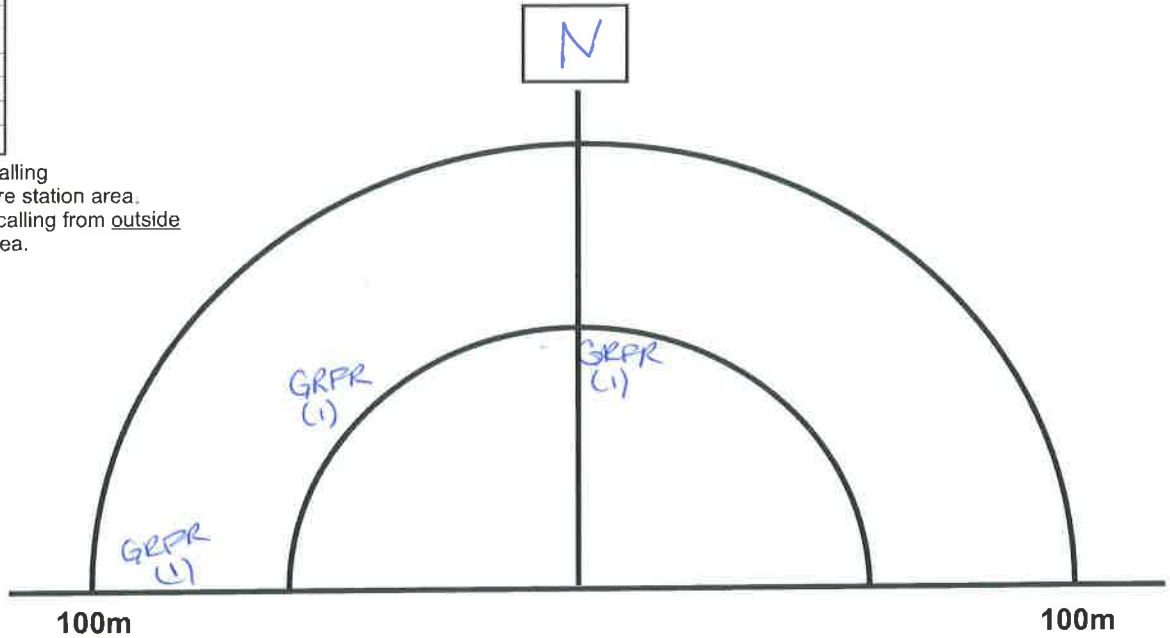


Station Start
Time (24 hr): 20:50PM

Background
Noise Code (1-4): 0

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR	X	X
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

Station B
#12



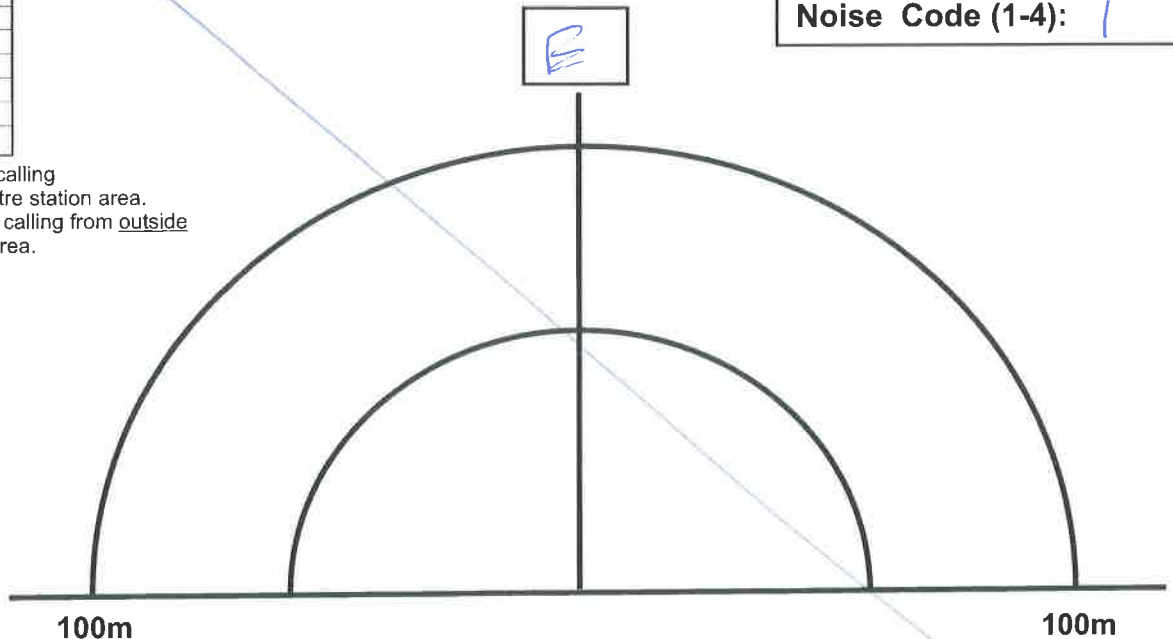
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

Station C
#27

Station Start
Time (24 hr): 11:08PM

Background
Noise Code (1-4): 1



* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Marsh Monitoring Program - Amphibian Data Form

Return by 31 July

Please write legibly (in pen).



VISIT INFORMATION

Route #: _____ Route Name: _____ Station (A - H): 11

Observer #: Alissa Fraser
Jeremy Bannon Observer Name: _____

Visit #: _____ Day: 25 Month: June Year: 2014

Cloud Cover (10th): _____ Temperature (°C or °F): 17 Beaufort Wind Scale (0-6): 1

Precipitation (check one): None/Dry Damp/Haze/Fog Drizzle Rain

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted

Code 2: Some calls simultaneous, number of individuals can be reliably estimated

Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Amphdfm2008.edr, rev 02/2008

** calls very distant from NE*

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		X
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		X
WOFR		

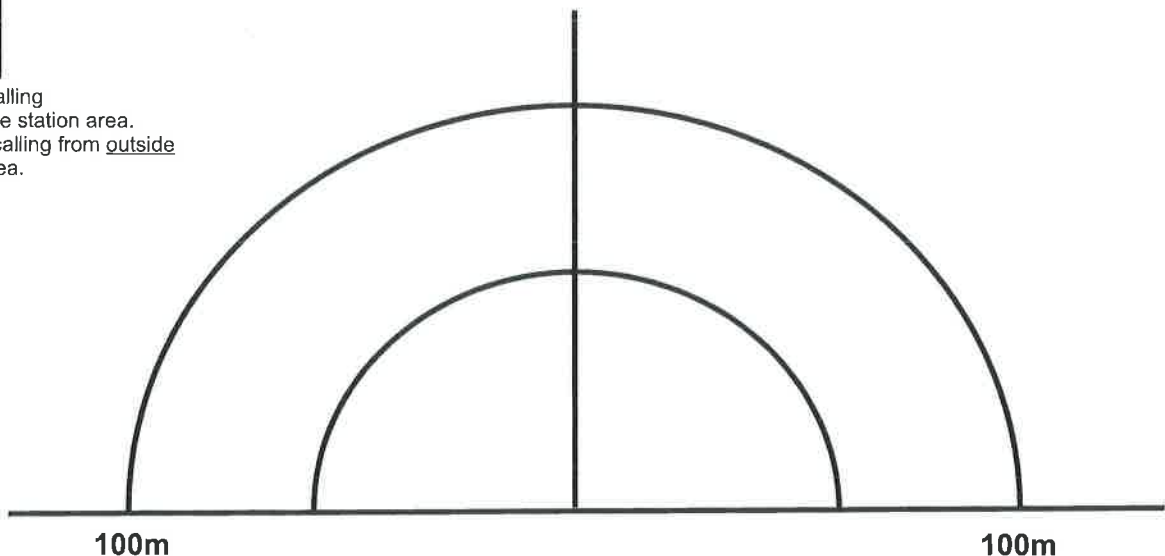
Station A
#11



Station Start
Time (24 hr): 22:35

Background
Noise Code (1-4): 0

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.





ENVIRONMENTAL IMPACT STUDY REPORT

Southgate Solar Project

April 2015

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1. INTRODUCTION

Southgate Solar LP proposes to develop a solar facility with a maximum name plate capacity of 50 megawatts alternating current (MWac), located near Mount Forest, in the Township of Southgate, County of Grey, Ontario (**Figure 1**). The renewable energy facility will be known as the Southgate Solar Project (“the Project”).

Southgate Solar LP has initiated the Project through a Power Purchase Agreement (PPA) with the Ontario Power Authority. The Project will require approval under Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval (REA) under Part V.0.1 of the *Ontario Environmental Protection Act*.

O. Reg. 359/09 requires that all renewable energy projects conduct an environmental impact study for all natural heritage features that fall within the Project Location or the prescribed setback area (REA Section 26). This *Natural Heritage Assessment (NHA) Environmental Impact Study Report (EIS)* was completed to address the regulatory requirements for the REA process and is the fourth and final report in a series that fulfills the requirements of the NHA as required by O. Reg. 359/09. The NHA EIS will detail the potential impacts, mitigation and monitoring requirements to protect natural features within and adjacent to the Project Location. These reports will be submitted to the Ministry of Natural Resources and Forestry (MNRF) for review and comment, as required in O. Reg. 359/09. Discussion of Species at Risk, fish habitat and other information needs, as outlined in the MNRF’s *Approval and Permitting Requirements Document (APRD) for Renewable Energy (MNRF 2009)*, are discussed in separate reports, under direction from the MNRF and in compliance with the REA and other applicable legislation.

2. THE PROPONENT

In the course of developing renewable energy projects, Southgate Solar LP strives to satisfy various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Southgate Solar LP aims to build long-term relationships with the communities that host its projects. Southgate Solar LP is committed to the health and welfare of the residents of the Township of Southgate, and to ensure that the Southgate Solar Project is successful for stakeholders.

Contact information for the Proponent is as follows:

Full Name of Company:	<u>Southgate Solar LP</u>
Prime Contacts:	<u>- Simon Kim, Project Manager</u> <u>- A. José De Armas, Manager, Project Development</u>
Address:	<u>2050 Derry Road West 2nd Floor, Mississauga, ON, L5N 0B9</u>
Telephone:	<u>(905) 501-5657</u>
Email:	<u>ssp@samsungrenewableenergy.ca</u>

Dillon Consulting Limited is the prime contractor for the preparation of this report. The contact at Dillon is:

Full Name of Company:	<u>Dillon Consulting Limited</u>
Prime Contact:	<u>Michael Enright, Project Manager</u>
Address:	<u>1155 North Service Road West, Unit 14, Oakville, Ontario, L6M 3E3</u>
Telephone:	<u>(905) 901-2912 ext. 3401</u>
Email:	<u>menright@dillon.ca</u>

3. PROJECT LOCATION

The proposed Class 3 Solar Facility is to be located within the Township of Southgate, in the County of Grey, approximately 11 kilometres north of the community of Mount Forest. **Figure 1** shows the general location of the Project in Southwestern Ontario. The proposed Project Location consists of approximately 235 hectares (581 acres) and is contained within an area bounded on the north by Southgate Road 24, Southgate Road 14 to the south, Southgate Road 47 to the east, and Highway 6 to the west. The proposed Project Location, consisting of multiple privately-owned parcels, is to be leased by Southgate Solar LP. It has an approximate centroid at the following geographic coordinates:

- Latitude: 44° 6' 7.78" N
- Longitude: 80° 44' 49.91" W

Figure 1 shows the general location of the Project in Ontario. The Project Location is defined in O. Reg. 359/09 to be *“a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project”*.

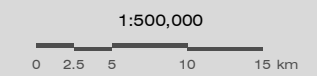
Figure 2 shows the Project Location as defined by O. Reg. 359/09. Project components, including solar modules and electrical facilities such as inverters, transformers, Main HV substation and electrical lines, will be located on private land. Areas within the Project Location but outside of the perimeter fence are “Areas of Operational Flexibility”. These areas have been reserved to accommodate other Project requirements (ex. stormwater measures, temporary laydown areas, etc.). This is discussed in greater detail on Section 4 of the *Project Description Report*.

Figure 2 also includes the 50 m, 120 m and 300 m setbacks from the Project Location. Each setback distance is applicable to various components of the REA process. Setback development prohibitions for solar facilities are outlined in Part V, Sections 37 and 38 of O. Reg. 359/09 (revised in November 2012).



SOUTHGATE SOLAR PROJECT

**FIGURE 1
GENERAL PROJECT LOCATION**



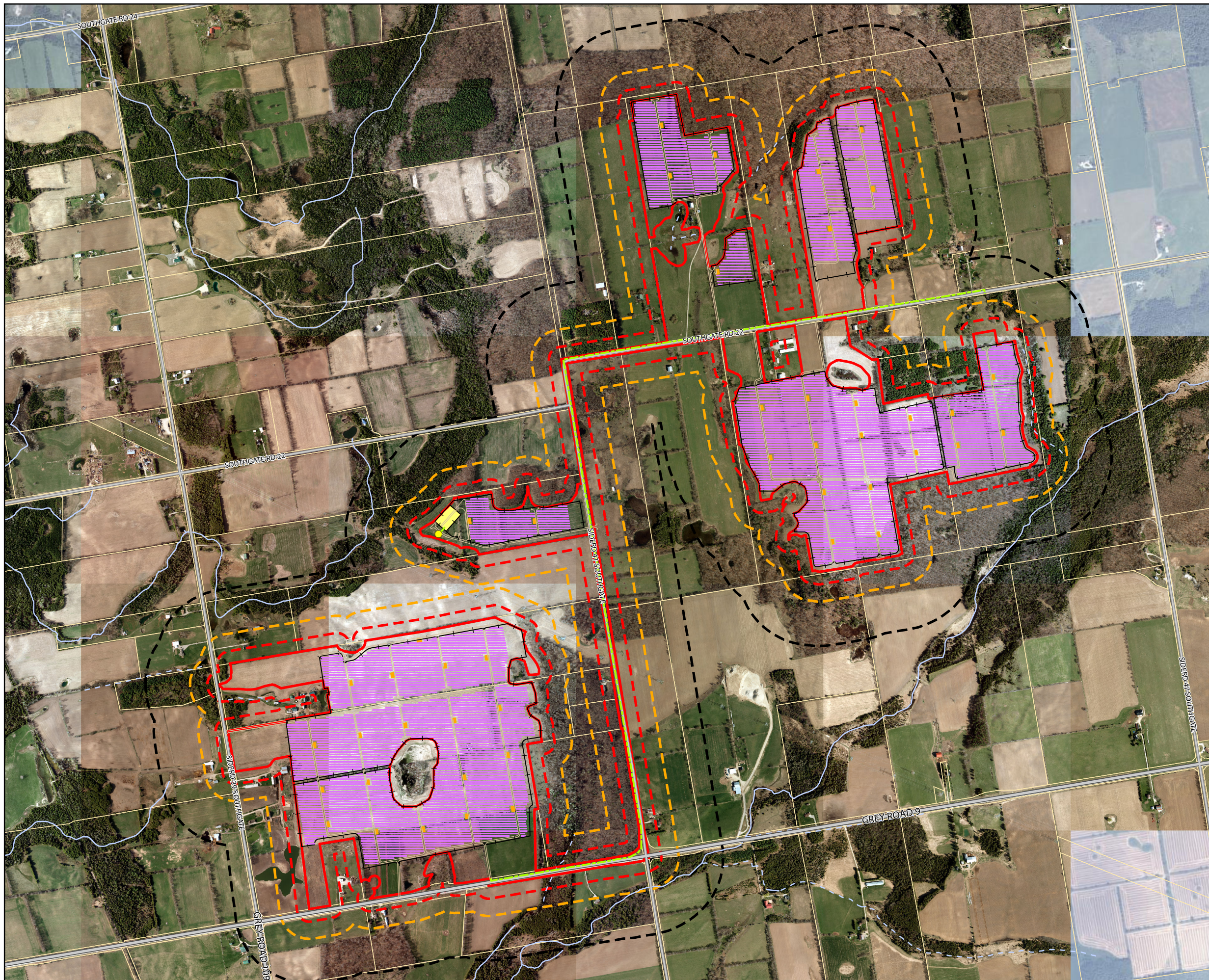
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 9/25/2014

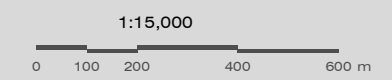


SOUTHGATE SOLAR PROJECT

**FIGURE 2
PROJECT LOCATION**

- Point of Common Coupling
- Overhead Cable
- Fence
- Access Road
- Inverter
- Solar Panel
- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Substation
- Parcel Boundary

The area between the fence line and the Project Location is the Area of Operational Flexibility.



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\Records Review



PROJECT: 149154
STATUS: DRAFT
DATE: 11/28/2014

4. SUMMARY OF NATURAL HERITAGE ASSESSMENT

An evaluation of significance was completed according to Section 27 of O. Reg. 359/09. This evaluation was preceded by a records review and site investigation, as per Sections 25 and 26 of O. Reg. 359/09, respectively. A summary of natural features detailed in previous reports is outlined in **Table 1**. This table summarizes the results of all NHA work completed for the Project and identifies all natural features within the Project Location and surrounding 50 m, including those that have been identified as significant, during the NHA process and require an EIS.

Table 1: Summary of the Natural Heritage Assessment for the Southgate Solar Project

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Provincial Parks and Conservation Reserves						
None identified within the Project Location or within 50m						
ANSI, Life Science						
None identified within the Project Location or within 50m						
ANSI, Earth Science						
None identified within the Project Location or within 50m						
Southern Wetlands						
4	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	30 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
6	- Perimeter fence - Solar panels	20 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
7	- Perimeter fence - Solar panels	45 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
9	- Overhead cable	18 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
11	- Perimeter fence - Solar panels - Area of Operational Flexibility	47 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
13	- Perimeter fence - Solar panels - Access roads - Main HV substation	33 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
14	- Perimeter fence - Solar panels - Access roads	30 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
17	- Overhead cable	0 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
18	- Area of Operational Flexibility	30 m	No	Identified	Assumed provincially significant	Y

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Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
20	- Overhead cable - Area of Operational Flexibility	0 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
21	- Perimeter fence - Solar panels - Access roads - Inverter station	30 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
22	- Area of Operational Flexibility	21 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
23	- Access Road - Area of Operational Flexibility	4 m	Yes	Verified – Boundary revised	Assumed provincially significant	Y
25	- Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility	8 m	No	Identified	Not significant	N
26	- Perimeter fence - Solar panels - Area of Operational Flexibility	30 m	No	Identified	Assumed provincially significant	Y
27	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	30 m	No	Identified	Not significant	N
28	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	5 m	No	Identified	Not significant	N
29	- Perimeter fence - Solar panels - Access roads	30 m	No	Identified	Assumed provincially significant	Y
30	- Overhead cable	0 m	No	Identified	Assumed provincially significant	Y
31	- Perimeter fence - Solar panels - Access road - Area of Operational Flexibility	30 m	No	Identified	Not significant	N

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
32	- Area of Operational Flexibility	37 m	No	Identified	Assumed provincially significant	Y
Woodlands						
A	- Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Overhead cable - Area of Operational Flexibility	0 m Part of this feature is located within the Project Location	Yes	Verified – Boundary revised	Significant	Y
B	- Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility	0 m Part of this feature is located within the Project Location	Yes	Verified – Boundary revised	Significant	Y
C	- Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility	0 m Part of this feature is located within the Project Location	Yes	Verified – Boundary revised	Significant	Y
D	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m	Yes	Verified – Boundary revised	Significant	Y
E	- Overhead cable - Area of Operational Flexibility	0 m	Yes	Verified – Boundary revised	Significant	Y
F	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	2 m	Yes	Verified	Not Significant	N
H	- Perimeter fence - Solar panels - Access roads	30 m	Yes	Verified – Boundary revised	Not Significant	N
I	- Area of Operational Flexibility	4 m	Yes	Verified – Boundary revised	Significant	Y

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Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
K	- Overhead cable	0 m	Yes	Verified – Boundary revised	Not Significant	N
L	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	30 m	No	Identified	Not Significant	N
M	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m part of this feature is located within the Project Location	No	Identified	Not Significant	N
Wildlife Habitat						
Seasonal Concentration Areas						
Colonially Nesting Bird Breeding Habitat (Ground) CNG1	- Perimeter fence - Solar panels - Area of Operational Flexibility	30 m	No	Identified	Not Significant	N
Colonially Nesting Bird Breeding Habitat (Ground) CNG2	- Area of Operational Flexibility	30 m	No	Identified	Not Significant	N
Turtle Wintering Area TWA1	- Access road - Area of Operational Flexibility	0 m	No	Identified	*Treated as Significant	Y
Turtle Wintering Area TWA2	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m	No	Identified	*Treated as Significant	Y
Rare Vegetation Communities						
None identified within the Project Location or adjacent lands within 50 m						
Specialized Wildlife Habitat						
Turtle Nesting Areas TNA1	- Perimeter fence - Solar panels - Access roads - Inverter station	30 m	No	Identified	*Treated as Significant	Y

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Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Woodland Raptor Nesting Area WRNA1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Amphibian Breeding Habitat (Wetland) ABHWE1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	7 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE2	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility 	8 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE3	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	30 m	No	Identified	Not Significant	N
Amphibian Breeding Habitat (Wetland) ABHWE5	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	5 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE6	<ul style="list-style-type: none"> - Overhead cable 	18 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE7	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE8	<ul style="list-style-type: none"> - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	*Treated as Significant	Y

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Amphibian Breeding Habitat (Wetland) ABHWE9	- Access Road - Area of Operational Flexibility	0 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE10	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m	No	Identified	Not Significant	N
Amphibian Breeding Habitat (Wetland) ABHWE11	- Perimeter fence - Solar panels - Area of Operational Flexibility	9 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE12	- Access roads - Area of Operational Flexibility	4 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE13	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Wetland) ABHWE14	- Perimeter fence - Solar panels - Area of Operational Flexibility	30 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Woodland) ABHWO1	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m	No	Identified	Significant	Y
Amphibian Breeding Habitat (Woodland) ABHWO2	- Perimeter fence - Solar panels - Access roads - Main HV substation	0 m	No	Identified	Significant	Y

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Amphibian Breeding Habitat (Woodland) ABHWO3	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV substation - Overhead cable - Area of Operational Flexibility 	10 m	No	Identified	Significant	Y
Amphibian Breeding Habitat (Woodland) ABHWO4	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	*Treated as Significant	Y
Amphibian Breeding Habitat (Woodland) ABHWO5	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	30 m	No	Identified	Significant	Y
<i>Habitat of Species of Conservation Concern</i>						
Marsh Breeding Bird Habitat MBBH1 (for Green Herons only)	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m	No	Identified	Not Significant	N
Marsh Breeding Bird Habitat MBBH2 (for Green Herons only)	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m	No	Identified	Not Significant	N
Marsh Breeding Bird Habitat MBBH3 (for Green Herons only)	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m	No	Identified	Not Significant	N
Marsh Breeding Bird Habitat MBBH4 (for Green Herons only)	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Marsh Breeding Bird Habitat MBBH5 (for Green Herons only)	<ul style="list-style-type: none"> - Perimeter fence - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Marsh Breeding Bird Habitat MBBH6 (for Green Herons only)	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Woodland Area-sensitive Bird Breeding Habitat ASBB1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	Significant	Y
American Gromwell AG1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
American Gromwell AG2	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	*Treated as Significant	Y
American Gromwell AG3	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Area of Operational Flexibility 	10 m	No	Identified	Not Significant	N
American Gromwell AG4	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access road 	8 m	No	Identified	Not Significant	N
American Gromwell AG5	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	Not Significant	N
American Gromwell AG6	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Hill's Pondweed HP1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	7 m	No	Identified	*Treated as Significant	Y

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Hill's Pondweed HP3	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m	No	Identified	*Treated as Significant	Y
Hill's Pondweed HP4	<ul style="list-style-type: none"> - Perimeter fence - Solar panel - Area of Operational Flexibility 	9 m	No	Identified	*Treated as Significant	Y
Hill's Pondweed HP5	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access road - Area of Operational Flexibility 	0 m	No	Identified	*Treated as Significant	Y
Hill's Pondweed HP6	<ul style="list-style-type: none"> - Access road - Area of Operational Flexibility 	0 m	No	Identified	*Treated as Significant	Y
Scarlet Beebalm SB1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	10 m	No	Identified	Not Significant	N
Scarlet Beebalm SB2	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	4 m	No	Identified	Not Significant	N
Scarlet Beebalm SB3	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	Not Significant	N
Scarlet Beebalm SB4	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV substation - Area of Operational Flexibility 	10 m	No	Identified	Not Significant	N
Scarlet Beebalm SB5	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	Not Significant	N
Scarlet Beebalm SB6	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Scarlet Beebalm SB8	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N

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Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Soft-hairy False Gromwell SHFG1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Soft-hairy False Gromwell SHFG2	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access road 	0 m	No	Identified	Not Significant	N
Soft-hairy False Gromwell SHFG3	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Soft-hairy False Gromwell SHFG4	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	*Treated as Significant	Y
Soft-hairy False Gromwell SHFG5	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m	No	Identified	*Treated as Significant	Y
Soft-hairy False Gromwell SHFG6	<ul style="list-style-type: none"> - Overhead cable - Area of Operational Flexibility 	10 m	No	Identified	Not Significant	N
Common Nighthawk CN1	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m	No	Identified	Not Significant	N
Common Nighthawk CN2	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Overhead cable - Area of Operational Flexibility 	0 m	No	Identified	Not Significant	N
Common Nighthawk CN3	<ul style="list-style-type: none"> - Overhead cable 	0 m	No	Identified	Not Significant	N
Common Nighthawk CN4	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	0 m	No	Identified	Not Significant	N
Common Nighthawk CN5	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access road - Area of Operational Flexibility 	2 m	No	Identified	Not Significant	N

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
Redheaded Woodpecker RHW1	- Perimeter fence - Solar panels - Access roads - Main HV substation	10 m	No	Identified	Significant	Y
Harlequin Darner HD1	- Perimeter fence - Solar panels	30 m	No	Identified	Not Significant	N
Harlequin Darner HD2	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	30 m	No	Identified	Not Significant	N
Harlequin Darner HD3	- Perimeter fence - Solar panels	20 m	No	Identified	Not Significant	N
Harlequin Darner HD4	- Overhead cable	18 m	No	Identified	Not Significant	N
Harlequin Darner HD5	- Overhead cable	0 m	No	Identified	*Treated as Significant	Y
Harlequin Darner HD6	- Perimeter fence - Solar panels - Overhead cable - Area of Operational Flexibility	49 m	No	Identified	Not Significant	N
Harlequin Darner HD7	- Perimeter fence - Solar panels - Access roads - Main HV substation	30 m	No	Identified	Not Significant	N
Harlequin Darner HD8	- Access road - Area of Operational Flexibility	4 m	No	Identified	Not Significant	N
Harlequin Darner HD9	- Perimeter fence - Solar panels - Access roads	30 m	No	Identified	Not Significant	N
Harlequin Darner HD10	- Overhead cable - Area of Operational Flexibility	0 m	No	Identified	*Treated as Significant	Y
Harlequin Darner HD11	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	22 m	No	Identified	Not Significant	N

Natural Feature	Applicable Project Component(s)	Distance Between Natural Feature and Project Location (m)	Summary of Natural Heritage Assessment			EIS Required?
			Identified During Records Review?	Identified, Verified or Refined During Site Investigation?	Evaluation of Significance Results	
<i>Animal Movement Corridors</i>						
Amphibian Movement Corridors	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter stations - Overhead distribution line - Main HV Substation 	0 m	No	Identified	*Treated as Significant	Y
<i>Generalized Candidate Significant Wildlife Habitat</i>						
Various habitats	Various	Various	No	Identified	Generalized	Y

5. ENVIRONMENTAL IMPACT STUDY PURPOSE

The completion of an *NHA EIS* report in accordance with procedures established by the MNRF, Subsection (1) of Section 38 (O. Reg. 359/09) may permit project components to be constructed and installed within 50 m of a significant or provincially significant feature. This report is consistent with Section 38 of O. Reg. 359/09, which details that an EIS report must include the following:

- Identification and assessment of negative environmental effects of the Project on a natural feature, provincial park or conservation reserve.
- Identification of mitigation measures in respect of negative environmental effects.
- Description of how the environmental effects mitigation and monitoring plan in the *Design and Operations Report* addresses negative environmental effects.
- Description of how the *Construction Plan Report* addresses negative environmental effects.

The focus of this EIS report will be to fulfill the requirements of Section 38 for the significant natural features identified in **Table 1** as being within 50 m of the Project Location.

6. RATIONALE FOR DEVELOPMENT WITHIN A SETBACK TO A NATURAL FEATURE

The location of the Project has been subject to numerous field investigations and a thorough review of constraints to development was undertaken prior to delineating the Project Location. Based on the natural environment information collected, the Project Location was refined to avoid impacts to significant natural heritage features, where possible. The layout of the Project has been developed to prioritize the protection of sensitive features and minimize environmental effects where possible.

Where Candidate Significant Wildlife Habitat has been generalized, there are development prohibitions applicable to defining the use of the “Area of Operational Flexibility”. In accordance, access roads will not be constructed or operated within 50 m of any habitats of plant Species of Conservation Concern or amphibian breeding habitat that has been generalized. Development is permitted within 50 m of all other habitats that are generalized within 50 m of the Project Location (Figure 7P of the *NHA Site Investigation*) without having to further assess the habitats, as described in Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF 2012).

7. PROJECT ACTIVITIES

The following subsections outline the Project activities during the construction, operations and decommissioning phases. **Table 2** outlines the anticipated duration of construction activities for this Project. It is expected that the Project will remain operational for a period of at least 20 years, after which time its value will be evaluated.

Table 2: Anticipated Duration of Construction Activities

Construction Activity	Estimated Timing
Site Preparation	Q1/2016-Q3/2016
Installation of solar components (structural supports, racking, modules, collection system)	Q1/2016-Q4/2016
Installation of Main HV substation and operations and maintenance building	Q2/2016-Q4/2016
Site Clean-up and restoration	Q3/2016-Q4/2016

7.1 Construction

It is anticipated that construction would last approximately 10-12 months. Pending receipt of all necessary approvals and permits, construction is tentatively scheduled to begin in early 2016. **Table 3** outlines the construction activities for the Project. Pre-construction activities at the Project Location include: geotechnical study, and archaeological and cultural heritage assessments.

Table 3: Construction Activities

Activity	Description
Survey and Staking of Project Location	Prior to the construction phase, the Project Location will be surveyed and staked to delineate the boundaries for fencing, access roads, excavations and foundation locations. Areas to be avoided will be fenced and/or flagged for public safety.
Clearing, ground levelling and grading	The Project Location will be minimally graded to facilitate construction activities based on a grading plan, and a preliminary Stormwater Management Report (see the <i>Design and Operations Report</i>) will be implemented to maintain the pre-construction off-site drainage patterns as much as possible. Selective vegetation clearing may be necessary. If necessary, a detailed design Stormwater Management Plan will be completed by the project contractor prior to the start of construction.

Activity	Description
Drainage and Erosion Control	<p>It is not anticipated that the construction of the Project will have a significant impact on stormwater peak flows at the Project Location. A detailed Stormwater Management Plan will be developed prior to construction to address any temporary and/or permanent systems to manage flow and protect natural features during construction and operations. This detailed plan will be consistent with the preliminary Stormwater Management Report documented as part of the <i>Design and Operations Report</i>. Temporary erosion and sediment control measures will be installed prior to and during site construction to protect natural features and other considerations identified in the NHA.</p>
Installation of the perimeter fence and Security Lighting	<p>Fencing will be installed for the duration of the project lifespan around the perimeter of the Project Location. The fence will be installed in accordance with the requirements of the Electrical Safety Authority (ESA) but is anticipated to be a chain-link fence with three strands of barbed wire on top. Alternatively, consideration will also be given to the installation of an anti-climb fence or predator-proof fencing to facilitate potential livestock (sheep) grazing during operations. Gated entrances will be installed at the site entrances. Temporary entrances may be in place during the construction phases. For security and maintenance purposes, lights may be installed near the entrance of the solar facility and task-specific lights will be provided as necessary.</p> <p>During construction, the site will be monitored by the supervising construction staff and if necessary, 24-hour on-site security will also be utilized. Lights will be installed near the main HV substation transformer and site entrances to the solar facility and task-specific lights will be installed where necessary.</p>
Construction of Access Roads and Installation of Temporary Power	<p>The main entrances to the solar facility will be located off Grey Road 9, Southgate Sideroad 41 and Southgate Road 22. Other existing internal access roads will be utilized. In addition, temporary and/or permanent gravel access roads will be constructed to facilitate installation and delivery of equipment as well as maintenance requirements during operations. These granular access roads will be approximately 6 m wide and constructed as appropriate for the Project Location and final engineering design. It is anticipated that geo-textile mats will be installed under all Project access roads to be constructed, to reduce the need for land rehabilitation during decommissioning.</p> <p>During the construction period, it is anticipated that on-site electricity will be obtained from the local distribution utility from nearby suitable distribution lines to provide the Project Location with auxiliary power as required to power equipment and for temporary construction offices, lighting and other purposes. If no distribution supply is available nearby, the requirements for an auxiliary generator will be determined once the layout of the solar facility is reviewed in detail.</p>

Activity	Description
Delineation of Temporary Storage and Construction Areas and Installation of Temporary Facilities	Temporary laydown and construction staging areas will be located within the defined Project Location, as shown on Figure 2 . However, pending the final design, any part of the Project Location may be used as temporary storage, which will be dependent on how construction will be staged. These areas will be used for the construction office trailers, portable washrooms, first aid stations, vehicle parking, construction equipment parking, storage sheds, truck unloading/loading, waste disposal pick-up areas, and equipment and material lay-down. After site grading (discussed above) a layer of granular material will be installed to provide an adequate base for construction vehicles, heavy equipment and material laydown. A small portion of the area may be retained to accommodate vehicle parking for maintenance personnel and equipment storage. Additional storage and/or staging areas may be placed in the area between the Project Location boundary and the final fence line (i.e., area of operational flexibility).
Construction of Foundations	Engineered foundations for the MV Stations, main HV substation transformer and the operations and maintenance building will be constructed. The types of foundations will be determined based on the final engineering design, but based on the preliminary geo-technical study, it is anticipated that conventional spread footings will be used.
Installation of Supports, Racking and PV Modules	The Project will consist of approximately 197,000 to 207,000 solar panels of between 290-305 watts (or higher), (DC) each. The panels will be aligned in rows 8 to 12 m apart and will be mounted on 28 – 36 degree fixed tilt ground mounting system. The types of foundations will be determined based on the final engineering design, but it is anticipated that helical screw foundations and/or steel driven piles will most likely be used.

Activity	Description
Installation of Wiring and Inverters/Transformers	<p>The electricity generated by the PV panels will be in the form of direct current (DC). Inverters will be required to convert the DC output of the PV cells into alternative current (AC) suitable for supplying the electrical grid. DC wiring mounted to the back side of the racks is connected to a combiner box.</p> <p>From the combiner box, the DC current will be transmitted below ground to one of up to 63 inverters configured to 793kW. The AC voltage created by the inverters will be “stepped-up” to 34.5 kV through the multiple MV stations. A MV Station houses multiple components, including inverters, and a MV transformer. Approximately 34 MV Stations will be required for the Project. Further details are provided in the <i>Noise Study Report</i>. The MV transformer consists of a three-phase high-voltage winding and two separate low-voltage windings each rated for 360 volts. It is anticipated that the inverter used will be an 800 kW model, or similar, and the MV Transformer used will be a 1600 KVA 34.5kV-360/360 V delta HV connection with an ungrounded wye low voltage connection.</p> <p>The AC electrical energy output from the MV Stations will be collected via underground cables and connected to the main HV substation transformer. At the substation, the voltage will be stepped up to 230 kV and connected to the IESO transmission grid.</p> <p>The underground cables will be installed in trenches by a cable trenching machine or dropped in trenches created by an excavator. A tape will be layered above the underground cabling system to serve as a marker, as per ESA standards.</p> <p>After all major construction activities are completed the components will be tested. If any problems or issues arise, remedial corrections and calibration of equipment will be made prior to start-up.</p>
Clean-up of Work Areas	<p>After all major construction activities are completed work areas will be returned to their pre-construction condition or similar. All construction-related waste and excess materials brought to the site will be removed and reused, recycled, or disposed of as applicable by a licensed contractor in accordance with provincial guidelines. Trucks will be used to remove all non-permanent equipment from the Project Location, along with any debris.</p>

Activity	Description
Site Landscaping and Vegetation	Site restoration and reclamation is planned for as much of the Project Location as possible, including along access roads. The restoration and reclamation strategy may include re-contouring of the land to natural drainage patterns (in accordance with a final design Stormwater Management Plan to be prepared prior to construction), management and replacement of subsoil (if applicable) and topsoil and re-vegetation. Disturbed areas may be seeded with a low-growing species such as clover, or allowed to re-vegetate naturally as needed, to help stabilize soil conditions, enhance soil structure and increase soil fertility. Alternatively, the grounds may potentially be grazed by livestock (sheep), thus the disturbed areas may be seeded with pasture grasses. This may occur during several phases of construction, including after grading activities are completed in areas where limited disturbance is anticipated for the remainder of the construction period.

Construction activities will be conducted by licensed contractors in accordance with required standards and codes and all activities will abide by local laws and requirements. Construction-related activities will be conducted within the Project Location boundary outlined in **Figure 2**. Testing and commissioning of the facility will occur over the last few weeks of construction. During construction, no hazardous materials, including fuel, oils or grease will be stored on site, although equipment may require their use. Disposal of hazardous wastes will only be required in the case of accidental spills and will follow the procedures outlined in the Spills Response Plan. Decisions on waste disposal or recycling during, and immediately after, construction will be made by the on-site contractor who will refer to the *Environmental Protection Act*.

7.2 Operations and Maintenance

The following activities, outlined in **Table 4**, are associated with the operation and maintenance of the solar facility. These activities will take place over the lifetime of the facility. Overall, few activities are associated with the operational phase of the Project. It will operate year round and generate electricity during daylight hours only and the amount of daily power generated will depend on weather conditions. The proposed solar facility will be monitored and managed remotely; therefore, minimal on-site activity is required for its daily operation and there will be no permanent on-site employees. Security and minor maintenance will be the only regular activities anticipated on-site.

Table 4: Operations and Maintenance Activities

Activity	Description
Monitoring and meter calibrations	The solar facility will be monitored remotely twenty-four hours a day off-site to ensure proper power output and to alert the operations staff to potential issues. Most issues can be remotely diagnosed so that the correct individual(s) can be dispatched to the solar facility to correct any problems or potentially corrected by permanent staff working out of the operations and maintenance building.
Routine periodic maintenance and inspection of project components	Site visits will occur as scheduled to visually inspect the solar facility and Project Location and ensure that the solar facility is in proper working order. Activities that will occur during these visits may include data collection, regular maintenance (as described below) and any necessary minor repairs such as replacement of weathered electrical components. Security visits may also occur periodically. Some of these activities may be undertaken by permanent staff working out of the operations and maintenance building. Transformers, inverters, panels and arrays will be visually inspected during scheduled visits.
Lighting	For security and maintenance purposes, lighting may be installed near the entrances of the solar facility and task-specific lights will be provided as necessary. These will be appropriately shielded or directed to avoid impacts to neighbours and will be inspected for burned/broken bulbs. Perimeter lighting is not anticipated. Regularly scheduled maintenance will occur.
Cleaning of panels	It is anticipated that the rain would generally be sufficient for cleaning the solar panels; however, depending on the quantity and frequency of rain at the Project Location, the modules may require periodic cleaning. If required, water trucks would bring water to the site. It is not anticipated that chemical detergents will be used to clean panels.
Periodic landscape maintenance	Short native vegetation may be planted once construction activities are complete. It will be necessary to maintain the land in such a way that vegetation does not shade or in other ways impact the solar panels. Regular scheduled maintenance will also occur to manage weed growth as required. There is also potential for maintenance of the vegetation by grazing livestock (sheep), however details of this will be determined during the detailed design stage. This will be done in consideration of any seasonal limitations outlined in the NHA. It is not anticipated that herbicides will be used to manage vegetation.
Major maintenance	Unforeseen, large repairs are not anticipated. Should major maintenance be required it will be performed using existing roads and site access points.
Third party inspections and testing	Activities will be carried out as required by the local utility and other governing bodies in addition to any regularly scheduled inspections and testing.

Activity	Description
Traffic	No major deliveries are anticipated for maintenance. Minimal vehicle traffic is associated with regular maintenance.
Drainage and erosion control	If necessary, stormwater runoff at the Project Location will be managed as per a Stormwater Management Plan to be developed by the appropriate contractor at the detailed design stage. This will be done with consideration to maintaining pre-construction drainage patterns and recommendations or limitations outlined in the <i>Natural Heritage Assessment</i> or <i>Water Reports</i> . Implemented measures will be inspected during routine maintenance reviews.
Waste	The operation of the system does not produce waste. All debris as a result of maintenance or cleaning will be removed from the site immediately by the contractor. An exception is sewage disposal from the washrooms and kitchen facilities, which will be directed to a septic tank designed to building code requirements.

During the operation phase, no hazardous materials will be stored on-site with the exception of oil for transformers. Such oil will be adequately contained and accompanied by a Spills Response Plan, which will be developed prior to the start of construction.

7.3 Decommissioning

Most of the materials used in a solar energy facility are reusable or recyclable, and some equipment may have manufacturer take-back and recycling requirements. Through the decommissioning phase of the Project, the site will be returned to a state similar to its pre-construction condition. Materials such as steel/aluminum from the racking and copper from the electrical infrastructure will be removed and recycled. The PV panels will be removed and either returned through manufacturers’ recycling protocols or refurbished and recycled where possible. Any remaining materials will be removed and disposed off-site at an appropriate location.

The following activities are associated with the decommissioning of the solar facility. These activities will take place approximately 20 years after commissioning. Decommissioning activities are expected to take between 6-9 months and will occur in the relative order in which they are presented below. More information is provided in the *Decommissioning Plan Report*:

- Disconnection and removal of above and below-ground wiring
- Removal of PV modules, steel/aluminum structures and electrical equipment
- Removal of foundations and any maintenance buildings or other structures
- Removal of access roads
- Topsoil replacement as necessary
- Site grading and rehabilitation as necessary
- Removal of waste from the Project Location

The final decision on waste disposal or recycling will be the responsibility of the on-site contractor who will refer to the *Environmental Protection Act*, or the applicable standards of the day before submitting a Generator Registration Report, or other applicable report, for each type of waste produced at the facility.

7.3.1 Site Restoration

Decommissioning activities are outlined in **Table 5**.

Table 5: Decommissioning Activities

Activity	Description
<i>Above-ground Structures</i>	
PV Arrays	<ul style="list-style-type: none"> • Disconnect all above ground wirings, cables and electrical interconnections. • Remove PV modules from racks and temporarily store on-site in delineated area before removal by truck to appropriate facility(ies). • Dismantle and remove all racks and support structures, including extraction of in-ground support structures (see below). Temporarily store on-site before removal by truck to recycling facility.
Medium Voltage (MV) Stations, Substation	<ul style="list-style-type: none"> • Disconnect and remove all electrical equipment. • Remove inverters and associated components including combiners, medium voltage transformers, medium voltage switch gear and transport off-site to appropriate facility. • Unbolt high voltage substation transformer and remove from the foundation with a crane and dismantle all other substation component and transport off-site to appropriate facility. • Remove concrete foundations for MV Stations and substation components (see below).
Access roads and other components	<ul style="list-style-type: none"> • Consult with landowners to determine if access roads should be left in place for their continued use. • If one or more access roads are removed after consultation with the landowners, the aggregate materials will be excavated by a backhoe/front-end loader, along with any underlying geotextile fabric. • All compacted areas will be tilled in a manner adequate to restore the sub-grade material to the proper density and depth, consistent with the surrounding fields. Clean, compatible sub-grade material, followed by topsoil will be applied as necessary. • Overhead lines and poles that are not owned by Hydro One Networks Inc. (HONI) will be removed along with associated equipment (isolation switches, fuses, metering) and holes will be filled in with clean fill or on-site fill, as appropriate. • Removal of the perimeter fencing, followed by removal of fence pole foundations.

Activity	Description
<i>Below-ground Structures</i>	
Underground cables	<ul style="list-style-type: none"> Underground electrical lines running between inverters and the substation will be removed.
Equipment foundations	<ul style="list-style-type: none"> The substation, MV Stations and steel racking for the solar modules will have foundations that require removal. These foundations will likely consist of steel piles but may also include concrete. Other underground infrastructure requiring removal may include concrete protective electrical structures. It is anticipated that structures will be fully removed from the ground and that the affected area shall be backfilled as necessary. In the event that a structure breaks during excavation, it is not anticipated that any waste materials will be left on-site with the possible exception of foundations or steel piles broken off below 1.2 metres in depth and/or disconnected underground electrical wires buried below 1 metre in depth. Waste concrete will be recycled off-site by a concrete recycler or crushed on-site and used as backfill material. All foundation materials will be removed from the site via truck and managed at appropriate facilities.

7.3.2 Managing Excess Materials and Waste

During the decommissioning phase a variety of excess materials and wastes will be generated (see **Table 3**). Most of the materials used in a solar facility are reusable or recyclable and some equipment may have manufacturer take-back and recycling requirements. Any remaining materials will be removed and disposed of off-site at an appropriate facility. Southgate Solar LP will maximize recycling and reuse and will work with manufacturers, local subcontractors and waste firms to segregate material to be disposed of, recycled and/or reused (see **Table 6**).

Southgate Solar LP will be responsible for the logistics of collecting and recycling the PV modules and to minimize the potential for modules to be discarded. Southgate Solar LP proposes to determine the best way of recycling the solar modules at the time of decommissioning based on best management practices.

Table 6: Managing Excess Materials and Waste

Material/Waste	Means of Managing Excess Materials and Waste
PV panels	If there is no possibility for reuse, the PV panels will either be returned to the manufacturer for appropriate recycling/disposal or will be transported to a facility where the glass, metal and semiconductor materials will be separated and recycled. Panels will be managed as per best management practices that may be in effect at the time of decommissioning.
Metal array mounting racks and steel supports	These materials will be recycled off-site at an approved facility.
Transformers and substation components	Oil from the transformers will be removed on-site to reduce the potential for spills and will be transported to an approved facility for disposal. The main HV substation transformer and step-up transformers at the MV Stations will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed of off-site in accordance with standards and best practices of the day.
Inverters, fans, fixtures	The metal components of the inverters, fans and fixtures will be recycled, where possible. Remaining components will be disposed of in accordance with the standards of the day.
Gravel (or other granular)	It is possible that the municipality may accept uncontaminated material without processing for use on local roads, however, for the purpose of this report it is assumed that the material will be removed from the Project Location by truck to a location where the aggregate can be processed for salvage. It will then be reused as fill for construction. In the unlikely event that the aggregate or portions of the aggregate is contaminated it will be transported to an MOECC-approved hazardous waste/disposal facility.
Geotextile fabric	It is assumed that during excavation of the aggregate, a large portion of the geotextile will be “picked up” and sorted out of the aggregate at the aggregate reprocessing site. Geotextile fabric that is remaining or large pieces that can be readily removed from the excavated aggregate will be disposed of off-site at an MOECC-approved disposal facility.
Concrete inverter/transformer foundations	Concrete foundations will be broken down and transported by certified and licensed contractor to a recycling or MOECC-approved disposal facility.
Cables and wiring	The electrical line that connects the substation to the Point of Common Coupling (PCC) will be disconnected and recycled, if possible, or disposed of at an approved facility. Support poles, if made of untreated wood, will be chipped for reuse. Associated electronic equipment (isolation switches, fuses, metering) will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with standards and best practices of the day.
Fencing	Fencing will be removed and recycled at a metal recycling facility.
Debris	Remaining debris on the site will be separated into recyclables/residual wastes and will be transported from the site and managed as appropriate.

Recyclable materials will be transported off-site by truck and managed at appropriate facilities in accordance with provincial waste management regulations. Residual waste materials for disposal will be removed by a licensed contractor and transported to an MOECC-approved facility. It is not anticipated that any waste materials will be left on-site with the possible exception of foundations or steel piles broken off below 1.2 metres in depth and/or disconnected underground electrical wires buried below 1 metre in depth. The final decision on waste disposal or recycling will be made by the on-site contractor who will refer to the standards of the day for waste generated at the facility. Given that methods of managing wastes and recyclables may change in the future, information in this report will be updated as necessary to conform to future local and provincial requirements.

8. EXISTING ENVIRONMENTAL CONDITIONS OF RELEVANT NATURAL FEATURES

Existing environmental conditions for the Project Location and surrounding areas were determined through the records review and site investigation, which comply with Section 25 and 26 of the REA process. Below, we provide a summary of the natural environment associated with the Project Location with a specific focus on natural features of significance that required an EIS. The function, composition, attributes and characteristics that make natural features significant, contribute to their persistence, may be sensitive to development and serve as a good indicator of negative environmental effects are described below.

8.1 Overview

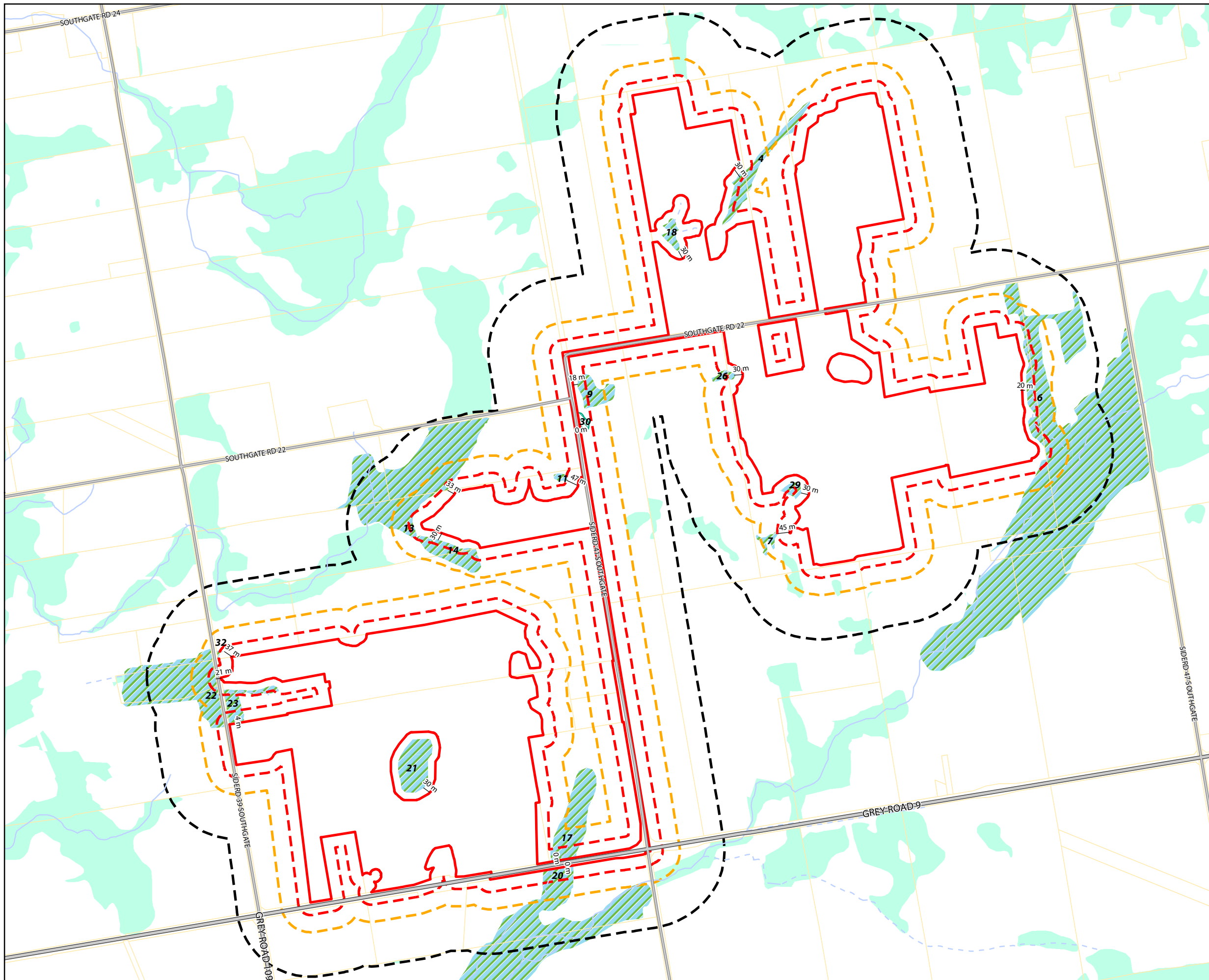
Through the records review, site investigation and evaluation of significance work, it was confirmed that the following natural features either did not occur in the Project Location or relevant adjacent lands or were not evaluated to be significant or provincially significant:

- Provincial Parks and Conservation Reserves
- ANSI, Life Science
- ANSI, Earth Science

8.2 Description of Significant Natural Features

8.2.1 Wetlands

The boundaries of southern wetland units in or within 50 m of the Project Location were delineated using the OWES protocol during the site investigation work and are shown on **Figure 3**. **Table 7** outlines the attributes, composition and function of each assumed significant wetland unit identified during the site investigation to be within 50 m of the Project Location and confirms if the wetland was included in the records review or was identified as a result of these site investigations. **Table 7** also outlines the project components that fall within 50 m of each assumed provincially significant wetland boundary. Characteristics that contribute to wetland persistence, may be sensitive to development and serve as a good indicator of negative environmental effects are described below in **Table 10**.



SOUTHGATE SOLAR PROJECT

**FIGURE 3
SIGNIFICANT WETLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Assumed Provincially Significant Wetland
- Dillon Delineated Wetland (Non-Provincially Significant)
- Unevaluated Wetland



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\EOS



PROJECT: 149154
STATUS: DRAFT
DATE: 12/4/2014

Table 7: Significant Southern Wetlands within the Project Location and Surrounding 50m

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
4	2.15 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.54 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland contains Swamp and Marsh. Wetland is comprised of 62% swamp and marsh type 38%. The OWES wetland types present are treed swamp with deciduous trees the dominant vegetation form, and marsh with narrow-leaved emergents the dominant vegetation form. The ELC communities present are Black Ash Mineral Deciduous Swamp (SWDM2-1) and Mixed Mineral Meadow Marsh (MAMM3-1) which are considered common vegetation communities in Ontario.	Palustrine. This palustrine wetland appears to be connected to wetland 25 through seasonal overland flow. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *H – <i>Fraxinus nigra</i> , <i>Tilia americana</i> , <i>Ulmus americana</i> Gc – <i>Matteuccia struthiopteris</i> , <i>Onoclea sensibilis</i> , <i>Athyrium filix-femina</i> var. <i>angustum</i> Ne – <i>Poa palustris</i> , <i>Carex vulpinoidea</i> , <i>Equisetum arvense</i> 2. Ls – <i>Cornus sericea</i> ssp. <i>sericea</i> , <i>Spiraea alba</i> var. <i>alba</i> *Ne – <i>Phalaris arundinacea</i>	32 m to Wetland Unit 25.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the Project Location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine and contains mineral silt soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Woodland Area-Sensitive Bird Breeding Habitat Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
6	39.7 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 1.84 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland consists of Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a treed swamp, with coniferous trees the dominant vegetation form. The ELC community present is Balsam Fir Hardwood Mixed Mineral Swamp (SWMM5-1) which is considered a common vegetation community in Ontario.	Palustrine. This palustrine wetland likely experiences seasonal overland drainage towards the watercourse that flows through it. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. H – <i>Betula alleghaniensis</i> var. <i>falax</i> , <i>Acer saccharinum</i> *C – <i>Abies balsamea</i> , <i>Thuja occidentalis</i> Gc – <i>Onoclea sensibilis</i> , <i>Matteuccia struthiopteris</i>	42 m to Wetland Unit 28	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1 . (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	This swamp contains a permanent watercourse. Shoreline vegetation is treed providing strong shoreline erosion control.	The wetland unit is palustrine and contains mineral silty sand soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	A permanent watercourse is present in this wetland that may provide spawning and migration/ staging habitat. This permanent watercourse is located outside of the 50 m setback and will not be impacted by the development of the Southgate Solar Project.
7	0.31 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.004 ha of the	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with narrow-leaved emergents the	Isolated. This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not	1. *Ne – <i>Phalaris arundinacea</i> , <i>Carex</i> sp. Be – <i>Iris versicolor</i> F – <i>Persicaria amphibia</i> var. <i>emersa</i>	36 m to wetland unit to south east.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part	Type 2. (5-25% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the	N/A – no shoreline is present in the wetland.	The wetland unit is isolated and contains mineral sandy soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	wetland unit occurs within 50 m of the Project Location.	dominant vegetation form. The ELC community present is Reed Canary Grass Mineral Shallow Marsh (MASM1-14) which is considered a common vegetation community in Ontario.	significantly change the inputs of water to or from the wetland unit.			of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	wetland unit's open water.	unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.		recharge groundwater will remain the same.	not expected to impact rare species.		
9	1.27 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.33 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with tall shrub the dominant vegetation form. The ELC community present is Willow Mineral Deciduous Thicket Swamp (SWTM3) which is considered a common vegetation community in Ontario.	Palustrine. This wetland appears to have seasonal overland flow connection to wetland 30. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Ts – <i>Salix</i> sp.	25 m to Wetland Unit 30.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
11	0.14 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.004 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with deciduous trees the dominant vegetation form. The ELC community present is Green Ash Mineral Deciduous Swamp (SWDM2-2) which is considered a common vegetation community in Ontario.	Isolated. This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly change the inputs of water to or from the wetland unit.	1. *H – <i>Fraxinus pennsylvanica</i> Ls – <i>Rubus sachalinensis</i> var. <i>sachalinensis</i> Gc – <i>Ranunculus acris</i> , <i>Impatiens capensis</i>	181 m to Wetland Unit 30.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is isolated, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Woodland Area-Sensitive Bird Breeding Habitat Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present.
13	12.22. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.23 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with coniferous trees the dominant vegetation form.	Palustrine. This palustrine wetland likely experiences seasonal overland drainage towards the watercourse that flows through it. The construction of the solar facility	1. H – <i>Fraxinus nigra</i> , <i>Acer rubrum</i> , <i>Betula alleghaniensis</i> var. <i>falax</i> *C – <i>Thuja occidentalis</i> , <i>Abies balsamea</i> Ts – <i>Sambucus canadensis</i> Gc – <i>Dryopteris cristata</i> , <i>Osmunda regalis</i> var.	6 m to Wetland Unit 14.	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not	This swamp contains a permanent watercourse. Shoreline vegetation is treed providing strong shoreline erosion control.	The wetland unit is palustrine with organic soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare	<ul style="list-style-type: none"> Woodland Area-Sensitive Bird Breeding Habitat Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	A permanent watercourse is present in this wetland that may provide spawning and migration/staging habitat. This permanent watercourse is located outside of the 50 m setback and will not be impacted by the

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
		The ELC communities present are White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) and White Cedar Hardwood Organic Mixed Swamp (SWMO1-1) which are considered common vegetation communities in Ontario.	will not significantly change the flow of water to or from the wetland unit.	<i>spectabilis, Caltha palustris, Impatiens capensis, Coptis trifolia</i> Ne – <i>Carex</i> sp. 2. H – <i>Acer rubrum, Fraxinus pennsylvanica, Populus tremuloides</i> *C – <i>Thuja occidentalis, Larix laricina, Tsuga canadensis, Abies balsamea</i> Gc – <i>Maianthemum canadense, Dryopteris cristata, Caltha palustris, Aralia nudicaulis, Thelypteris palustris var. pubescens</i>		wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.		peaks.	require input of chemicals to adjacent lands.			species.		development of the Southgate Solar Project.
14	1.73. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.55 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with coniferous trees the dominant vegetation form. The ELC community	Palustrine. This palustrine wetland likely experiences seasonal overland drainage towards the watercourse that flows through it. The construction of the solar facility will not	1. H – <i>Acer rubrum, Fraxinus pennsylvanica, Populus tremuloides</i> *C – <i>Thuja occidentalis, Larix laricina, Tsuga canadensis, Abies balsamea</i> Gc – <i>Maianthemum</i>	6 m to Wetland Unit 13.	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine and contains mineral sand soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Woodland Area-Sensitive Bird Breeding Habitat Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
		present is White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) which is considered a common vegetation community in Ontario.	significantly change the flow of water to or from the wetland unit.	<i>m canadense</i> , <i>Dryopteris cristata</i> , <i>Caltha palustris</i> , <i>Aralia nudicaulis</i> , <i>Thelypteris palustris var. pubescens</i>		interspersion value will persist with the development of the Southgate Solar Project.	wetland unit's open water.		chemicals to adjacent lands.					
17	3.54. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.54 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with deciduous trees the dominant vegetation form. The ELC community present is White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) which is considered a common vegetation community in Ontario.	Palustrine. This wetland likely has seasonal overland flow connection with Wetland 20. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *H – <i>Ulmus americana</i> , <i>Fraxinus pennsylvanica</i> , <i>Populus tremuloides</i> C – <i>Thuja occidentalis</i> Ts – <i>Salix bebbiana</i> Ne – <i>Phalaris arundinacea</i> , <i>Glyceria striata</i> Re – <i>Typha latifolia</i> Gc – <i>Onoclea sensibilis</i> , <i>Solanum dulcamara</i>	30 m to Wetland Unit 20.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/staging habitat is present

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
18	0.47. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.47 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with robust emergents the dominant vegetation form. The ELC community present is Cattail Graminoid Mineral Meadow Marsh (MAMM1-2) which is considered a common vegetation community in Ontario.	Palustrine. This wetland appears to receive water from ephemeral watercourse drainage. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Re – <i>Typha</i> sp. Ne – <i>Phalaris arundinacea</i>	120 m to Wetland Unit 25.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 2. (5-25% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
20	37.57. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.62 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with deciduous trees the dominant vegetation form. The ELC community present is White Cedar Hardwood Mineral Mixed Swamp (SWMM1-1) which is considered a common vegetation community in Ontario.	Palustrine. This wetland likely has seasonal overland flow connection with Wetland 17. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *H – <i>Ulmus americana</i> , <i>Fraxinus pennsylvanica</i> , <i>Populus tremuloides</i> C – <i>Thuja occidentalis</i> Ts – <i>Salix bebbiana</i> Ne – <i>Phalaris arundinacea</i> , <i>Glyceria striata</i> Re – <i>Typha latifolia</i> Gc – <i>Onoclea sensibilis</i> , <i>Solanum dulcamara</i>	30 m to Wetland Unit 17.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
21	2.3. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 2.3 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland contains Swamp and Marsh. Wetland is comprised of 70% swamp type and 30% marsh type. The OWES wetland types are swamp with deciduous trees the dominant vegetation form and marsh with narrow-leaved emergents the dominant form. The ELC communities present are Poplar Mineral Deciduous Swamp (SWDM4-5); Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3) which are considered common vegetation communities in Ontario.	Isolated. This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly change the inputs of water to or from the wetland unit.	1. *H – <i>Populus tremuloides</i> Dh – dead deciduous trees Ls – <i>Cornus sericea ssp. sericea</i> , <i>Rhamnus cathartica</i> Gc – <i>Onoclea sensibilis</i> , <i>Impatiens capensis</i> Ne – <i>Phalaris arundinacea</i> , <i>Equisetum arvense</i> , <i>Carex crinita</i> Ff – <i>Lemna minor</i> 2. Ts – <i>Salix eriocephala</i> , <i>Salix bebbiana</i> , <i>Salix petiolaris</i> *Ne – <i>Phalaris arundinacea</i> , <i>Scirpus cyperinus</i>	559 m to Wetland Unit 23.	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 5. (26-75% of wetland area occurring in an irregular pattern). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is isolated and contains mineral sand soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Turtle Nesting Area Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
22	2.22. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.35 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with coniferous trees the dominant vegetation form. The ELC community present is Tamarack Organic Coniferous Swamp (SWCO2-2) which is considered a common vegetation community in Ontario.	Palustrine This wetland likely has seasonal overland flow connection with Wetland 23. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *C – <i>Larix laricina</i> , <i>Thuja occidentalis</i> Gc – <i>Impatiens capensis</i> , <i>Caltha palustris</i> , <i>Rubus pubescens</i> Ne – <i>Phalaris arundinacea</i> , <i>Carex flava</i> , <i>Carex vulpinoidea</i>	19 m to Wetland Unit 23.	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine and contains organic soils, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
23	1.15. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.71 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland contains Swamp and Marsh. Wetland is comprised of 68% swamp type and of 32% marsh type. The OWES wetland types are swamp dominated by coniferous trees and marsh dominated by narrow-leaved emergents. The ELC communities for the wetland unit are White Cedar Hardwood Organic Mixed Swamp (SWMO1-1); Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3) which are considered common vegetation communities in Ontario.	Palustrine. This wetland likely has seasonal overland flow connection with Wetland 22. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. H – <i>Acer rubrum</i> , <i>Betula alleghaniensis</i> var. <i>falax</i> *C – <i>Thuja occidentalis</i> , <i>Picea glauca</i> , <i>Tsuga canadensis</i> Gc – <i>Impatiens capensis</i> , <i>Caltha palustris</i> , <i>Mitella nuda</i> , <i>Aralia nudicaulis</i> 2. *Ne – <i>Phalaris arundinacea</i>	19 m to Wetland Unit 22.	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 2. (5-25% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine and contains organic soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

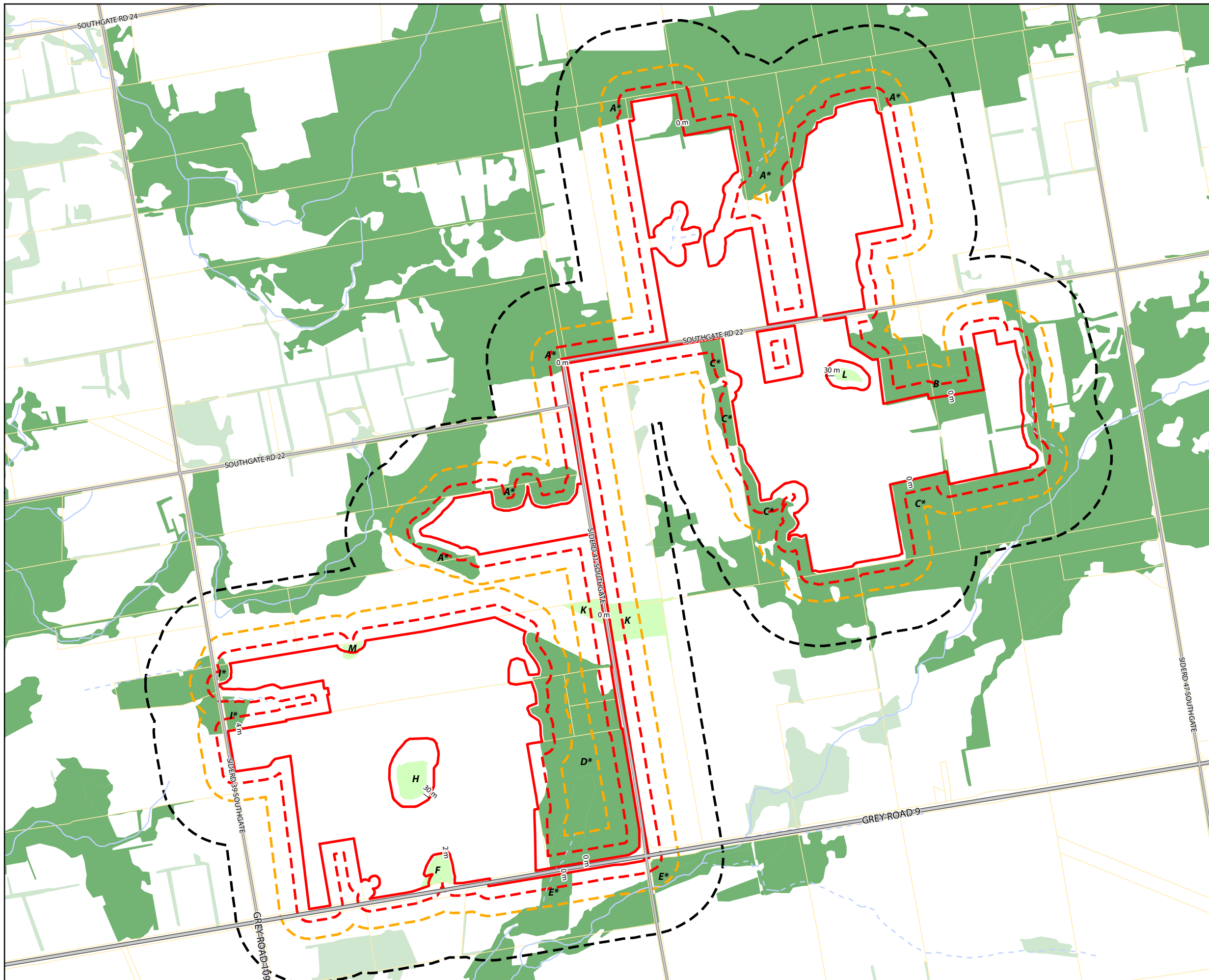
Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
26	0.25 Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.13 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with robust emergents the dominant vegetation form. The ELC community present is Cattail Graminoid Mineral Meadow Marsh (MAMM1-2) which is considered a common vegetation community in Ontario.	Isolated. This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly change the inputs of water to or from the wetland unit.	1. Ne – <i>Phalaris arundinacea</i> , <i>Carex</i> sp. Be – <i>Caltha palustris</i> *Re – <i>Typha latifolia</i>	308 m to wetland unit to south west.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is isolated and contains mineral silt soils, meaning the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.
29	0.32. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.24 ha of the wetland unit occurs within 50 m of the Project	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with robust emergents the dominant	Isolated. This isolated wetland likely receives water from ground water inputs, as well as precipitation. The construction of the solar facility will not significantly	1. Ne – <i>Phalaris arundinacea</i> , <i>Carex</i> sp. *Re – <i>Typha latifolia</i> Ff – <i>Lemna minor</i>	150 m to Wetland Unit 7.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The	N/A – no shoreline is present in the wetland.	The wetland unit is isolated, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
	Location.	vegetation form. The ELC community present is Cattail Mineral Shallow Marsh (MASM1-1) which is considered a common vegetation community in Ontario.	change the inputs of water to or from the wetland unit.			wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	open water.	peaks. Due to its isolated nature this wetland unit will provide maximum attenuation benefits.	solar facility will not require input of chemicals to adjacent lands.			species.		
30	0.22. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.22 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Swamp. Wetland is comprised of 100% swamp type. The OWES wetland type is a swamp with tall shrub the dominant vegetation form. The ELC community present is Willow Mineral Deciduous Thicket Swamp (SWTM3) which is considered a common vegetation community in Ontario.	Palustrine. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Ts – <i>Salix</i> sp.	25 m to Wetland Unit 9.	Interspersion count of 218 intersections. The interspersion value used was for wetlands in the entire 5117 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 4. (26-75% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 5117 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

Wetland ID Number	Wetland Size (ha)	Wetland Type	Site Type	Vegetation Communities (* denotes dominant vegetation form)	Proximity to Other Wetlands	Interspersion	Open Water Type	Flood Attenuation	Water Quality Improvement	Shoreline Erosion Control	Groundwater Recharge	Species Rarity	Significant Features and Habitat	Fish Habitat
32	0.04. Wetland boundaries were delineated during fieldwork and it was found that the wetland does not occur within project location. 0.01 ha of the wetland unit occurs within 50 m of the Project Location.	Wetland is Marsh. Wetland is comprised of 100% marsh type. The OWES wetland type is a marsh with narrow-leaved emergent the dominant vegetation form. The ELC community present is Reed Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3) which is considered a common vegetation community in Ontario.	Palustrine. This wetland may have seasonal overland flow connection with Wetlands 22 and 23. The construction of the solar facility will not significantly change the flow of water to or from the wetland unit.	1. *Ne - <i>Phalaris arundinacea</i>	20 m to Wetland Unit 22.	Interspersion count of 118 intersections. The interspersion value used was for wetlands in the entire 689 ha catchment this wetland unit is part of, which form a wetland complex. This interspersion value will persist with the development of the Southgate Solar Project.	Type 1. (less than 5% of wetland area). The construction of a solar facility on adjacent lands will not decrease or increase the value of the wetland unit's open water.	Wetland unit is small in comparison to its upstream catchment area of 689 ha, which was determined using topographic and drainage mapping. Since no part of the wetland unit will be removed the unit will still attenuate flood peaks.	Catchment area determined to be >50% agricultural (cropland, hayfield and pasture). The quality of water entering the wetland unit adjacent to the project location should remain unchanged or improved with the development of a solar facility. The solar facility will not require input of chemicals to adjacent lands.	N/A – no shoreline is present in the wetland.	The wetland unit is palustrine, as such the unit may be valuable as a source of groundwater recharge. Since there will be no change to the wetland, the unit's ability to recharge groundwater will remain the same.	No rare species were observed in this wetland unit. Common Snapping Turtle was observed in the general larger study area. The development of the Southgate Solar Project is not expected to impact rare species.	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland) Generalized Candidate Significant Wildlife Habitat 	N/A – no fish spawning or migration/ staging habitat is present.

8.2.2 Woodlands

The boundaries of woodland units in or within 50 m of the Project Location were delineated using ELC protocol during the site investigation work and shown on **Figure 4**. **Table 8** outlines the attributes, composition and function of each significant woodland unit identified during the site investigation to be within 50 m of the amended project location and confirms if the woodland was included in the records review or was identified as a result of these site investigations. **Table 8** also outlines the project components that fall within each significant woodland boundary and/or within 50 m. Characteristics that contribute to woodland persistence, may be sensitive to development and serve as a good indicator of negative environmental effects are described below in **Table 10**.



SOUTHGATE SOLAR PROJECT

**FIGURE 4
SIGNIFICANT WOODLANDS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Parcel Boundary
- Significant Woodland
- Dillon Delineated Woodland (Non-Significant)
- Unevaluated Woodland

Note: * indicates woodland was also evaluated as significant in the Grey County Official Plan



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Table 8: Significant Woodlands within the Project Location and Surrounding 50 m

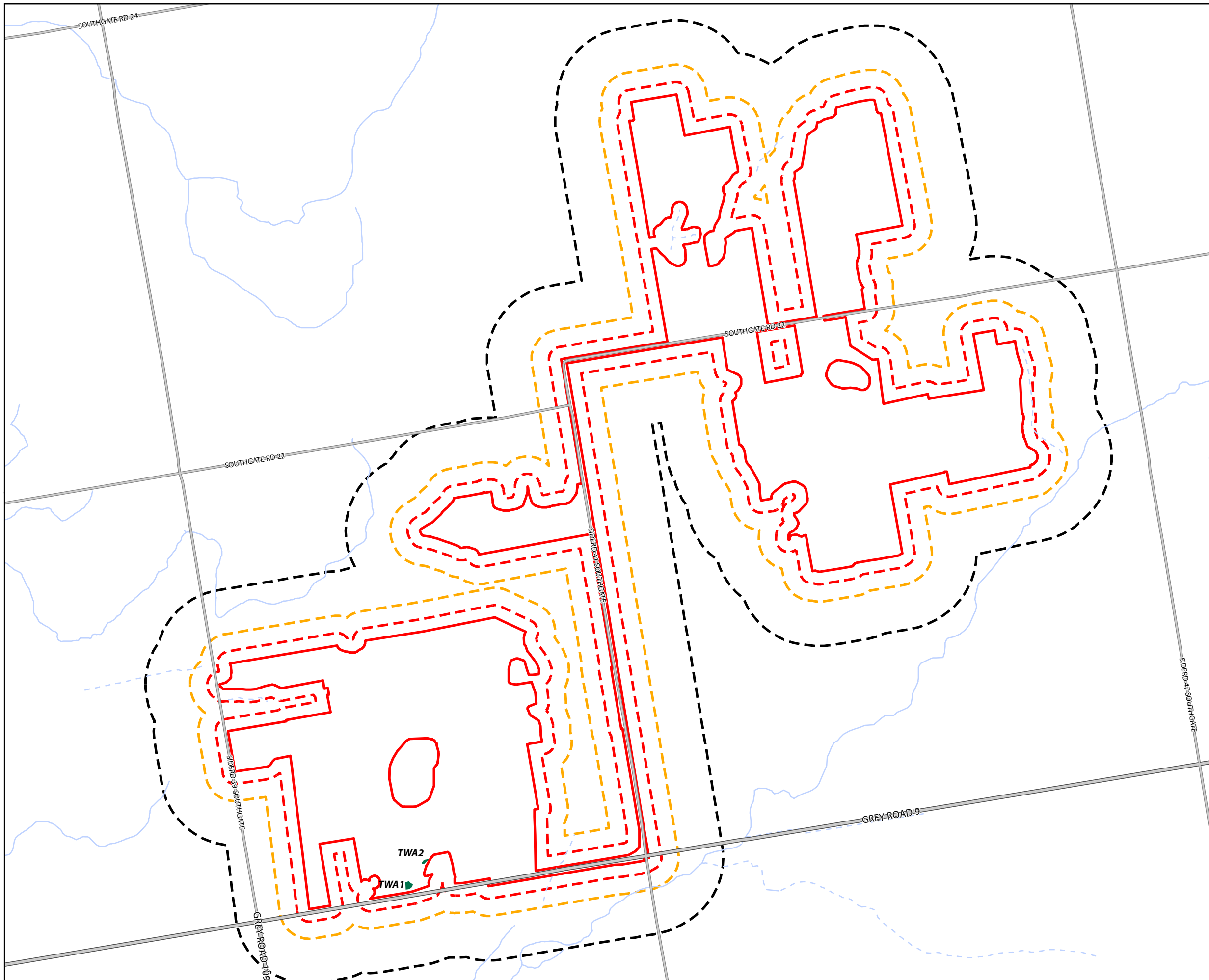
Woodland ID	Size Criterion	Ecological Function Criteria				Woodland Uncommon Characteristics (0.5 – 4 ha)	Project Components within 50 m	
	Woodland Size (ha) (≥4050 ha)	Woodland Interior (ha) (8 ha)	Proximity to Other Significant Woodlands (≥30 m) or Habitats (10 ha)	Linkages (10 ha)	Water Protection (4 ha)			Woodland Diversity Representation (10 ha)
A	409.48	102.41	<ul style="list-style-type: none"> Woodland Area- sensitive Bird Breeding Habitat Red-Headed Woodpecker Habitat American Gromwell Habitat* Generalized Candidate Significant Wildlife Habitat 	Woodland A is large and provides direct connectivity to other woodland to the east and west within Grey County.	Woodland contains an ephemeral watercourse within a wetland and has other mapped watercourses traversing the feature	Identified as Fresh-Moist Sugar Maple Deciduous (FODM6-5); Dry-Fresh Sugar Maple- Black Cherry Deciduous (FODM5-7); Coniferous Plantation (TAGM1); Black Ash Deciduous Swamp (SWDM2-1). Dominant canopy species include Sugar Maple (<i>Acer saccharum</i>), White Pine (<i>Pinus strobus</i>) and Black Ash (<i>Fraxinus nigra</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Inverter station Main HV substation Overhead cable Area of Operational Flexibility
B	12.59	0.34	<ul style="list-style-type: none"> Woodland is within 30 m of another significant woodland (Woodland C). 	Woodland is not between two other significant features within 120 m.	Woodland does not contain any notable surface water and is not identified as a source water protection area.	Identified as Dry-Fresh White Pine Naturalized Coniferous (FOCM6-1); Dry-Fresh Deciduous Woodland (WODM4). Dominant canopy species include White Pine, Sugar Maple and Manitoba Maple (<i>Acer negundo</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Inverter station Area of Operational Flexibility
C	584.53	83.20	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland) Western Chorus Frog was heard in a wetland unit within this woodland (an unnumbered wetland unit outside of 50 m setback). Generalized Candidate Significant Wildlife Habitat 	Woodland C is large and is connected to other woodlots to the southwest and north east via a watercourse.	Woodland contains several wetland units with standing water and a permanent watercourse flows through its southeast corner.	Identified as Dry-Fresh Sugar Maple Deciduous (FODM5-1); Dry-Fresh Sugar Maple Hardwood Deciduous (FODM5-9); Balsam Fir Hardwood Mixed Mineral (SWMM5-1); and Dry-Fresh Deciduous Woodland (WODM4). Dominant canopy species include Sugar Maple and Balsam Fir (<i>Abies balsamea</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Inverter station Area of Operational Flexibility
D	28.49	7.95	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Woodland)* Soft-hairy False Gromwell Habitat* Harlequin Darner Habitat* Generalized Candidate Significant Wildlife Habitat 	Woodlot D is within 120 m of various wildlife habitat treated as significant in this NHA. It likely provides a linkage function in the landscape and meets this criterion	Woodland does not contain any notable surface water and is not identified as a source water protection area.	Identified as Fresh-Moist Sugar Maple Hardwood Deciduous (FODM6-5); and White Cedar Hardwood Mixed Mineral (SWMM1-1). Dominant canopy species include Sugar Maple and Eastern White Cedar (<i>Thuja occidentalis</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Perimeter fence Solar panels Access roads Area of Operational Flexibility
E	34.52	0	<ul style="list-style-type: none"> Amphibian Breeding Habitat (Wetland)* Harlequin Darner Habitat* Generalized Candidate Significant Wildlife Habitat 	Woodland E is large and is connected to other woodlands to the southwest and north east via a watercourse.	Woodland contains a permanent watercourse.	Identified as Mixed Swamp (SWM); and White Cedar Hardwood Mixed Mineral (SWMM1-1). Dominant canopy species include Eastern White Cedar and White Elm (<i>Ulmus americana</i>).	No uncommon characteristics.	<ul style="list-style-type: none"> Overhead cable Area of Operational Flexibility

Woodland ID	Size Criterion	Ecological Function Criteria					Woodland Uncommon Characteristics (0.5 – 4 ha)	Project Components within 50 m
	Woodland Size (ha) (≥4050 ha)	Woodland Interior (ha) (8 ha)	Proximity to Other Significant Woodlands (≥30 m) or Habitats (10 ha)	Linkages (10 ha)	Water Protection (4 ha)	Woodland Diversity Representation (10 ha)		
I	7.75	0	Woodland is greater than 30 m from any other woodland.	Woodland does not contain any linkages.	Woodland has an intermittent watercourse associated with it that may contribute to fish habitat. The watercourse is fed by a groundwater seep.	Identified as White Cedar Hardwood Organic Mixed Swamp (SWMO1-1) Dominant canopy species include Eastern White Cedar and Yellow Birch (<i>Betula alleghaniensis var. falax</i>).	No uncommon characteristics.	- Area of Operational Flexibility

8.2.3 Wildlife Habitat

The occurrence and boundaries of significant wildlife habitat in or within 50 m of the Project Location were delineated using information collected during the site investigation (e.g. ELC, observation of suitable site characteristics, etc.) and evaluation of significance (e.g., area search surveys, etc.) following criteria outlined in the Significant Wildlife Habitat Technical Guide (MNRF 2000) and Ecoregion 6E Criteria Schedule (MNRF 2012). Wildlife habitats requiring inclusion in this *NHA EIS* are shown in **Figures 5A- 5J**.

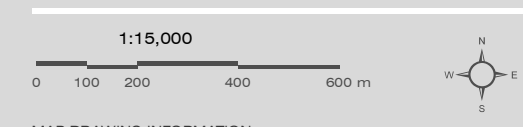
Table 9 outlines the attributes, composition and function of each identified significant/ treated as significant wildlife habitat and the distance of Project components that fall within 50 m of each wildlife habitat boundary. Characteristics that contribute to wildlife habitat persistence, may be sensitive to development and serve as a good indicator of negative environmental effects are described below in **Table 10**. For “Generalized Candidate Significant Wildlife Habitat” outlined in the *NHA Site Investigation Report*, general mitigation measures proposed in **Table 12** will address effects due to construction activities only. Habitats treated as significant, on lands in which access has been granted, will be evaluated pre-construction following the methodology outlined in **Appendix A**.



SOUTHGATE SOLAR PROJECT

**FIGURE 5A
SIGNIFICANT WILDLIFE HABITAT
TURTLE WINTERING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Turtle Wintering Area



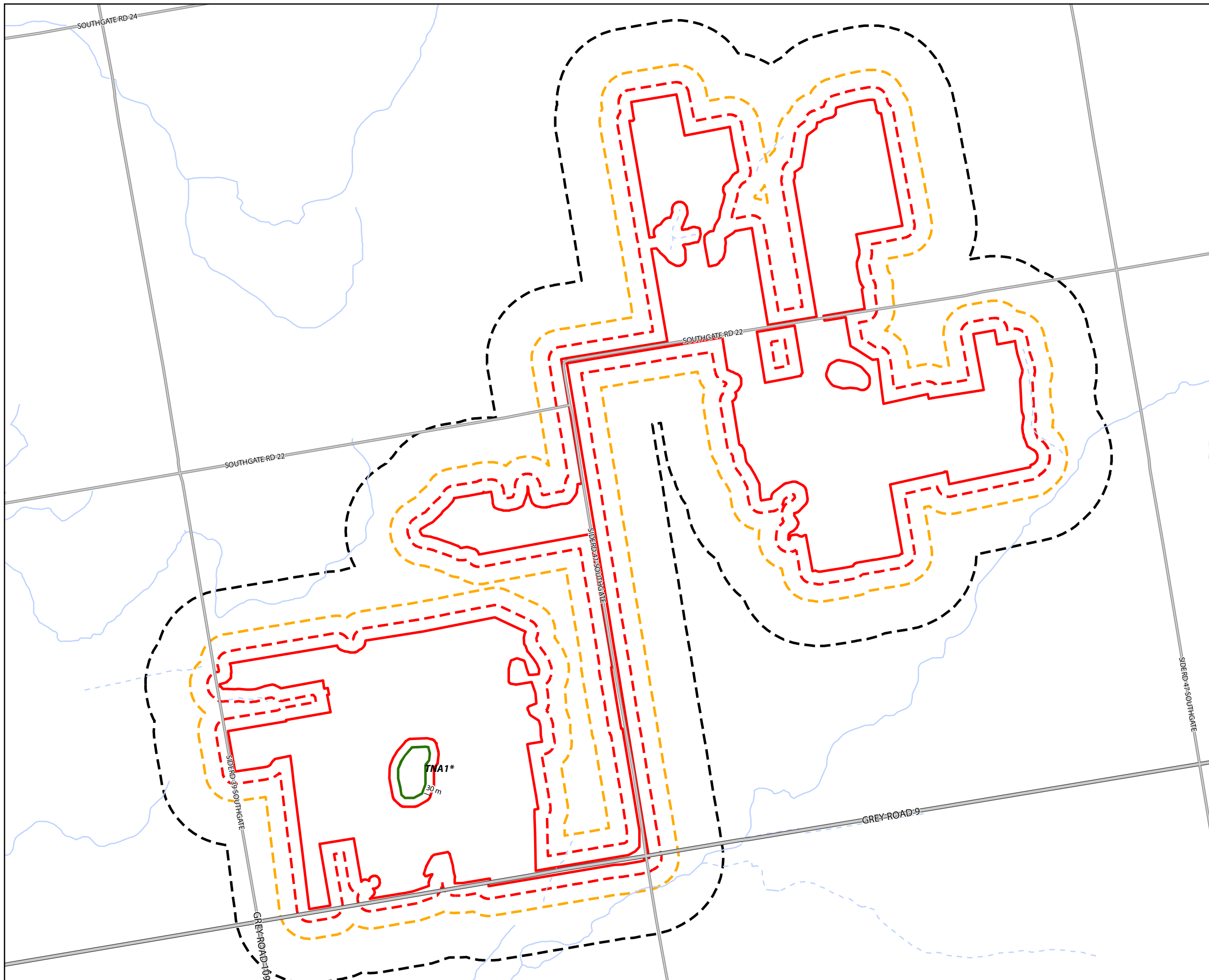
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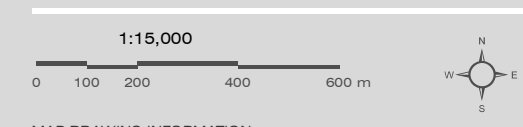
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SOUTHGATE SOLAR PROJECT

**FIGURE 5B
SIGNIFICANT WILDLIFE HABITAT
TURTLE NESTING AREAS**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Turtle Nesting Area



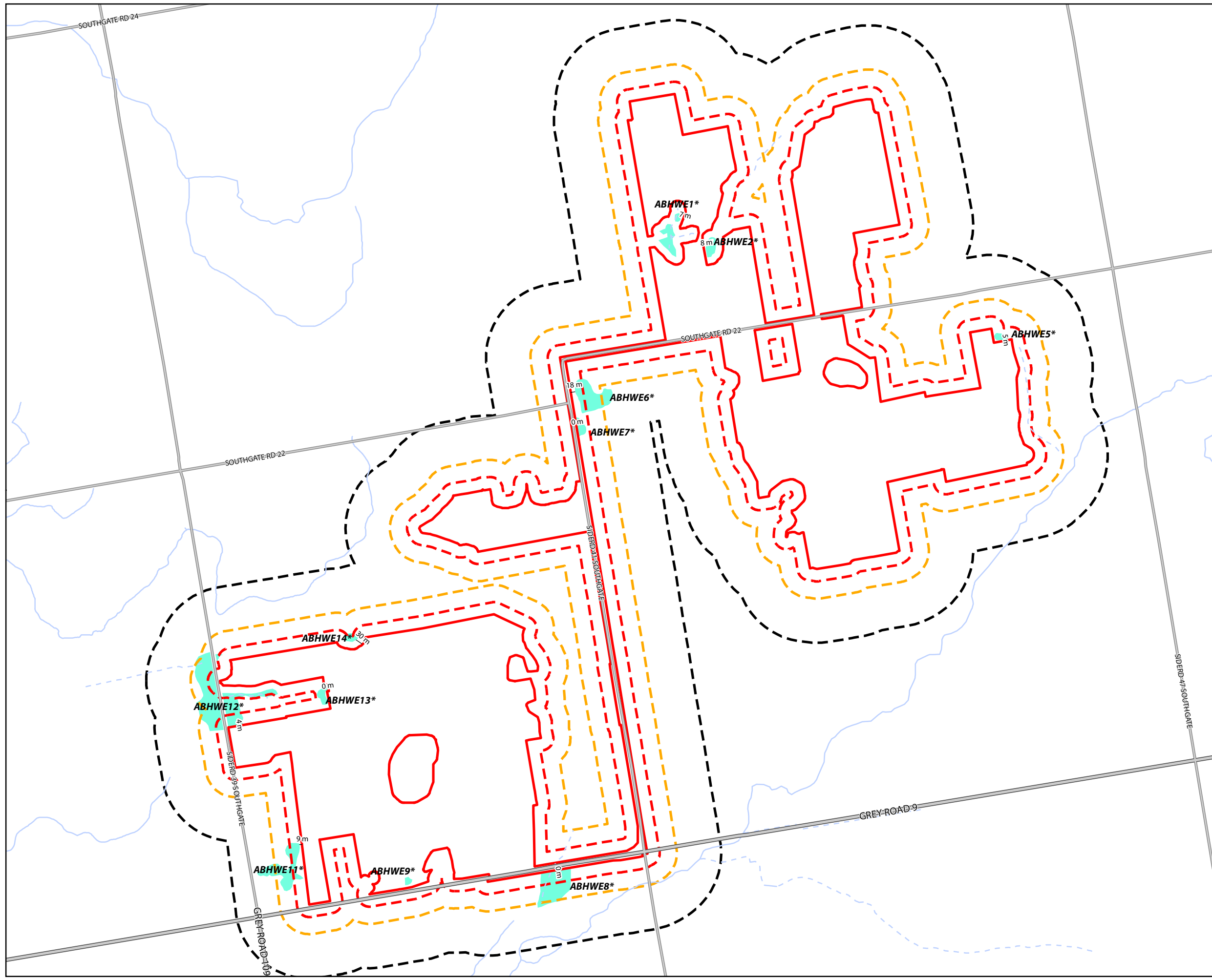
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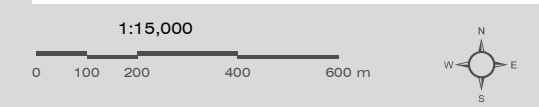
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SOUTHGATE SOLAR PROJECT

**FIGURE 5C
SIGNIFICANT WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WETLAND)**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Amphibian Breeding Habitat (Wetland)



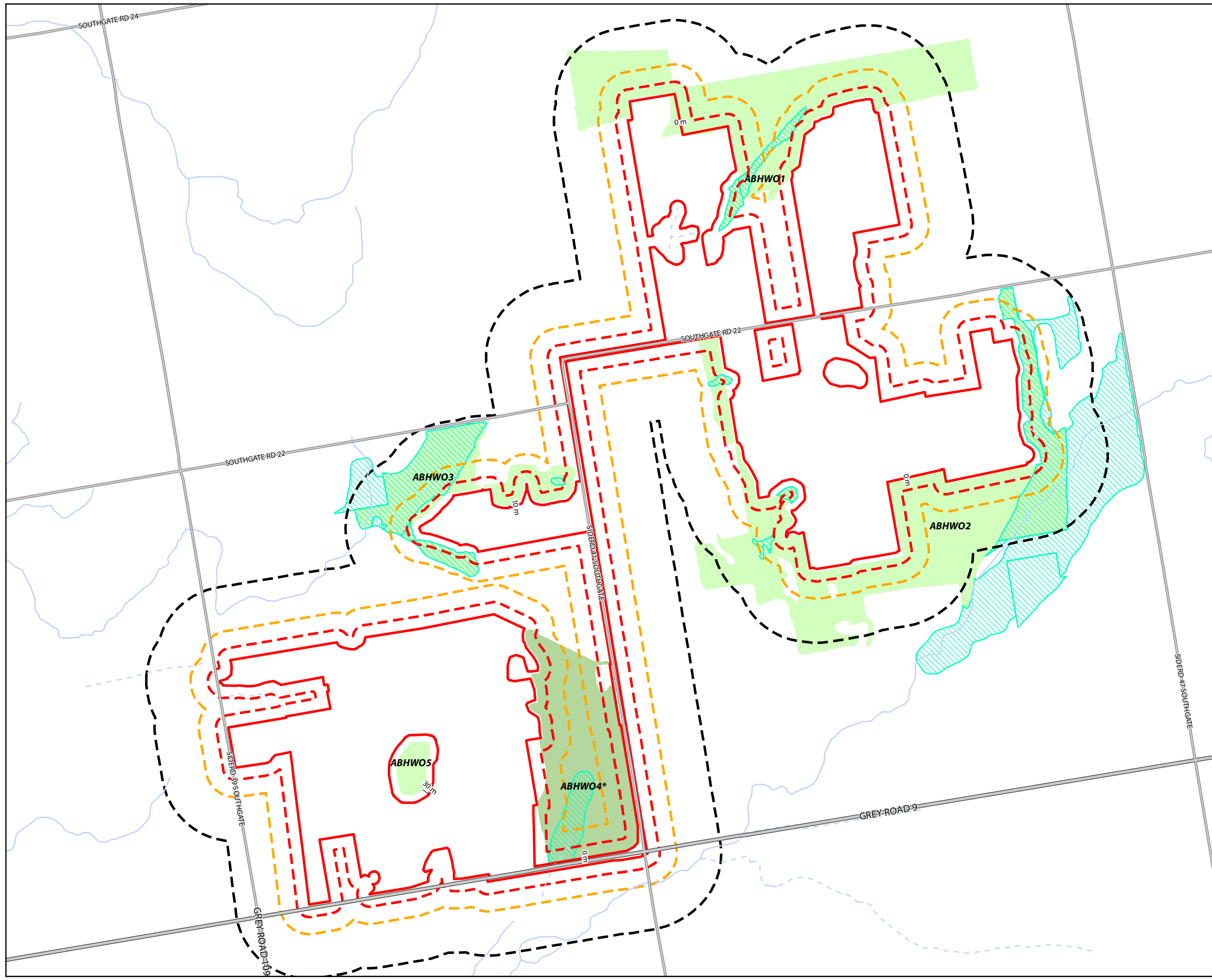
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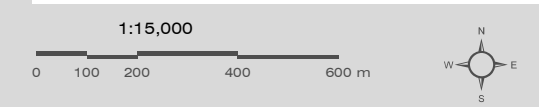
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SOUTHGATE SOLAR PROJECT

**FIGURE 5D
SIGNIFICANT WILDLIFE HABITAT
AMPHIBIAN BREEDING HABITAT
(WOODLAND)**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Assumed Provincially Significant Wetland
- Significant Amphibian Breeding Habitat (Woodland)
- *Treated as Significant Amphibian Breeding Habitat (Woodland)



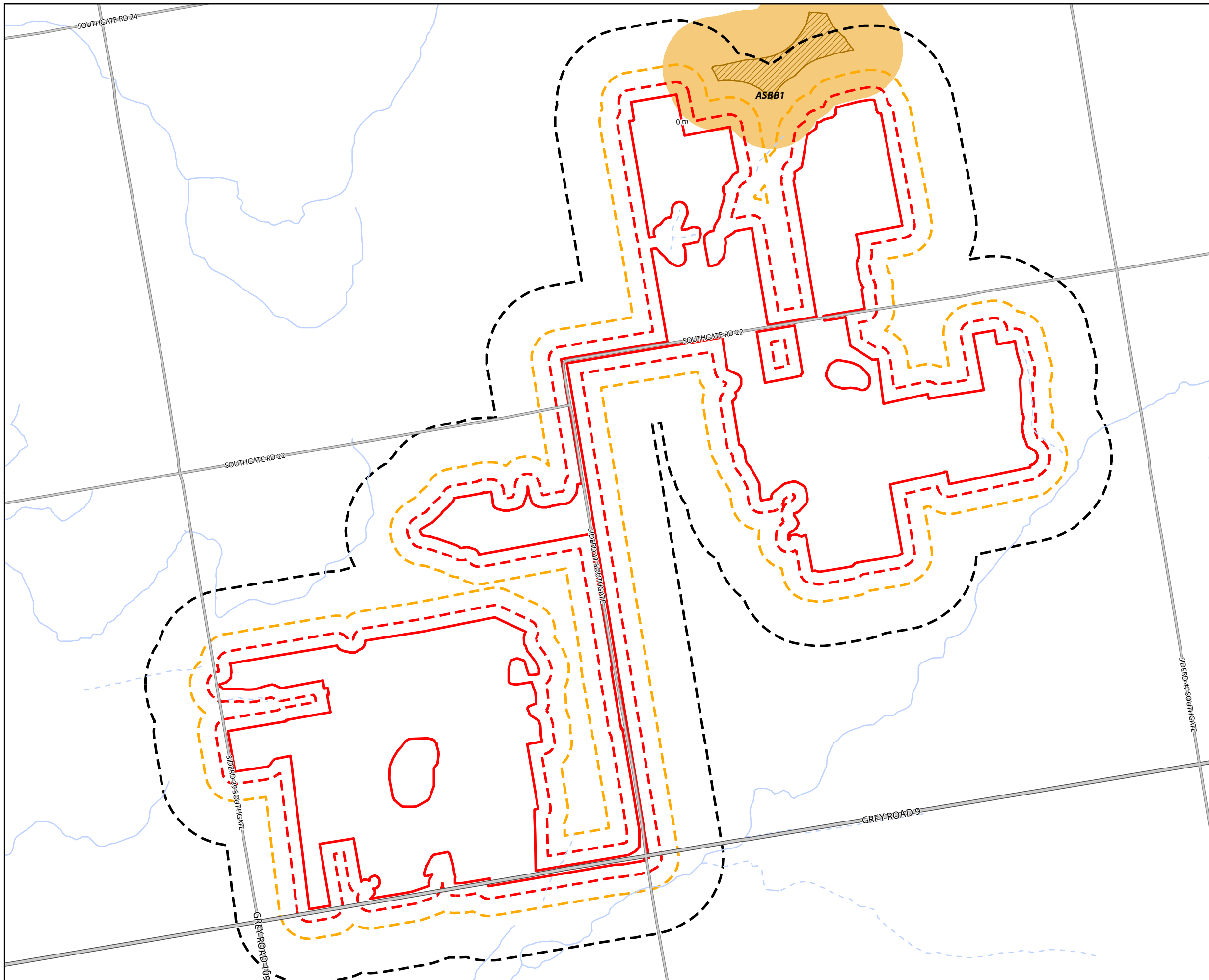
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SOUTHGATE SOLAR PROJECT

**FIGURE 5E
SIGNIFICANT WILDLIFE HABITAT
WOODLAND AREA-SENSITIVE
BIRD BREEDING HABITAT**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- 200 m Woodland Interior
- Woodland Area-Sensitive Bird Breeding Habitat



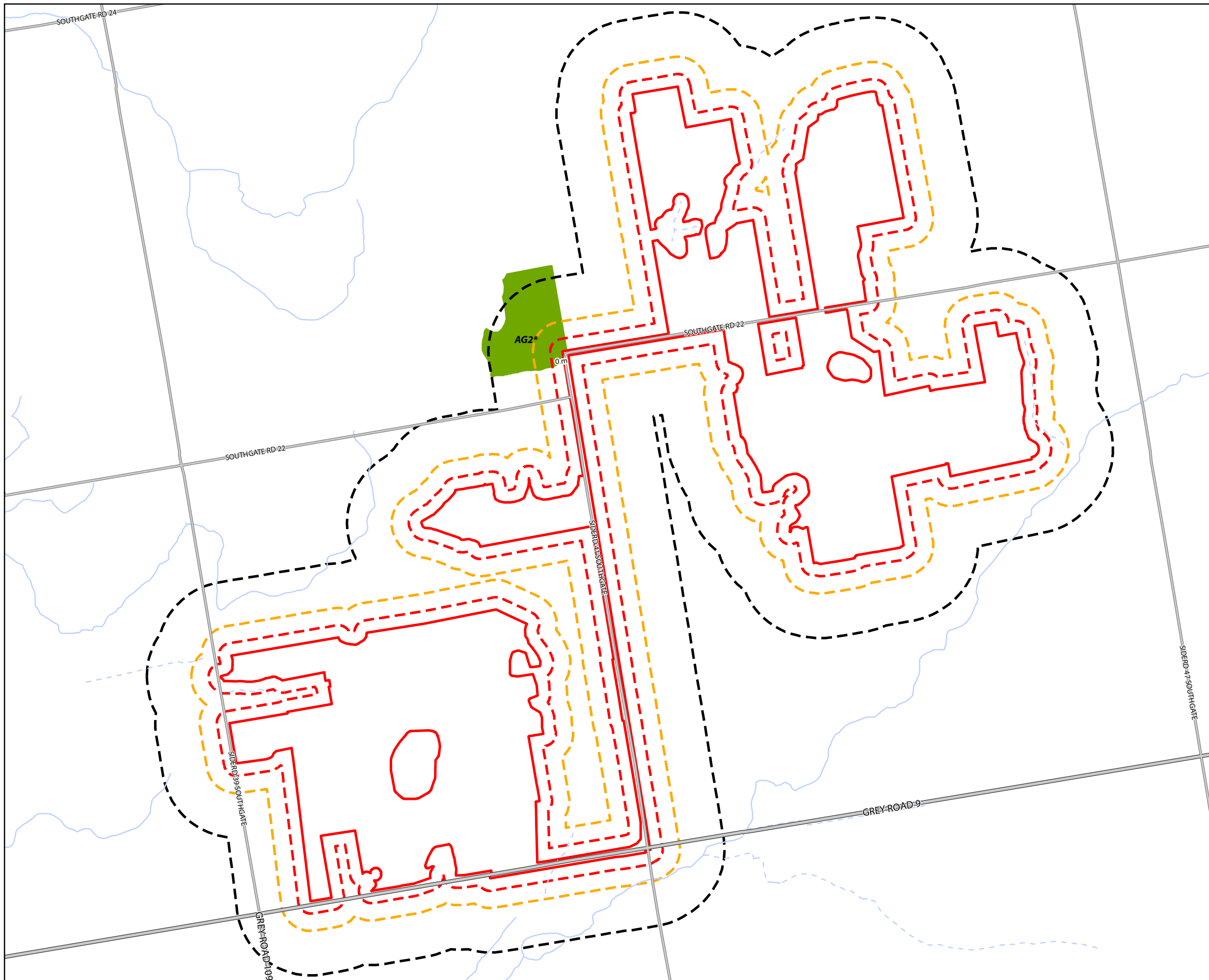
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SOUTHGATE SOLAR PROJECT

**FIGURE 5F
SIGNIFICANT WILDLIFE HABITAT
AMERICAN GROMWELL**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant American Gromwell



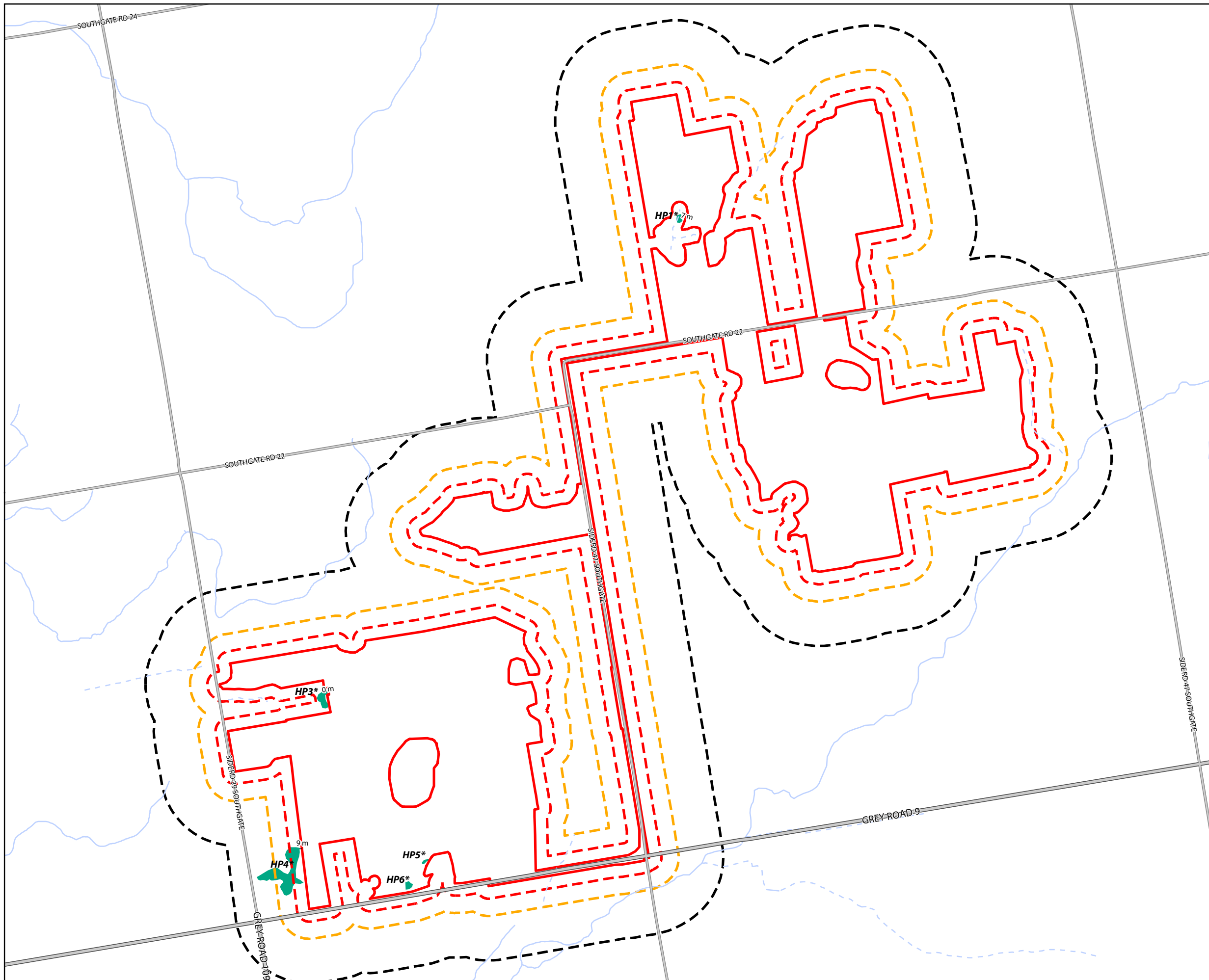
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SOUTHGATE SOLAR PROJECT

**FIGURE 5G
SIGNIFICANT WILDLIFE HABITAT
HILL'S PONDWEED**

- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Hill's Pondweed



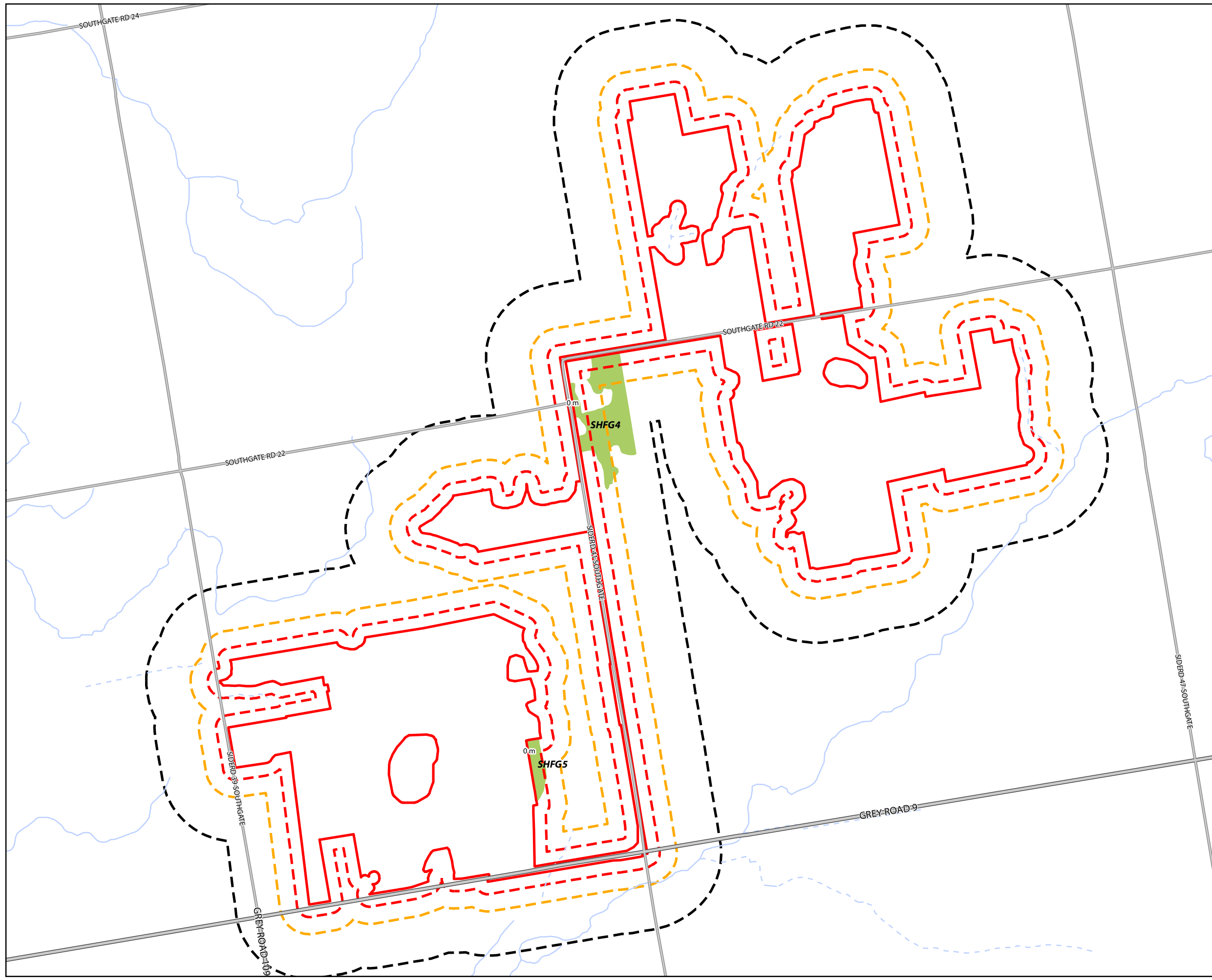
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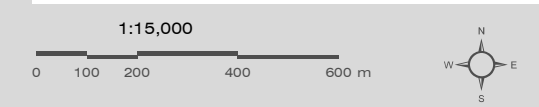
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SOUTHGATE SOLAR PROJECT

**FIGURE 5H
SIGNIFICANT WILDLIFE HABITAT
SOFT-HAIRY FALSE GROMWELL**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Soft-Hairy False Gromwell



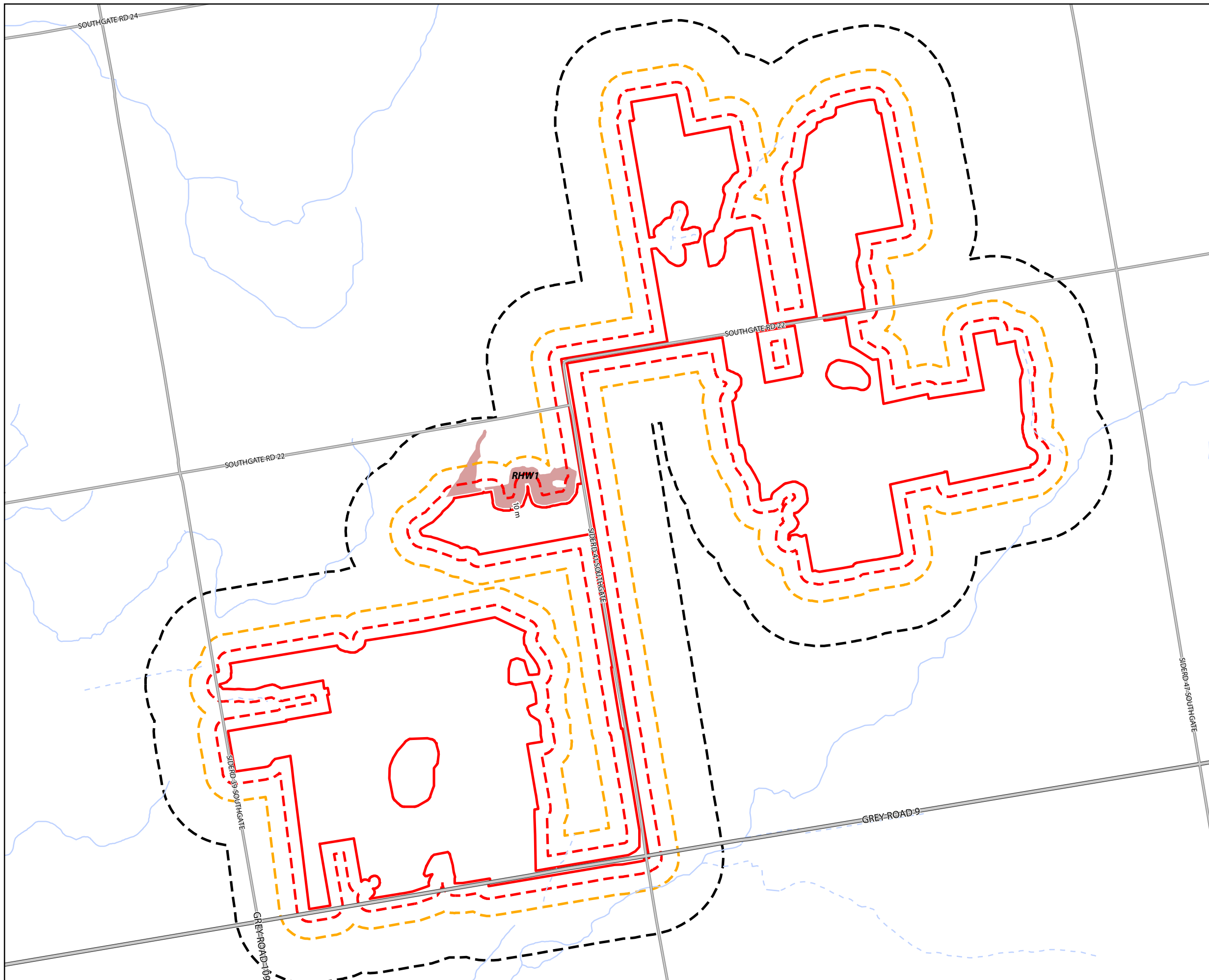
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SOUTHGATE SOLAR PROJECT

**FIGURE 51
SIGNIFICANT WILDLIFE HABITAT
RED-HEADED WOODPECKER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Significant Red-Headed Woodpecker



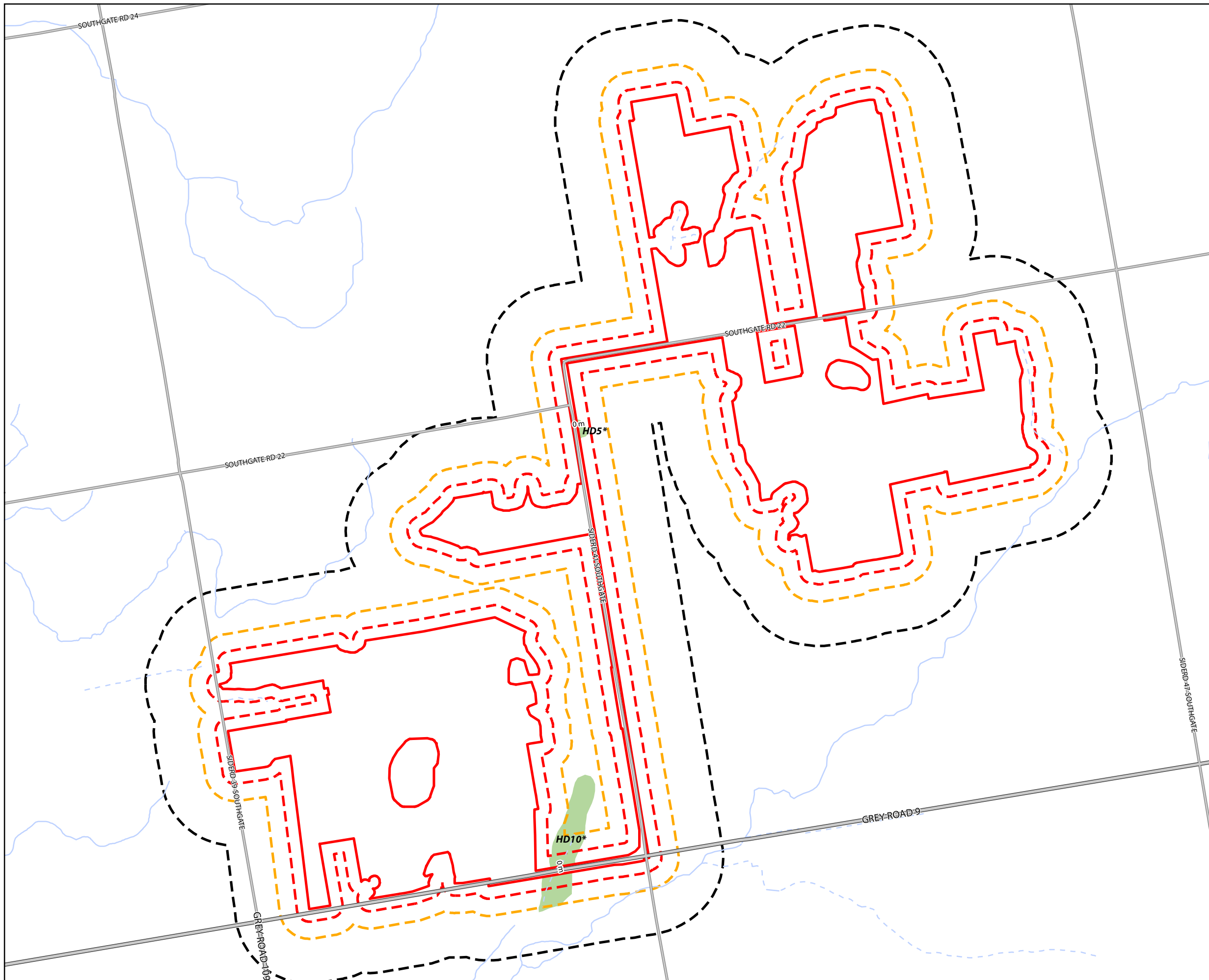
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SOUTHGATE SOLAR PROJECT

**FIGURE 5J
SIGNIFICANT WILDLIFE HABITAT
HARLEQUIN DARNER**

- Permanent Watercourse
- Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Harlequin Darners



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Table 9: Evaluation of Significant Wildlife Habitat in the Project Location and 50 m Setback

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Seasonal Concentration Areas									
Turtle Wintering Areas TWA1, TWA2	Over-wintering sites are permanent water bodies, large wetlands, and bogs and fens with adequate dissolved oxygen. Water has to be deep enough not to freeze and have soft mud substrates. These habitats are found in the following Community Types: Swamp (SW), Marsh (MA), Open Water (OA), Shallow Water (SA), Open Fen (FEO), Open Bog (BOO). Significant wildlife habitat defining criteria: <ul style="list-style-type: none"> • Presence of 5 wintering Midland Painted Turtles • One or more Northern Map Turtles or Snapping Turtles 	These candidate habitats are in OAO communities within the southern portion of the Project Location.	✓	---	---	✓	Since turtle basking surveys were not conducted in this habitat during the 2014 season, these habitats were treated as significant and carried forward to the EIS. Pre-construction surveys will be conducted to determine significance of these habitats. See Figure 5A .	<ul style="list-style-type: none"> - Perimeter fence - Access roads - Solar panels - Area of Operational Flexibility 	0m
Specialised Habitat for Wildlife									
Turtle Nesting Areas TNA1	For an area to function as a turtle nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not significant wildlife habitat. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes and rivers are most frequently used. Exposed mineral soil (sand or gravel) areas <100 m from or within the following Community Types: Mineral or Organic Meadow Marsh (MAM or MAO), Shallow Marsh (MAS), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO). Significant wildlife habitat defining criteria: <ul style="list-style-type: none"> • Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH. 	Meadow Marsh (MAM) with exposed mineral soil area is found within the 50 m setback of the Project Location.	---	✓	---	✓	Since turtle basking surveys were not conducted in this habitat during the 2014 season, this habitats was treated as significant and carried forward to the EIS. Pre-construction surveys will be conducted to determine significance of these habitats. See Figure 5B .	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station 	30 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Amphibian Breeding Habitat (Wetland) ABHWE1	Wetlands and pools isolated from woodlands with presence of shrubs, logs available for calling, foraging, and escape/concealment from predators. Bullfrogs require permanent water bodies with an abundance of emergent vegetation. Associated with any of the following ELC communities: Swamp (SW), Marsh (MA), Fen (FE), Bog (BO), Open Water (OA), Shallow Aquatic (SA), including vernal pools, that are >500 m ² or 25 m in diameter, and located >120 m from woodlands.	This candidate habitat is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh and OAO Open Aquatic and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	7 m
Amphibian Breeding Habitat (Wetland) ABHWE2	Significant wildlife habitat defining criteria: <ul style="list-style-type: none"> • Presence of breeding population of 1 or more of the listed salamander species or 3 or more of the listed frog or toad species and with at least 20 breeding individuals (adults, juveniles, eggs/larval masses) or; • Wetland with confirmed breeding Bullfrogs are significant. <u>Wildlife species to be considered:</u> Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog Species of Conservation Concern: Western Chorus Frog	This candidate habitat is made up of MAMM3-1 Mixed Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Access roads - Inverter station - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	8 m
Amphibian Breeding Habitat (Wetland) ABHWE5	Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog Species of Conservation Concern: Western Chorus Frog	This candidate habitat is made up of MAMM3-1 Mixed Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	✓	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Access roads - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	5 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Amphibian Breeding Habitat (Wetland) ABHWE6		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Overhead cable	18 m
Amphibian Breeding Habitat (Wetland) ABHWE7		This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Overhead cable	0 m
Amphibian Breeding Habitat (Wetland) ABHWE8		This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Overhead cable - Area of Operational Flexibility	0 m
Amphibian Breeding Habitat (Wetland) ABHWE9		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	✓	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Access road - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Amphibian Breeding Habitat (Wetland) ABHWE11		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Overhead cable - Area of Operational Flexibility	9 m
Amphibian Breeding Habitat (Wetland) ABHWE12		This candidate habitat is made up of MAMM1-3 Reed Canary Grass Graminoid mineral Meadow Marsh and SWMO1-1 White Cedar Hardwood Organic mixed Swamp and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Access roads - Area of Operational Flexibility	4 m
Amphibian Breeding Habitat (Wetland) ABHWE13		This candidate habitat is made up of OAO Open Aquatic Area and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Amphibian Breeding Habitat (Wetland) ABHWE14		This candidate habitat is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh and is found within the surrounding 50 m of the Project Location.	---	✓	---	✓	Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance. See Figure 5C .	- Perimeter fence - Solar panels - Area of Operational Flexibility	3 0m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Amphibian Breeding Habitat (Woodland) ABHWO1	<p>The presence of a wetland, lake or pond within or adjacent to (within 120 m) a woodland that contains permanent ponds or contains water in most years until mid-July are most likely to be used as breeding habitat.</p> <p>Significant wildlife habitat defining criteria:</p> <ul style="list-style-type: none"> • Presence of breeding population of 1 or more of the listed species with at least 20 individuals (adults, juveniles, eggs/larval masses). <p><u>Wildlife species to be considered:</u></p> <p>Eastern Newt Blue-spotted Salamander Spotted Salamander</p>	<p>This candidate habitat is made up of MAMM3-1 Mixed mineral Meadow Marsh and SWDM2-1 Black Ash Mineral Deciduous Swamp/MAMM3-1 Mixed Mineral Meadow Marsh complex wetlands that are contained in a FODM5-7 Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest/FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback.</p>	✓	✓	✓	---	<p>During amphibian surveys on May 2, 2014 and May 29 2014 from amphibian survey station 16, there was determined to be presence of 3 of the species of the wildlife species to be considered (Gray Treefrog, Spring Peeper and Wood Frog) with at least 20 individuals. Therefore, this habitat is significant.</p> <p>See Figure 5D.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	0 m
Amphibian Breeding Habitat (Woodland) ABHWO2	<p>Gray Treefrog Spring Peeper Wood Frog Western Chorus Frog Species of Conservation Concern: Western Chorus Frog</p>	<p>This candidate habitat is made up of MAMM1-2 Cattail Graminoid Mineral Meadow Marsh, MASM1-14 Reed Canary Grass Mineral Shallow Marsh and SWMM5-1 Balsam Fir Hardwood Mixed Mineral Swamp wetlands that are contained in a woodland consisting of FODM5-1 Dry Fresh Sugar Maple-Black Cherry Deciduous Forest, FODM5-9 Dry-Fresh Sugar Maple Hardwood Deciduous Forest and WODM4 Dry-Fresh Deciduous Woodland. This habitat exists within the 50 m setback of the Project Location.</p>	---	✓	✓	---	<p>During amphibian surveys on May 2, 2014 and May 28 and June 25, 2014 from amphibian survey station 19 and May 2, and June 26, 2014 from amphibian survey station 22, there was determined to be presence of 3 of the species of the wildlife species to be considered (Gray Treefrog, Spring Peeper and Wood Frog) with at least 20 individuals. Therefore, this habitat is significant.</p> <p>See Figure 5D.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility 	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Amphibian Breeding Habitat (Woodland) ABHWO3	<p>The presence of a wetland, lake or pond within or adjacent to (within 120 m) a woodland that contains permanent ponds or contains water in most years until mid-July are most likely to be used as breeding habitat.</p> <p>Significant wildlife habitat defining criteria:</p> <ul style="list-style-type: none"> • Presence of breeding population of 1 or more of the listed species with at least 20 individuals (adults, juveniles, eggs/larval masses). <p><u>Wildlife species to be considered:</u></p> <p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog</p>	<p>This candidate habitat is made up of SWDM2-2 Green Ash Mineral Deciduous Swamp, SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp and SWMO1-1 White Cedar Hardwood Organic Mixed Swamp wetlands that are contained in a FOCM4-1 Fresh-Moist White Cedar Coniferous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists on the Project Location and within the 50 m setback.</p>	---	✓	✓	---	<p>During amphibian surveys on May 1, 2014 and May 28 and June 25, 2014 from amphibian survey stations 11 and 12, there was determined to be presence of 3 of the species of the wildlife species to be considered (Gray Treefrog, Spring Peeper and Wood Frog) with at least 20 individuals. Therefore, this habitat is significant.</p> <p>See Figure 5D.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Main HV substation - Overhead cable - Area of Operational Flexibility 	10 m
Amphibian Breeding Habitat (Woodland) ABHWO4	<p>Spring Peeper Wood Frog Western Chorus Frog Species of Conservation Concern: Western Chorus Frog</p>	<p>This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mineral Mixed Swamp wetland that is contained in an FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest woodland. This habitat exists within the 50 m setback.</p>	---	✓	---	✓	<p>Since amphibian survey stations were located more than 100 m from this candidate habitat, this habitat was treated as significant and carried forward to the EIS. Surveys will be conducted prior to construction, to determine significance.</p> <p>See Figure 5D.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Overhead cable - Area of Operational Flexibility 	0 m
Amphibian Breeding Habitat (Woodland) ABHWO5		<p>This candidate habitat is made up of MAMM1-3 Reed Canary Grass Graminoid Mineral Meadow Marsh and SWDM4-5 Poplar Mineral Deciduous Swamp and is found within the surrounding 50 m of the Project Location.</p>	---	✓	✓	---	<p>During amphibian surveys on May 1, 2014, May 28 2014 and June 25, 2014 from amphibian survey station 13, there was determined to be presence of 3 of the species of the wildlife species to be considered (Gray Treefrog, Northern Leopard Frog and Green Frog) with at least 20 breeding individuals. Therefore, this habitat is significant.</p> <p>See Figure 5D.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads 	30 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Habitat of Species of Conservation Concern									
Woodland Area-sensitive Bird Breeding Habitat ASBB1	<p>Habitats where interior forest breeding birds are breeding in forest stands or woodlots >30 ha (forest interior is defined as at least 200 m from the forest edge). These include any of the following Community Types: Forest (FO), Treed Swamp (SW) that are mature (>60 years old).</p> <p>Significant wildlife habitat defining criteria:</p> <ul style="list-style-type: none"> • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. <p><u>Wildlife species to be considered:</u> Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren</p> <p>Species of Conservation Concern: Canada Warbler Cerulean Warbler</p>	This candidate habitat is made up of FODM5-7 Dry-Fresh Sugar maple-Black cherry Deciduous Forest and FODM6-5 Fresh-Moist Sugar Maple Hardwood Deciduous Forest and exists both in the Project Location and within the 50 m setback.	✓	✓	✓	---	<p>Breeding bird point counts taken within this woodland area (23, 24, 25, 22, 68, 69, 70, 74) recorded observations of Veery, Ovenbird, Black-throated Blue Warbler, Yellow-bellied Sapsucker, Scarlet Tanager, Winter Wren, and Black-throated Green Warbler (See Appendix B of the <i>NHA Evaluation of Significance Report</i> for Breeding Bird Survey Point Counts and field notes). Therefore, this habitat is significant and was carried forward to the EIS report.</p> <p>See Figure 5E.</p>	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter station - Main HV substation - Overhead cable - Area of Operational Flexibility 	0m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Special Concern and Rare Wildlife Species									
American Gromwell AG2		This candidate habitat is made up of FODM6 Fresh-Moist Sugar Maple Deciduous Forest and exists within 50 m of the Project Location.	---	✓	---	✓	Surveys that were conducted in this FODM6 Fresh-Moist Sugar Maple Deciduous Forest community were conducted under the alternative site investigation methodology so this habitat was treated as significant and carried forward to the EIS. There will be no pre-construction surveys required for this habitat to determine significance. See Figure 5F .	- Overhead cable	0 m
Hill's Pondweed HP1	Hill's Pondweed is found in slow-moving streams, ditches, ponds, lakes and wetlands. It grows in clear, cold alkaline waters.	This candidate habitat is made up of and OAO open aquatic area and exists within 50 m of the Project Location.	---	✓	---	✓	Since open water features were not searched for vegetation, these habitats were treated as significant and carried forward to the EIS. Surveys to be conducted prior to construction to determine significance. See Figure 5G .	- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	7 m
Hill's Pondweed HP3		This candidate habitat is made up of and OAO open aquatic area and exists within 50 m of the Project Location.	---	✓	---	✓		- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Hill's Pondweed HP4		This candidate habitat is made up of and OAO open aquatic area and exists within 50 m of the Project Location.	---	✓	---	✓		- Perimeter fence - Solar panels - Area of Operational Flexibility	9 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Hill's Pondweed HP5		This candidate habitat is made up of and OAO open aquatic area and exists on the Project Location.	✓	---	---	✓		- Perimeter fence - Solar panels - Access roads - Area of Operational Flexibility	0 m
Hill's Pondweed HP6		This candidate habitat is made up of and OAO open aquatic area and exists on the Project Location.	✓	---	---	✓		- Access roads - Area of Operational Flexibility	0 m
Soft-hairy False Gromwell SHFG4	This species prefers well drained soils in open woodlands or along roadsides. Blooming season is June- July. The thicket (TH) communities and the WODM4 could provide habitat for this species.	This candidate habitat is made up of THMM2 Fresh Moist Mixed Thicket and THDM2-11 Hawthorn Deciduous Shrub Thicket and exists within the 50 m setback of the Project Location.	---	✓	---	✓	Surveys that were completed in this THMM2 Fresh Moist Mixed thicket community were conducted under the alternative site investigation methodology so this habitat was treated as significant for Soft-hairy False Gromwell and brought forward to the EIS. There will be no pre-construction surveys conducted for this habitat. See Figure 5H .	- Overhead cable	0 m
Soft-hairy False Gromwell SHFG5		This candidate habitat is made up of THMM2 Fresh Moist Mixed Thicket and exists within the 50 m setback of the Project Location.	---	✓	---	✓		- Perimeter fence - Solar panels - Access roads - Inverter station	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Redheaded Woodpecker RHW1	The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching.	Candidate habitat exists within FODM6-5 Fresh Moist Sugar Maple Hardwood Deciduous Forest that is within the 50 m setback of the Project Location.	---	✓	✓	---	Breeding bird surveys were conducted at point count station 24 on June 5 th and June 19 th . A Redheaded Woodpecker was heard calling during the June 19 th survey. There were incidental sightings of two Redheaded Woodpeckers on May 13 th and then again on May 14 th 2014. Therefore, this habitat is considered Significant Wildlife Habitat for Redheaded Woodpecker and was carried forward to the EIS. See Figure 5I .	- Perimeter fence - Solar panels - Access roads - Main HV substation	10 m
Harlequin Darner HD5	This species can be found in bogs, and swamps May through July.	This candidate habitat is made up of SWTM3 Willow Mineral Deciduous Thicket Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	✓	Surveys that were completed in this SWTM3 Willow mineral Deciduous Thicket Swamp community were conducted under the alternative site investigation methodology so this habitat was treated as significant and brought forward to the EIS. There will be no pre-construction surveys conducted for this habitat. See Figure 5J .	- Overhead cable	0 m
Harlequin Darner HD10		This candidate habitat is made up of SWMM1-1 White Cedar Hardwood Mixed Mineral Swamp and exists in the 50 m setback of the Project Location.	---	✓	---	✓	Surveys that were completed in this SWMM1-1 White Cedar Hardwood Mixed Mineral Swamp community were conducted under the alternative site investigation methodology so this habitat was treated as significant and brought forward to the EIS. There will be no pre-construction surveys conducted for this habitat. See Figure 5J .	- Overhead cable - Area of Operational Flexibility	0 m

Wildlife Habitat	Defining Criteria for Significant Wildlife Habitat	Habitat Composition: Attributes, Condition and Function	Location		Status		Relevant Evaluation Criteria Determining Status	Project Components within 50 m	Distance to Project Location (m)
			Within Project Location	Within 50 m of Project Location	Significant	Treated as Significant			
Animal Movement Corridors									
Amphibian Movement Corridors	Corridors are determined based on the identification of significant breeding habitat for amphibians. Movement corridors between breeding habitat and summer habitat must be determined when amphibian breeding habitat (wetland) is confirmed as significant wildlife habitat and the species observed within the significant amphibian breeding habitat (wetland) rely on woodland habitat for a portion of their life cycle. Corridors may be found in all ecosites associated with water. Corridors should be at least 200 m wide with gaps <20 m, and, if following riparian area, with at least 15 m of vegetation on both sides of waterway.	Potential habitat exists both within the Project Location and 50 m setback between where a unit of candidate wetland amphibian breeding habitat occurs in isolation from a woodland. The candidate amphibian corridor would be the space between the woodland and the wetland amphibian breeding habitat.	✓	✓	---	✓	Please note, amphibian corridors are only considered once wetland Amphibian Breeding Habitat has been evaluated as significant. Until this type of wildlife habitat is evaluated, amphibian corridors are carried forward in this NHA as candidate. They have not been mapped. Should the wetland Amphibian Breeding Habitat be evaluated as significant, the methodology outlined in Appendix A of the <i>NHA EIS</i> would be followed to investigate the area between the significant wetland Amphibian Breeding Habitat and the nearest woodland.	<ul style="list-style-type: none"> - Perimeter fence - Solar panels - Access roads - Inverter stations - Overhead distribution line - Main HV Substation 	0 m

9. ENVIRONMENTAL EFFECTS OF THE PROJECT

A summary of attributes, composition, and function that contribute to the persistence of significant natural features may be sensitive to development and serve as good indicators of negative environmental effects are described below in **Table 10**. This summary provides key components of natural feature attributes, composition and function which will be brought forward and evaluated as part of the impact analysis.

The evaluation of potential impacts, mitigation and residual effects are discussed in **Table 11**. In many cases, activities listed in **Table 11** overlap (e.g. clearing and equipment lay-down). Where activities overlap, the first activity in the Project construction sequence or which has the broadest impact is evaluated in **Table 11**.

In general, the mitigation measures have been designed to reduce the impacts of construction, operations, and decommissioning to the significant natural features.

Table 10: Summary of Key Features and Attributes that may serve as Indicators of Negative Environmental Effects

Natural Feature	Indicator Species	Features/Attributes Necessary for Persistence (Physical and Functional)	Features Potentially Sensitive to Development	Good Indicator Features/Species
Wetlands				
4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32	Amphibians, wetland breeding birds, native wetland flora	Physical: adjacent wetlands, overland flow, localized water retention, water quality, vegetation, vegetation cover Functional: connection with other natural features, species richness, wildlife habitat diversity	Water quality (wetlands and riverine), vegetation along the edge of feature, species richness, wildlife habitat diversity	Vegetation along the edge of feature acting as a natural buffer between the wetland and the project location Species richness (amphibians, colonial nesting birds, marsh breeding birds, waterfowl)
Woodlands				
A, B, C, D, E, and I	Native woodland flora	Physical: occurrence of large contiguous forest unit with low disturbance Functional: provides interior habitat, is adjacent to other significant wildlife habitat, provides habitat for woodland species	Vegetation along the edge of the feature, interior habitat, woodland species richness	Vegetation along the edge of feature Persistence/dominance of native tree species
Wildlife Habitat				
Seasonal Concentration Areas				
Turtle Wintering Area TWA1*, TWA2*	Midland Painted Turtle Northern Map Turtle Snapping Turtle	Physical: permanent water body with a depth of at least 1 m to prevent freezing. Must have adequate dissolved oxygen and soft mud substrates Functional: area that will provide winter refuge	Depth of water	Depth of water Use of habitat by species

Natural Feature	Indicator Species	Features/Attributes Necessary for Persistence (Physical and Functional)	Features Potentially Sensitive to Development	Good Indicator Features/Species
Specialised Habitat for Wildlife				
Turtle Nesting Areas TNA1*	Midland Painted Turtle Northern Map Turtle Snapping Turtle	Physical: exposed mineral soil areas adjacent to wetland communities Functional: areas that can function as turtle nesting area; These areas will provide substrate in which turtles can dig, and are located in open, sunny areas	Nesting habitat for turtles	Species richness and abundance Persistence of sandy/gravelly areas in which turtles can nest
Amphibian Breeding Habitat (Wetland) ABHWE1*, ABHWE2*, ABHWE5*, ABHWE6*, ABHWE7*, ABHWE8*, ABHWE9*, ABHWE11*, ABHWE12*, ABHWE13*, ABHWE14*	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Physical: occurrence of wetland community with seasonally-inundated open water area(s) Functional: Water quality to support breeding; presence of shrubs and logs to increase structure of calling, foraging, and protection from predators	Breeding habitat for amphibians (e.g., wetlands, fringes of open water areas), water quality of breeding ponds	Water quality of breeding ponds within 30 m of project components Amphibian species richness and abundance Occurrence of quality wetland vegetation cover Western Chorus Frog (in habitat where species was previously observed in pre-construction surveys)
Amphibian Breeding Habitat (Woodland) ABHWO1, ABHWO2, ABHWO3, ABHWO4*, ABHWO5	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	Physical: occurrence of wetland community with seasonally-inundated open water area(s) Functional: water quality to support breeding; connection to upland habitat	Breeding habitat for amphibians (e.g., wetlands, fringes of open water areas), water quality of breeding ponds	Water quality of breeding ponds within 30 m of project components Amphibian species richness and abundance Occurrence of quality wetland vegetation cover

Natural Feature	Indicator Species	Features/Attributes Necessary for Persistence (Physical and Functional)	Features Potentially Sensitive to Development	Good Indicator Features/Species
				Western Chorus Frog (in habitat where species was previously observed in pre-construction surveys)
Habitat of Species of Conservation Concern				
Woodland Area-Sensitive Bird Breeding habitat ASBB1	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren	Physical: forest stands or woodlots 30ha with interior forest Functional: interior forest habitats for interior forest breeding birds to breed	Interior forest habitat for breeding birds	Species richness and abundance Persistence of interior forest habitat
American Gromwell AG2*	American Gromwell	Physical: upland hardwood forests Functional: ability to provide habitat for flora and persistence of water quality and quantity	Upland hardwood forest	Presence of American Gromwell
Hill's Pondweed HP1*, HP3*, HP4*, HP5*, HP6*	Hill's Pondweed	Physical: slow-moving streams, ditches, ponds, lakes and wetlands that are clear, cold and alkaline Functional: ability to provide habitat for flora and persistence of water quality and quantity	Clear, cold alkaline waters	Presence of Hill's Pondweed

Natural Feature	Indicator Species	Features/Attributes Necessary for Persistence (Physical and Functional)	Features Potentially Sensitive to Development	Good Indicator Features/Species
Soft-hairy False Gromwell SHFG4*, SHFG5*	Soft-hairy False Gromwell	Physical: well drained soils in open woodlands or along roadsides Functional: ability to provide habitat for flora and persistence of water quality and quantity	Well drained soils in woodland habitats and on roadsides	Presence of Soft-hairy False Gromwell
Redheaded Woodpecker RHW1	Redheaded Woodpecker	Physical: Open woodland and woodland edges Functional: provides breeding habitat Redheaded Woodpecker	Woodland habitat that serves as breeding habitat for Redheaded Woodpecker	Presence of Redheaded Woodpecker
Harlequin Darner HD5*, HD10*	Harlequin Darner	Physical: bogs and swamps Functional: ability to provide habitat for Harlequin Darner and persistence of water quality and quantity	Vegetation and water quality able to provide breeding habitat in bogs and swamps	Presence of Harlequin Darner
Animal Movement Corridors				
Amphibian Movement Corridors*	Eastern Newt Spotted Salamander Blue-spotted Salamander Western Chorus Frog Gray Treefrog Spring Peeper Wood Frog	Physical: fields comprised of natural vegetation communities, riparian corridors Functional: Connection to upland habitat	Breeding habitat for amphibians (e.g., wetlands, fringes of open water areas), water quality of breeding ponds Vegetative cover within corridor	Water quality of breeding ponds within 30 m of project components Amphibian species richness and abundance Occurrence of quality wetland vegetation cover Western Chorus Frog (in habitat where species was previously observed in pre-construction surveys)

*denotes habitats that will be “treated as” significant in the EIS and pre-construction surveys will be completed to evaluate wildlife habitat where access is permitted

Table 11: Summary of Potential Negative Effects and Mitigation Measures for Significant Natural Features

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
Assumed Provincially Significant Wetlands									
4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32	<u>Construction Site Preparation – Vegetation Clearing</u>	<p>Project components within 50 m of wetlands include:</p> <ul style="list-style-type: none"> • Access roads • Perimeter fence • Solar panels • Overhead cable • Area of operational flexibility <p>Wetlands are setback a minimum of 30 m from project components with the following exceptions:</p> <ul style="list-style-type: none"> • Wetland 6 is within 20 m of the perimeter fence • Wetland 9 is 9 m from the overhead cable • Wetlands 17 and 20 are 0 m from the overhead cable • Wetland 22 is 21 m from an area of operational flexibility • Wetland 23 is within 4 m of an access road. 	None. No direct impacts as no vegetation clearing is to occur within wetland boundaries.	Decreased wetland buffer. Wetland buffers will be at least 30 m or a width as currently available based on pre-development conditions. As most of the wetlands are bordered by agricultural fields, many of the wetlands will benefit from an increased buffer width consisting of more naturalized vegetation. The buffer lands will likely be subject to ploughing once Project is developed.	Low. Wetlands only have the potential to be indirectly affected and buffers on the applicable wetlands will be at least 30 m.	Once during construction.	Until vegetative cover of the project area is restored during the operations phase.	<ul style="list-style-type: none"> • Maintain a clearly demarcated boundary where no works occur within 30 m of a wetland boundary. • The construction workforce will be educated on local wildlife that may be encountered on the Project Location and will be instructed to take measures for avoiding wildlife. A protocol will be provided to contractors to follow in the event that wildlife is encountered. • Where exposed soils occur between wetland features and the Project (relict areas that were agricultural fields), these areas to be monitoring to ensure vegetation establishes to add to the wetland buffer where possible. 	Due to the minimum 30 m separation distances between significant vegetation clearing and most of the wetlands, and avoidance of direct effects, no net adverse effects are anticipated to wetlands. A positive net effect of increased vegetation buffers for wetlands post-construction.
4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32	<u>Construction – Installation of Perimeter Fence</u>	Wetlands are setback a minimum of 30 m from the perimeter fence with the exception of Wetland 6. The setback is 20 m.	None. A 20 m setback will minimize impacts to the wetland edge vegetation from installation of fence posts.	Potential for construction equipment to enter wetlands. Potential for wildlife to become trapped in Project Location.	Limited to incidental.	Once during construction.	Throughout construction.	<ul style="list-style-type: none"> • Maximize the distance of all construction equipment used from wetlands; operate machinery in the areas disturbed for construction only, if applicable. • Construct perimeter fencing prior to installing core project components to prevent entry of larger wildlife within the construction area. • After perimeter fence is constructed, a visual search of the project location to be undertaken to identify wildlife that may be within fencing. 	No residual effects.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32	<u>Construction and Decommissioning-Grubbing and Grading</u>	<p>Project components within 50 m of wetlands include:</p> <ul style="list-style-type: none"> • Access roads • Perimeter fence • Solar panels • Overhead cable • Area of operational flexibility <p>Wetlands are setback a minimum of 30 m from grubbing/grading activities with the following exceptions:</p> <ul style="list-style-type: none"> • Wetland 6 is within 20 m of the perimeter fence • Wetland 9 is 9 m from the overhead cable • Wetlands 17 and 20 are 0 m from the overhead cable • Wetland 22 is 21 m from an area of operational flexibility • Wetland 23 is within 4 m of an access road. 	<ul style="list-style-type: none"> • None. No direct impacts as no grading/ grubbing is to occur within wetland boundaries. 	<ul style="list-style-type: none"> • Portions of the Project Location and stockpiled material being exposed to erosion processes, including wind and surface run-off leading to sedimentation in wetlands • Short-term hydrological changes: Potential short-term changes to surface water hydrology and drainage to/ from natural features. Potential increase in surface water runoff due to grading, soil compaction, or ditching associated with access roads. 	Moderate .	<p>During construction.</p> <p>Once during decommissioning.</p>	<p>Until vegetative cover of the project area is restored during the operations phase.</p>	<ul style="list-style-type: none"> • Limits of construction work to be staked in the field in order to minimize disturbance to the wetland habitat and wildlife. Construction envelope to be clearly demarcated and kept as small as possible. • Maximize the distance of all construction equipment used from the wetland edge; operate machinery in the areas disturbed for construction only • Develop and implement a sediment and erosion control plan to be implemented prior to and during construction. • Internal project access roads to be constructed at or near grade and the use of impermeable materials avoided to promote infiltration and surface roughness • Flow retention features may be used in access road ditches to mitigate increases in surface water runoff (e.g., straw bales or rock check dams). • A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. • Soil stabilization to occur as soon as practical to stabilize soil upon completion of work activities to attenuate runoff. 	<p>Erosion effects are not anticipated during the operations phase as the Project Location will be have permanent vegetation groundcover on all disturbed areas.</p> <p>There is low potential for residual effects during the construction phase if mitigation measures are applied.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32	<u>Construction and Decommissioning</u> – Storage and movement of materials	Project components within 50 m of wetlands include: <ul style="list-style-type: none"> • Access roads • Perimeter fence • Solar panels • Overhead cable • Area of operational flexibility Wetlands are setback a minimum of 30 m from project components with the following exceptions: <ul style="list-style-type: none"> • Wetland 6 is within 20 m of the perimeter fence • Wetland 9 is 9 m from the overhead cable • Wetlands 17 and 20 are 0 m from the overhead cable • Wetland 22 is 21 m from an area of operational flexibility • Wetland 23 is within 4 m of an access road. 	None. No direct impacts as no work is to occur within wetland boundaries.	Potential for spills.	Low.	Low frequency with mitigation measures. Potential during construction, operations and decommissioning.	Short-term.	<ul style="list-style-type: none"> • A spill contingency plan will be in place for the Project. • Storage of materials for the Project should not occur within 30 m of a wetland boundary. • Spills are to be reported to the Ontario Spills Action Centre (1-800-268-6060). • Secondary containment is to be used for hazardous substances stored in the Project Location. • Use controlled work procedures in order to minimize occurrences of spills. Spills cover release of materials from the Project into the air, water or onto land. • Minimize activities with potential for dust releases, especially during windy and prolonged dry periods. • Stabilize areas of stockpiled or exposed soils when construction activities are not active (i.e., no works within 30 days scheduled). • Minimize vehicle traffic adjacent to wetlands, or exposed soils. All traffic to use designated areas. • Restore undisturbed areas as soon as possible to minimize the duration of soil exposure. 	None. All spills will be expected to be remediated. No adverse effects of natural features are anticipated with implementation of mitigation measures.
4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32	<u>All phases</u> - Use of vehicles and machinery during construction, operations, and decommissioning.	Project components within 50 m of wetlands include: <ul style="list-style-type: none"> • Access roads • Perimeter fence • Solar panels • Overhead cable • Area of operational flexibility Wetlands are setback a minimum of 30 m from project components with the following exceptions: <ul style="list-style-type: none"> • Wetland 6 is within 20 m of the 		Emissions: Potential for air pollution from dust and emissions from construction vehicles and machinery and equipment. Overall impact to air quality during construction, operations, and decommissioning.	Low. Emissions: Slight change to air quality temporarily Leaks and Spills: Minimal localized effect.	Once during construction. Minimal during operations. Once during decommissioning.	Short-term.	<ul style="list-style-type: none"> • All vehicles, machinery, and equipment must be maintained and equipped with emission controls, as applicable by provincial standards. • Construction work shall be carried out as according to Canadian Environmental Protection Act (CEPA), and applicable air emission regulations and by-laws. • Implement best management practices (BMP's) and establish an emergency spill 	Some emissions will be generated during project activities with no net adverse effect to significant natural features. Low potential for residual effects of leaks and spills if

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
		perimeter fence <ul style="list-style-type: none"> Wetland 9 is 9 m from the overhead cable Wetlands 17 and 20 are 0 m from the overhead cable Wetland 22 is 21 m from an area of operational flexibility Wetland 23 is within 4 m of an access road. 		Leaks and Spills: Potential for leak or spill of fuel and other deleterious substances from vehicles and machinery that affect wetland wildlife, vegetation, or contaminate water and the soil.				plan. <ul style="list-style-type: none"> Ensure that emergency spill kit is available at the Project Location at all times in the event that a spill occurs. All spills and leaks of deleterious substances must be immediately contained and cleaned up in accordance with Provincial regulatory requirements and reported immediately to the Ontario Spills Action Centre (1-800-268-6060). Maintain a log book of any spills and mitigation measures. Excess material will be removed from the site. No refuelling within 30 m of natural features. Maximize the distance of all construction equipment used from the wetland edge; operate machinery in the areas disturbed for construction only. 	mitigation measures are applied.
Significant Woodlands									
A, B, C, D, E, I	<u>Construction Site Preparation – Vegetation Clearing</u>	Significant woodlands are within 50 m of the following Project components: <ul style="list-style-type: none"> Access roads Perimeter fence Solar panels Inverters Main HV substation Area of operational flexibility Overhead cables Portions of Woodland A, Woodland B, and Woodland C are within the Project Location.	<ul style="list-style-type: none"> Loss of 1.12 ha of woodland area from Woodland A, 3.67 ha from Woodland B, and 0.61 ha from Woodland C. Loss of habitat for wildlife in Woodland A. 	<ul style="list-style-type: none"> Loss of ecological function in cleared areas. Loss of potential linear connectivity along treed area to adjacent treed areas where hedgerows are being removed 	Low. 5.40 ha total woodland areas to be removed, but no interior habitat will be removed and, with the exception of Woodland B, woodlands will still retain criteria for significance.	Once during construction.	Permanent.	<ul style="list-style-type: none"> Limits of construction work to be staked in the field in order to minimize disturbance to the woodland habitat and wildlife. Construction envelope to be clearly demarcated and kept as small as possible. When woodland clearing is taking place the area will be staked and monitored to ensure that no additional woodland is cleared during the clearing. Woodland removal and/or removal of sensitive natural features to be minimized, if possible, during detail design. No woodland removal is proposed for Woodland D, E or I. According to the ISA Arborists' Certification Study Guide (2010), a general tree 	Removal of significant woodland area represents less than 0.25% decrease in total significant woodland area. With the exception of Woodland B, All woodlands will remain significant post- clearing as all criteria met to establish significance (i.e.,

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<p>protection zone should be 0.3 m diameter for each 2.5 cm of trunk diameter. Given to dominant size class of trees in the Woodlands is approximately 24 cm DBH, the minimum tree protection distance will be the greater of the drip line or 2.9 m from the trunk.</p> <ul style="list-style-type: none"> • If possible, avoid clearing vegetation during the breeding bird season to minimize impacts on breeding birds. Should clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed 48 hours in advance of clearing. If nests are found and the species protected by the <i>Migratory Bird Convention Act</i>, work within 10 m of the nest will cease until the nest has fledged. If there are no nests, then clearing can occur. • Construction may occur on cleared lands during the breeding season once vegetation has been removed (if applicable). The majority of the Project Location consists of agricultural fields that were in production in 2014. 	<p>total size, interior habitat, significant wildlife habitat, etc.) will remain unchanged. The area of Woodland B to be removed is composed of small, sparse trees. Therefore this area of the woodland is not functioning as quality woodland and does not include significant wildlife habitat. In addition, there will be no residual impact of potential loss of connectivity due to the abundance of similar habitat within the Project area and continued linkages maintained around the Project perimeter.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
A, B, C, D, E, I	<u>Construction – Installation of Perimeter Fence</u>	All types of project components are within 50 m of a significant woodland. Following the initial vegetation clearing, a minimum distance between significant woodlands and the perimeter fence will be the greater of the dripline or according to ISA Arborist Guidelines (2.9 m from trunk based on a trunk DBH of 24 cm).	Disruption of underground roots within woodlands and along edges of woodlands during installation of perimeter fence.	Potential for construction equipment to enter woodlands.	Limited to incidental.	Once during construction.	Throughout construction.	<ul style="list-style-type: none"> Maintain effective sediment and erosion control measures as installed during the site preparation phase. Maximize the distance of all construction equipment used from woodlands; operate machinery in the areas disturbed for construction only, if applicable. Construct perimeter fencing prior to installing core project components to prevent entry of larger wildlife within the construction area. After perimeter fence is constructed, a visual search of the Project Location to be undertaken to identify wildlife that may be within fencing. 	No residual effects.
A, B, C, D, E, I	<u>Construction and Decommissioning- Grubbing and Grading</u>	All types of project components are within 50 m of a significant woodland. A minimum distance between significant woodlands and the perimeter fence will be the greater of the dripline or according to ISA Arborist Guidelines (2.9 m from trunk based on a trunk DBH of 24 cm).	No direct effects of the woodland area adjacent to the project location following vegetation clearing within the Project Location of Woodland A.	<ul style="list-style-type: none"> Soil erosion as a result of grading and grubbing (trenching, digging, etc.). Portions of the Project Location and stockpiled material being exposed to erosion processes, including wind and surface runoff. Short-term hydrological changes: Potential short-term changes to surface water hydrology and drainage to/ from natural features. Potential increase in surface water runoff due to grading or ditching associated with access 	Low.	Once during construction. Once during decommissioning.	Short- term.	<ul style="list-style-type: none"> Limits of construction work to be staked in the field in order to minimize disturbance to the woodland habitat and wildlife. Construction envelope to be clearly demarcated and kept as small as possible. Maximize the distance of all construction equipment used from the woodland edge; operate machinery in the areas disturbed for construction only Develop and implement a sediment and erosion control plan to be implemented prior to and during construction. Internal project access roads to be constructed at or near grade and the use of impermeable materials avoided to promote infiltration and surface roughness Flow retention features may be used in access road ditches to mitigate increases in surface water runoff (e.g., straw bales or rock check dams). A plan to address/mitigate soil compaction 	Erosion effects are not anticipated during operations phase as Project Location will be stabilized with permanent vegetation groundcover on all disturbed areas. There is low potential for residual effects during the construction phase if mitigation measures are applied.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
				roads, soil compaction, and/ or the removal of vegetation.				throughout the Project Location to be developed as part of the detailed design to promote infiltration. <ul style="list-style-type: none"> Soil stabilization to occur as soon as practical to stabilize soil upon completion of work activities to attenuate runoff. 	
A, B, C, D, E, I	<u>Construction and Decommissioning-</u> Storage and movement of materials	All types of project components are within 50 m of a significant woodland A minimum distance between significant woodlands and the perimeter fence will be the greater of the dripline or according to ISA Arborist Guidelines (2.9 m from trunk based on a trunk DBH of 24 cm)	No direct effect on woodland areas adjacent to the Project Location following vegetation clearing of any woodland within the Project Location.	<ul style="list-style-type: none"> Sedimentation Release of dust and soil particles into woodlands 	Low.	Once during construction. Once during decommissioning.	Short- term increase of sedimentation until vegetative buffers have been restored.	<ul style="list-style-type: none"> A spill contingency plan will be in place for the Project. Storage of materials for the Project should not occur within 15 m of a woodland boundary. Spills are to be reported to the Ontario Spills Action Centre (1-800-268-6060). Secondary containment is to be used for hazardous substances stored in the Project Location. Use controlled work procedures in order to minimize occurrences of spills. Spills cover release of materials from the Project into the air, water or onto land. Minimize activities with potential for dust releases, especially during windy and prolonged dry periods. Stabilize areas of stockpiled or exposed soils when construction activities are not active (i.e., no works within 30 days scheduled) Minimize vehicle traffic adjacent to woodlands, or exposed soils. All traffic to use designated areas. Restore disturbed areas as soon as possible to minimize the duration of soil exposure 	No residual effects.
A, B, C, D, E, I	<u>All phases-</u> Use of vehicles and machinery during construction,	All types of project components are within 50 m of a significant woodland. A minimum distance between	No direct effect on woodland area adjacent to the Project Location	<ul style="list-style-type: none"> Emissions: Potential for air pollution from dust and emissions from constructions 	Low. Emissions: Slight/ temporary change	Once during construction. Minimal during	Short- term.	<ul style="list-style-type: none"> All vehicles, machinery, and equipment must be maintained and equipped with emission controls, as applicable by 	No residual effects.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
	operations, and decommissioning.	significant woodlands and the perimeter fence will be the greater of the dripline or according to ISA Arborist Guidelines (2.9 m from trunk based on a trunk DBH of 24 cm).	following clearing of woodlands within Project Location.	vehicles and machinery and equipment. Overall impact to air quality during construction, operations, and decommissioning. <ul style="list-style-type: none"> Leaks and Spills: Potential for leak or spill of fuel and other deleterious substances from vehicles and machinery that affect woodland wildlife. 	to air quality. Leaks and Spills: Minimal localized effect if any.	operations. Once during decommissioning.		<p>provincial standards.</p> <ul style="list-style-type: none"> Construction work shall be carried out as according to Canadian Environmental Protection Act (CEPA), and applicable air emission regulations and by-laws. Implement best management practices (BMP's) and establish an emergency spill plan. Ensure that emergency spill kit is available at the Project Location at all times in the even that a spill occurs. All spills and leaks of deleterious substances must be immediately contained and cleaned up in accordance with Provincial regulatory requirements and reported immediately to the Ontario Spills Action Centre (1-800-268-6060). Maintain a log book of any spills and mitigation measures. Excess material will be removed from the site. No refuelling within 30 m of natural features. Maximize the distance of all construction equipment used from the woodland edge; operate machinery in the areas disturbed for construction only. 	

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
Significant Wildlife Habitat									
<p>Turtle Wintering Areas (TWA1*, TWA2*)</p> <p>*Pre-construction surveys will be conducted at TNA1, according to methodology presented Appendix A. These surveys will take place in 2015.</p> <p>This habitat has been treated as significant until the evaluation can occur. Please note that the mitigation measures outlined will only be undertaken if the habitat is evaluated to be significant after pre-construction surveys are completed.</p>	<p>Construction - Vegetation Clearing, Grubbing and Grading</p> <p>Installation of Project Components</p>	<p>Both TWA1* and TWA2* occur within the Project Location in an area of operational flexibility.</p> <p>Project components within 50 m of these habitats include:</p> <ul style="list-style-type: none"> • Perimeter fence • Solar panels • Access Roads • Area of Operational Flexibility 	<ul style="list-style-type: none"> • None. No development is proposed within the habitat. 	<ul style="list-style-type: none"> • Decreased water quantity and quality. 	<p>Low. Only have the potential to be indirectly affected.</p>	<p>Once during construction.</p>	<p>Until vegetative cover of the project area is restored during the operations phase.</p>	<ul style="list-style-type: none"> • Habitat not to be isolated as part of project development. During and after construction turtles to retain ability to move to/from habitat features. Area around habitat feature identified as area of operational flexibility. • Provide a setback of at least 5 m from the edge of significant habitat during the construction phase • Develop and implement a sediment and erosion control (ESC) plan prior to site preparation activities. • If these habitats are determined to be significant, exclusion fencing to be constructed to prevent entry of turtles north into the Project Location during the periods when turtles may be migrating to/from significant habitat features (i.e., March- May to avoid turtles emerging from wintering habitats, and the September-October window to avoid turtles travelling to wintering habitats). • ESC measures (i.e. silt fence) installed for construction purposes will delineate the extent of the habitat from the active construction area. ESC structure should be monitored regularly to ensure that is fully functional and any issues identified are resolved in a timely fashion. • Maximize the distance of all construction equipment used from significant features; operate machinery in the Project Location areas only. • Develop and implement a stormwater management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, 	<p>No residual effects.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<ul style="list-style-type: none"> infiltrations, conveyance patterns and seasonality of water flow). A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. 	
<p>Turtle Nesting Area (TNA1*)</p> <p>*Pre-construction surveys will be conducted at TNA1, according to methodology presented Appendix A. These surveys will take place in 2015.</p> <p>This habitat has been treated as significant until the evaluation can occur. Please note that the mitigation measures outlined will only be undertaken if the habitat is evaluated to be significant after pre-construction surveys are completed.</p>	<p><u>Construction Site Preparation</u>-Vegetation Clearing, Grubbing and Grading</p>	<p>This habitat is located 30 m from the Project Location. Project components within 50 m include:</p> <ul style="list-style-type: none"> Perimeter fence Solar panels Access roads 	<ul style="list-style-type: none"> No direct physical impacts to the species or the habitat anticipated as no activities are proposed within habitat area. 	<ul style="list-style-type: none"> Increased surface runoff from exposed soils. Potential positive effect may occur from the removal of active agricultural land from immediately adjacent to this habitat. Following approval of the project, the 30 m setback from the habitat to the perimeter fence would be allowed to vegetate and provide a buffer to the nesting habitat 	<p>Low as the habitat is located 30 m from the Project Location boundary.</p>	<p>Once during the site preparation phase.</p>	<p>Until vegetative cover is restored during the operations phase.</p>	<ul style="list-style-type: none"> Develop and implement a sediment and erosion control (ESC) plan prior to site preparation activities. ESC measures (i.e. silt fence) installed for construction purposes will be monitored regularly to ensure that they are fully functional and any issues identified are resolved in a timely fashion. If TNA1* is determined to be significant, fencing to exclude turtles from entering into Project Location to be constructed prior to nesting season (May). Regular sweeps of the Project Location perimeter nearest to TNA1* and in Project Location around TNA1* to search for turtles that may be moving to habitat feature. If a turtle is identified, relocation/handling to be undertaken by a Qualified Professional. Maximize the distance of all construction equipment used from significant features; operate machinery in the Project Location areas only. Develop and implement a stormwater management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow). A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. Vehicle speeds to be restricted to 15 km/h or less on the Project site and speed limit 	<p>No residual impacts are anticipated so long as mitigation measures are in place.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<ul style="list-style-type: none"> signage posted Visual monitoring and avoidance of wildlife species encountered during activity 	
	Construction- Installation of perimeter fence		<ul style="list-style-type: none"> No direct physical impacts to the species or the habitat anticipated as no activities are proposed within habitat area. 	<ul style="list-style-type: none"> Disturbance/incidental mortality to wildlife species. Potential for isolation of turtle species due to perimeter fence around feature (required as landowner wants to access feature on property). 	Moderate effect if perimeter fence prevents movement of turtle species between habitat features in the landscape.	Throughout the life of the project.	Throughout the life of the project.	<ul style="list-style-type: none"> Isolate the feature prior to construction activities to prevent entry of large-bodied wildlife species from accessing the feature. Relocate turtles observed within the feature to suitable habitat within the general area (i.e., within 1 km). Use of galvanized fencing with chain links large enough for turtle hatchlings to move through following the construction phase. Prevent movement of turtle hatchlings through the perimeter fence during the construction phase to reduce potential for mortality. If TNA1* is evaluated to be significant, consultation to be undertaken with the Electrical Safety Authority to determine if a modified fencing design (eg. use of page wire) is permissible to facilitate movement of larger bodied turtles past the perimeter fencing. MNRF to approve final mitigation measures related to turtle nesting habitat prior to commencement of construction of the Project on the property that includes TNA1*. This includes, but may not be limited to, a modified fence design. Develop and implement an erosion and sediment control (ESC) plan prior to site preparation activities. Erosion and sediment control measures (i.e. silt fence) installed for construction purposes will be monitored regularly to ensure that they are fully functional and any issues identified are resolved in a timely fashion. Maximize the distance of all construction equipment used from significant features; operate machinery in the Project Location areas only. Develop and implement a stormwater 	No residual effects.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<p>management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow).</p> <ul style="list-style-type: none"> Maintain effective erosion and sediment control measures as installed during site preparation phase. Vehicle speeds to be restricted to 15 km/h or less on the Project site and speed limit signage posted. Visual monitoring and avoidance of wildlife species encountered during activity. 	
	<u>Decommissioning</u> – Removal Project Components		<ul style="list-style-type: none"> No direct impacts. 	<ul style="list-style-type: none"> Change in the quantity/quality of surface water run-off entering the habitat if vegetation is impacted. 	<p>Potential to be indirectly effected.</p> <p>The significant wildlife habitat occurs ≥50 m from all Project components.</p>	Once during decommissioning phase.	Short-term during the removal of Project components.	<ul style="list-style-type: none"> Develop and implement an erosion and sediment control plan prior to decommissioning. ESC measures should be monitored regularly and removed once vegetation has stabilized. Erosion and sediment control measures (i.e. silt fence) installed for decommissioning purposes will prevent encroachment from construction activities into habitat area. Vehicle speeds to be restricted to 15 km/h or less on the Project site and speed limit signage posted. Visual monitoring and avoidance of wildlife species encountered during activity. 	No residual effect.
Amphibian Breeding Habitat (Wetland) (ABHWE1*, ABHWE2*, ABHWE5*, ABHWE6*, ABHWE7*, ABHWE8*, ABHWE9*, ABHWE11*, ABHWE12*,	<u>Construction Site Preparation</u> - Vegetation Clearing, Grubbing and Grading	<p>Project components within 50 m these habitats include:</p> <ul style="list-style-type: none"> Access roads Perimeter fence Solar panels Overhead Cable Area of Operational Flexibility <p>The majority of the amphibian breeding habitat is located at least 5 m</p>	<ul style="list-style-type: none"> Loss of woodland habitat (1.73 ha) Where significant ABHWE habitat occurs within an area of operational flexibility, a 5 m setback will be applied. 	<ul style="list-style-type: none"> Habitat and sensory disturbance to species utilizing the habitat. Mortality of species inhabiting the natural feature during seasonal utilization of the feature. Avoidance of habitat by amphibian breeding populations. Barriers to movement 	<p>Low.</p> <p>Overall percentage of woodland habitat removed is 0.24% from ABHWO1.</p> <p>Where amphibian movement corridors may occur between</p>	Once during construction.	Throughout the construction phase.	<ul style="list-style-type: none"> No amphibian breeding habitats (wetlands) are to be removed. Although ABHWE9* is technically located within the Project Location, there is no permanent development proposed for this area (see Figure 2). For significant habitat within the Project Location, the habitat is to be removed outside of the amphibian breeding season (i.e., April 1- June 30) if seasonal vernal pools are observed prior to clearing activities. Dillon field staff noted that there 	Loss of 0.16% of woodland containing amphibian breeding habitat. Losses are attributed to habitat and now amphibian population. It is anticipated the loss of woodland area

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
<p>ABHWE13*, ABHWE14*)</p> <p>Amphibian Breeding Habitat (Woodland) (ABHWO1, ABHWO2, ABHWO3, ABHWO4*, ABHWO5)</p> <p>Amphibian Movement Corridors*</p> <p>*Pre-construction surveys will be conducted according to methodology presented Appendix A. These surveys will take place in 2015 where access is permitted.</p> <p>These habitats</p>		<p>from the Project Location boundary. Exceptions include:</p> <ul style="list-style-type: none"> • ABHWE7* and ABHWE8* are located adjacent to the Overhead cable • ABHWE12* is within 4 m of an access road • ABHWE13*, ABHWO1, ABHWO2, and ABHWO4* are located adjacent to the Project perimeter fence. Portions of the woodlands containing ABHWO1 and ABHWO2 are within the Project Location. No vernal pools, ponds or wetlands were found within this portion of woodland. 		<p>for amphibian species that breed in wetland areas and subsequently move to woodland areas.</p>	<p>ABHWE and the nearest woodland, corridors to the nearest woodland will remain accessible.</p>			<p>were no vernal pools within the areas of woodland to be removed, however a visual inspection of the breeding habitat (i.e., wetland pockets/ pools) will be undertaken prior to removal to verify if 1) habitat occurs and 2) if breeding amphibians are observed. If observed, construction within 30 m of the breeding pool will be delayed until a subsequent site visit confirms no visual evidence of amphibian breeding.</p> <ul style="list-style-type: none"> • If significant amphibian movement corridor is determined as a result of pre-construction surveys, on-site staff are to be made aware of the corridors and timelines when a greater number of amphibian species may be encountered moving between habitats. It is anticipated that this would be most applicable to ABHWE1 should it be evaluated as significant as these amphibians would move east across an access road to reach Woodland A. If a corridor is determined to be present, exclusion fencing to be constructed at the onset of the Project to prevent movement of amphibians through the Project Location during construction. A qualified professional trained in the identification and handling of amphibians will conduct regular inspections in the area(s) of the corridor to relocate amphibians attempting to move through the Project Location. • The construction workforce will be educated on local wildlife that may be encountered on the Project Location and will be instructed to take measures for avoiding wildlife. A protocol will be provided to contractors to follow in the event wildlife is encountered. • Develop and implement an erosion and sediment control plan prior to decommissioning. • ESC measures should be monitored 	<p>will have no effect on the breeding populations based on the availability of suitable habitat in the area. There should be no residual impacts to wetland breeding populations with the use of mitigation measures. There should be no residual impacts to amphibian movement corridors within the Project Location as amphibians will be able to move through the perimeter fencing. There is potential for a positive residual effect as fields currently used as row crop will be vegetated with more natural grasses etc. and panels may provide protection for moving amphibians.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
have been treated as significant until the evaluation can occur. Please note that the mitigation measures outlined will only be undertaken if the habitat is evaluated to be significant after pre-construction surveys are completed. Where access is not permitted, these will be treated as significant during the construction phase.								<ul style="list-style-type: none"> regularly and removed once vegetation has stabilized. Vehicle speeds to be restricted to 15 km/ hr or less on the Project site and speed limit signage posted. A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. 	
	Construction- Installation of Project components		<p>Following the removal of 1.12 ha of ABHWO1 and 0.61 ha of ABHWO2 no direct impacts. Where significant ABHWE habitat occurs within an area of operational flexibility, a 5 m setback will be applied.</p>	<ul style="list-style-type: none"> Potential for imported gravel material to enter into habitat during storm events. Stockpiled material being exposed to erosion processes, including wind and surface runoff. Increased runoff during storm events as a result of reduced infiltration in localized areas. Reduction in permeability of the Project Location and increased volume of surface flow to adjacent areas. Disturbance/incidental mortality to wildlife species. Altered water levels in wetlands. 	Medium. Some habitats are 0 m from the Project Location boundary.	Once during construction.	Throughout construction. Project components will remain in place for the lifespan of the Project.	<ul style="list-style-type: none"> Develop and implement a sediment and erosion control (ESC) plan prior to site preparation activities. Erosion and sediment control measures (i.e. silt fence) installed for construction purposes will be monitored regularly to ensure that they are fully functional and any issues identified are resolved in a timely fashion. Avoid stockpiling or storing materials and/or equipment within 30 m of significant amphibian breeding habitat. Maximize the distance of all construction equipment used from significant features; operate machinery in the Project Location areas only. Develop and implement a stormwater management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow). A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. Design roads to promote infiltration (e.g. use of gravel materials). If dewatering of cable trenches is necessary, direct all discharged water away from significant wildlife habitat. Spill containment structures will be constructed at the Main HV substation 	<p>Site preparation activities will be temporary and short (months) duration. No effects are anticipated in operations phase.</p> <p>No adverse effects on natural features are anticipated with implementation of mitigation measures.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<ul style="list-style-type: none"> transformer. Contingency measures, including a spill response plan will be developed and implemented as required. Vehicle speeds to be restricted to 15 km/h or less on the Project site and speed limit signage posted. Visual monitoring and avoidance of wildlife species encountered during activity. 	
	<p><u>Operations</u> – Maintenance of the Perimeter Fence and Access Roads; Periodic Use of Access Roads</p>		<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> Habitat and sensory disturbance to species utilizing the habitats adjacent to the Project Location. Incidental mortality to wildlife species. Potential for imported gravel material to enter into habitat during storm events. 	Low.	Fence may require periodic repair depending on circumstance. Roads may require grading/maintenance periodically to maintain condition.	The perimeter fence and access roads will remain in place for the lifespan of the Project.	<ul style="list-style-type: none"> Usage of de-icing salts is anticipated to be minimized on access roads. Vehicle speeds to be restricted to 15 km/h or less on the Project site and speed limit signage posted. Visual monitoring and avoidance of wildlife species encountered during activity. Unnecessary vehicle traffic on-site should be kept to a minimum when amphibians would be using significant amphibian movement corridors. Where an amphibian movement corridor is evaluated to be significant and intersects with an access road, signage should be posted. 	No residual effect.
	<p><u>Decommissioning</u> – Removal Project Components</p>		<ul style="list-style-type: none"> No direct impacts. 	<ul style="list-style-type: none"> Change in the quantity/quality of surface water run-off entering the habitat if vegetation is impacted. 	Potential to be indirectly effected.	Once during decommissioning phase.	Short-term during the removal of Project components.	<ul style="list-style-type: none"> Develop and implement a sediment and erosion control plan prior to decommissioning. ESC measures should be monitored regularly and removed once vegetation has stabilized. Erosion and sediment control measures (i.e. silt fence) installed for decommissioning purposes will prevent encroachment from construction activities into habitat area. Vehicle speeds to be restricted to 15 km/h or less on the Project site and speed limit signage posted. 	No residual effect.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<ul style="list-style-type: none"> Visual monitoring and avoidance of wildlife species encountered during activity. 	
<p>American Gromwell (AG2*)</p> <p>Soft-hairy False Gromwell (SHFG4*, SHFG5*)</p> <p>*Pre-construction surveys will not be conducted within these habitats due to accessibility/access permission.</p>	<p><u>Construction Site Preparation</u>-Vegetation Clearing, Grubbing and Grading</p>	<p>AG2* and SHFG4* are adjacent to the overhead cable.</p> <p>SHFG5* is within 50 m of the perimeter fence and solar panels.</p>	<ul style="list-style-type: none"> No direct physical impacts to the species or the habitat anticipated as no activities are proposed within habitat area. 	<ul style="list-style-type: none"> Increased surface runoff from exposed soils (SHFG5* only) Loss of species. 	<p>Low. The significant wildlife habitat occurs adjacent to roadside outside of the Project Location boundary.</p>	<p>Once during the site preparation phase.</p>	<p>Until vegetative cover is restored during the operations phase.</p>	<ul style="list-style-type: none"> Develop and implement a sediment and erosion control (ESC) plan prior to site preparation activities. ESC measures (i.e. silt fence) installed for construction purposes will delineate the extent of the flora habitat from the active construction area. ESC structure should be monitored regularly to ensure that is fully functional and any issues identified are resolved in a timely fashion. If construction occurs within 5 m of significant habitat during the growing season, the habitat will be searched for the target plant species and each located target plant flagged to increase awareness of its location to avoid incidental trampling. Maximize the distance of all construction equipment used from significant features; operate machinery in the Project Location areas only. Develop and implement a stormwater management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow). A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. All construction equipment used for the Project should enter the site clean and free of debris. Construction equipment will be visually inspected prior to first entry into the active construction area for evidence of plant material. If the construction equipment leaves the property during the construction phase, it is to be reinspected 	<p>No residual effect.</p>

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								prior to resuming work within the active construction area.	
	<u>Construction – Installation of Perimeter Fence</u> (SHFG5* only)		Disruption of underground roots within significant habitat and along edges of significant habitat during installation of perimeter fence.	Potential for construction equipment to enter woodlands.	Limited to incidental.	Once during construction.	Throughout construction.	<ul style="list-style-type: none"> If installation of the perimeter fence occurs within 5 m of significant habitat during the growing season, the habitat will be searched for the target plant species and each located target plant flagged to increase awareness of its location to avoid incidental trampling. 	No residual effects.
	<u>All phases-</u> Use of vehicles and machinery during construction, operations, and decommissioning.		<ul style="list-style-type: none"> No direct effect on habitat as it is located outside of the Project Location. 	<ul style="list-style-type: none"> Emissions: Potential for air pollution from dust and emissions from constructions vehicles and machinery and equipment. Overall impact to air quality during construction, operations, and decommissioning. Leaks and Spills: Potential for leak or spill of fuel and other deleterious substances from vehicles and machinery that affect woodland wildlife. 	<p>Low.</p> <p>Emissions: Slight/ temporary change to air quality.</p> <p>Leaks and Spills: Minimal localized effect if any.</p>	<p>Once during construction.</p> <p>Minimal during operations.</p> <p>Once during decommissioning.</p>	Short- term.	<ul style="list-style-type: none"> All vehicles, machinery and equipment must be maintained and equipped with emission controls, as applicable by provincial standards. Construction work shall be carried out as according to CEPA, and applicable air emission regulations and by-laws. Implement BMP’s and establish an emergency spill plan. Ensure that emergency spill kit is available at the Project Location at all times in the even that a spill occurs. All spills and leaks of deleterious substances must be immediately contained and cleaned up in accordance with provincial regulatory requirements and reported immediately to the Ontario Spills Action Centre (1-800-268-6060). Maintain log book of any spills and mitigation measures. Excess material will be removed from the site. No refuelling or maintenance of vehicles within 30 m of natural features. 	No residual effects.
Hill’s Pondweed	<u>Construction -</u>	Project components within 50 m of	<ul style="list-style-type: none"> None. No 	<ul style="list-style-type: none"> Decreased water 	Low. Only have	Once during	Until	<ul style="list-style-type: none"> Provide a setback of at least 5 m from the 	No residual effects.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
(HP1*, HP3*, HP4*, HP5*, HP6*) *Pre-construction surveys will be conducted according to methodology presented Appendix A . These surveys will take place in 2015. These habitats have been treated as significant until the evaluation can occur. Please note that the mitigation measures outlined will only be undertaken if the habitat is evaluated to be significant after pre-construction surveys are completed.	Vegetation Clearing, Grubbing and Grading Installation of Project Components	these habitats include: <ul style="list-style-type: none"> Perimeter fence Solar panels Access Roads Area of Operational Flexibility HP1* is within 7 m of an area of operational flexibility HP3* is immediately adjacent to the perimeter fence HP4* is 9 m from the perimeter fence HP5* and HP6* are within an area of operational flexibility.	development is proposed within the habitat.	quality.	the potential to be indirectly affected.	construction.	vegetative cover of the project area is restored during the operations phase.	edge of significant habitat for Hill's Pondweed and a Project component. <ul style="list-style-type: none"> Develop and implement a sediment and erosion control (ESC) plan prior to site preparation activities. ESC measures (i.e. silt fence) installed for construction purposes will delineate the extent of the habitat from the active construction area. ESC structure should be monitored regularly to ensure that is fully functional and any issues identified are resolved in a timely fashion. Maximize the distance of all construction equipment used from significant features; operate machinery in the Project Location areas only. Develop and implement a stormwater management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow). A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration. 	
Redheaded Woodpecker (RHW1) Harlequin Darner (HD5*, HD10*)	<u>Construction Site Preparation</u> - Vegetation Clearing, Grubbing and Grading	Redheaded Woodpecker habitat is 10 m from the Project Location. Project components within 50 m of this habitat include:	<ul style="list-style-type: none"> No direct effects. 	<ul style="list-style-type: none"> Disturbance to wildlife habitat and breeding birds. 	Low.	Once during construction.	Throughout construction phase.	<ul style="list-style-type: none"> Limits of construction work to be staked in the field in order to minimize disturbance to the adjacent wildlife habitat. Construction envelope to be clearly demarcated and kept as small as possible. 	No residual effects.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
		<ul style="list-style-type: none"> Perimeter fence Access roads Solar panels <p>Harlequin Darner habitat is 0 m from the Project Location. HP5* and HP10* are directly adjacent to existing roads. No other Project components are within 50 m.</p>						<ul style="list-style-type: none"> No treed vegetation associated with RHW1 will be removed. 	
<i>Other- Best Management Practices (includes consideration for Generalized Candidate Significant Wildlife Habitat)</i>									
Incidental Wildlife Occurrences	All phases- Use of vehicles and machinery during construction, operations, and decommissioning.	N/A	<ul style="list-style-type: none"> Accidental injury or mortality of wildlife entering the Project Location. 	<ul style="list-style-type: none"> Disturbance/harassment of wildlife within the Project Location. 	Potential for occurrences of wildlife within the Project Location.	Incidental occurrences.	Life of the Project.	<ul style="list-style-type: none"> Use Best Management Practices to prevent impacts to wildlife within the area. Sediment and erosion control measures (i.e., silt fence) will be installed to deter wildlife from entering the construction site during construction and decommissioning. Minimize impacts to breeding birds (April 1 to August 31) by clearing naturalized vegetation outside of the breeding bird season. Should any clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed 48 hours prior to clearing activities. If nests are found, works within 10 m will cease until nest has fledged. If no nests are present, clearing can occur. This is in accordance with the federal Migratory Bird Convention Act. The construction workforce will be educated on local wildlife that may be encountered on the Project Location and will be instructed to take measures for avoiding wildlife. A protocol will be provided to contractors to follow in the 	No residual effect.

Significant or Provincially Significant Natural Feature Affected by Activity	Project Phase & Activity within 50 m of Natural Feature	Distance to Nearest Project Component and Other Components within 50 m	Potential Negative/Positive Effect(s)		Magnitude of Effect	Frequency of Effect	Duration of Effect	Mitigation Measures	Residual Effects
			Physical Impact (Direct)	Functional Effect (Indirect)					
								<p>event wildlife in encountered. This protocol will include specific measures for dealing with turtles, breeding birds and other wildlife.</p> <ul style="list-style-type: none"> • Wildlife located within the Project Location will be relocated to an area outside the Project Location (and into an area of appropriate habitat) as necessary. 	

10. ENVIRONMENTAL EFFECTS MITIGATION AND MONITORING PLAN

The Environmental Effects Mitigation and Monitoring Plan (EEMMP) prepared for the Project outlines the mitigation measures to minimize the environmental effects of engaging the Project (**Table 12**). The mitigation measures outlined in **Table 12** below are in response to the physical impacts and function effects that have potential to occur during the construction, design and operation, and decommissioning of the facility and are specific to significant natural heritage features outlined in **Table 11**. These will form part of the overall EEMMP for the Project in the *Design and Operations Report* and the *Construction Plan Report*, as applicable. **Table 12** also summarizes the monitoring plan and monitoring frequency during operation of the facility, as well as contingency measures that will be undertaken if performance objectives are not achieved. **Table 12** should be read in conjunction with **Tables 10** and **11** which outline the features and attributes necessary for persistence, features potentially sensitive to development and features that serve as good indicator features or species.

Table 12: Environmental Effects Mitigation and Monitoring Plan

Significant/ Provincially Significant Natural Feature(s) Affected by Activity	Potential Positive/Negative Environmental Effects		Performance Objective	Environmental Effects Mitigation and Monitoring Plan						Contingency Measures
	Physical	Functional		Mitigation Measure	Monitoring Strategy & Methods	Monitoring Locations	Frequency & Duration	Technical and Statistical Value of Data	Reporting Requirements	
SITE PREPARATION & CONSTRUCTION PHASE OF PROJECT										
(Assumed) Provincially Significant Wetlands 4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32 Significant Woodlands A,B,C,D,E,I Turtle Nesting Areas TNA1* Turtle Wintering Areas TWA1*, TWA2* Significant and Treated as* Significant Amphibian Breeding Habitat (wetland) ABHWE1*, ABHWE2*, ABHWE5*, ABHWE6*, ABHWE7*, ABHWE8*, ABHWE9*, ABHWE11*, ABHWE12*, ABHWE13*, ABHWE14* Significant and Treated as Significant Amphibian Breeding Habitat (woodland) ABHWO1, ABHWO2, ABHWO3, ABHWO4*, ABHWO5 Woodland Area-sensitive Bird Breeding Habitat ASBB1 Treated as Significant Hill's Pondweed Habitat	Permanent removal of 1.12 ha of Woodland A (which includes ABHWO1, and ASBB1 Habitat), 3.67 ha of Woodland B and 0.61 ha of Woodland C (which includes ABHWO2 and Generalized Candidate Significant Habitat) No other significant natural features directly impacted	Change in surface water run-off volumes/ patterns. Potential changes to water quality. Reduction in quality of habitat. Potential loss of linear treed connectivity between woodlands. Isolation of TNA1* from landscape	Persistence of significant natural features Significant wildlife habitat will continue to meet the criteria for significance post-construction. General connectivity between woodlands maintained at a local landscape level	Cleared lands to be vegetated as soon as practical following construction activities. Internal project access roads to be constructed at or near grade and the use of impermeable materials. <u>Setbacks</u> <ul style="list-style-type: none"> Setbacks between significant woodlands and the project perimeter fence to follow ISA Arborist standards. A minimum 5 m setback to be applied to significant wildlife habitat within the Project Location within areas of operational flexibility. <u>Erosion and Sediment Control</u> Minimize soil exposure. Install erosion and sediment control measures prior to vegetation clearing, grubbing and grading to prevent mobilization of sediment and other contaminants from the Project Location into the surrounding landscape. Restrict vegetation clearing to lands within Project Location identified for development. <u>Stormwater Management</u> Develop and implement a stormwater management plan to ensure drainage patterns are not significantly altered from existing conditions due to road drainage, reduction in surface permeability, etc. A plan to address/mitigate soil compaction throughout the Project Location to be developed as part of the detailed design to promote infiltration.	Monitor erosion and sediment control (ESC) measures regularly during site preparation and construction. Monitor exclusion fencing regularly during site preparation and construction and relocate wildlife as outlined in this <i>NHA EIS</i> . Follow recommendations in the SWM Plan and/or REA issued by the MOECC to monitor effectiveness of water flow management measures; ensure flow is free of sedimentation. Pre-construction surveys to evaluate the significance of ABHWE2*, ABHWE5*, ABHWE6*, ABHWE7*, ABHWE8*, ABHWE9*, ABHWE11*, ABHWE12*, ABHWE13*, ABHWE14*, ABHWO4*, HP1*, HP3*, HP4*, HP5*,	ESC measures to be monitored where implemented according to the ESC plan. Wildlife monitoring to occur where fencing to exclude has been installed near significant wildlife habitat. Monitor for surface water quality at locations identified in the SWM Plan and/or REA issued by the MOECC. Monitoring location for significant natural features in the same location as pre-construction surveys (see Appendix B of the <i>NHA Evaluation of Significance Report</i> and Appendix A).	Monitor ESC measures regularly during construction. ESC monitoring to occur monthly or after rain events 10 mm or greater (within 24 hrs) until vegetation is re-established. Wildlife monitoring to occur on an ongoing basis throughout the construction phase. Monitor for surface water quality at a frequency and duration identified in the SWM Plan and/or REA issued by the MOECC. Three years of post-	Comparison of significant habitat persistence post-construction. Surface water quality reporting requirements as per SWM plan and/or the REA issued by the MOECC. Following detailed design of the Project, a memo is to be issued to the MNRF with the final design for the project and the determinations made to quantify tree compensation and to mitigate impacts of isolating TNA1* (if evaluated to be significant).	ESC inspection checklist log compiled for each monitoring event. Repair deficiencies in ESC structures as soon as possible upon notification of breach in ESC structure and buffer fencing. Consultation to occur with the MNRF if performance objectives not achieved following post-construction monitoring.	

Significant/ Provincially Significant Natural Feature(s) Affected by Activity	Potential Positive/Negative Environmental Effects		Performance Objective	Environmental Effects Mitigation and Monitoring Plan					Contingency Measures	
	Physical	Functional		Mitigation Measure	Monitoring Strategy & Methods	Monitoring Locations	Frequency & Duration	Technical and Statistical Value of Data		Reporting Requirements
<p>HP1*, HP3*, HP4*, HP5*, HP6*</p> <p>Treated as Significant Habitat for American Gromwell AG2*</p> <p>Treated as Significant Habitat for Soft-Hairy False Gromwell SHFG4*, SHFG5*</p> <p>Significant Redheaded Woodpecker Habitat RHW1</p> <p>Treated as Significant Harlequin Darner Habitat HD5*, HD10*</p> <p>Treated as Significant Amphibian Movement Corridor</p> <p>Generalized Candidate Significant Wildlife Habitat</p>				<p><u>Vegetation Considerations</u></p> <p>Woodland removal and/or removal of sensitive natural features to be minimized if possible during detail design.</p> <p>Where linear fencerows/hedgerows one to two trees in width are continuous with Significant Woodland A, B or C and within the Project Location, the number of trees will be quantified following issuance of the REA for the project by the MOECC and prior to construction. Trees to be removed to facilitate construction to be replaced at a 1:1 ratio. If the trees are able to be avoided, compensation will no longer be required.</p> <p>If the treed area that is part of Woodland B and within the Project Location cannot be avoided through detailed design, 3.67 ha of woodland area will be compensated for.</p> <p>If construction occurs within 5 m of significant habitat during the growing season, the habitat will be searched for the target plant species and each located target plant flagged to increase awareness of its location to avoid incidental trampling.</p> <p><u>Wildlife Considerations</u></p> <p>Utilize fencing (e.g., Perimeter fencing and/or silt fencing) to deter wildlife from entering the construction site during construction and decommissioning.</p> <p>The construction workforce will be educated on local wildlife that may be encountered on the Project Location and will be instructed to take measures for avoiding wildlife. A protocol will be provided to contractors to follow in the event wildlife is encountered. This protocol will include specific measures for dealing with turtles, breeding birds and other wildlife.</p>	<p>HP6*, HD5*, HD10*, TNA1*, TWA1*, TWA2*, AG2*, SHFG4*, SHFG5*, Amphibian Movement Corridors*(Methodology as outlined in the <i>NHA Environmental Impact Study Appendix A)</i></p> <p>Significant woodland area to be quantified prior to construction where trees are identified for removal through detailed design</p>	<p>Locations for quantifying woodland compensation will be in Woodland A, B and/or C, within the Project Location as defined through detailed design.</p>	<p>construction monitoring for significant wildlife habitat.</p> <p>Post-construction monitoring at TNA1* should occur during the first three nesting seasons following the completion of construction to determine if turtles are isolated within feature.</p>			

Significant/ Provincially Significant Natural Feature(s) Affected by Activity	Potential Positive/Negative Environmental Effects		Performance Objective	Environmental Effects Mitigation and Monitoring Plan					Contingency Measures	
	Physical	Functional		Mitigation Measure	Monitoring Strategy & Methods	Monitoring Locations	Frequency & Duration	Technical and Statistical Value of Data		Reporting Requirements
			<p>Wildlife located within the Project Location will be relocated to an area outside the Project Location (and into an area of appropriate habitat) as necessary. This will be completed by a professional trained in the safe handling of wildlife.</p> <p>If either TWA1 or TWA2 habitats are determined to be significant, exclusion fencing to be constructed to prevent entry of turtles north into the Project Location during the periods when turtles may be migrating to/from significant habitat features (i.e., March- May to avoid turtles emerging from wintering habitats, and the September- October window to avoid turtles travelling to wintering habitats).</p> <p>If TNA1* is determined to be significant, fencing to exclude turtles from entering into Project Location to be constructed prior to nesting season (May).</p> <p>Regular sweeps of the Project Location perimeter nearest to TNA1* and in Project Location around TNA1* to search for turtles that may be moving to habitat feature. If a turtle is identified, relocation/handling to be undertaken by an individual qualified in turtle species identification, handling, and habitat requirements.</p> <p>An individual qualified in turtle species identification, handling, and habitat requirements will relocate turtles observed within Wetland 21 to suitable habitat within the general area (i.e., within 1 km).</p> <p>Prevent movement of turtle hatchlings/amphibians through the perimeter fence during the construction phase to reduce potential for mortality.</p>							

Significant/ Provincially Significant Natural Feature(s) Affected by Activity	Potential Positive/Negative Environmental Effects		Performance Objective	Environmental Effects Mitigation and Monitoring Plan					Contingency Measures	
	Physical	Functional		Mitigation Measure	Monitoring Strategy & Methods	Monitoring Locations	Frequency & Duration	Technical and Statistical Value of Data		Reporting Requirements
			<p>If TNA1* is evaluated to be significant, consultation to be undertaken with the Electrical Safety Authority to determine if a modified fencing design (e.g., use of page wire) is permissible to facilitate movement of hatchlings and larger bodied turtles past the perimeter fencing. MNRF to approve final mitigation measures related to turtle nesting habitat prior to commencement of construction of the Project on the property that includes TNA1*. This includes, but may not be limited to, a modified fence design.</p> <p>Minimize impacts to breeding birds (April 1 to August 31) by clearing naturalized vegetation outside of the breeding bird season. Should any clearing be required during the breeding bird season, nest searches conducted by a qualified person must be completed 48 hours prior to clearing activities. If nests are found, works within 10 m will cease until nest has fledged. If no nests are present, clearing can occur. This is in accordance with the federal <i>Migratory Bird Convention Act</i>.</p> <p>No amphibian breeding habitats (wetlands) are to be removed. Although ABHWE9* is technically located within the Project Location, there is no permanent development proposed for this area (see Figure 2) If an amphibian corridor is determined to be present, exclusion fencing to be constructed at the onset of the Project to prevent movement of amphibians through the Project Location during construction. A qualified professional trained in the identification and handling of amphibians will conduct regular inspections in the area(s) of the corridor to relocate amphibians attempting to move through the Project Location.</p> <p>The areas of ABHWO1 and ABHWO2 habitat associated with Woodlands A and C are to be</p>							

Significant/ Provincially Significant Natural Feature(s) Affected by Activity	Potential Positive/Negative Environmental Effects		Performance Objective	Environmental Effects Mitigation and Monitoring Plan					Contingency Measures	
	Physical	Functional		Mitigation Measure	Monitoring Strategy & Methods	Monitoring Locations	Frequency & Duration	Technical and Statistical Value of Data		Reporting Requirements
			<p>removed outside of the amphibian breeding season (i.e., April 1- June 30) if seasonal vernal pools are observed prior to clearing activities. Dillon field staff noted that there were no vernal pools within the areas of woodland to be removed, however a visual inspection of the breeding habitat (i.e., wetland pockets/ pools) will be undertaken prior to removal (i.e., during 2015 breeding season) to verify if 1) habitat occurs and 2) if breeding amphibians are observed. If observed, construction within 30 m of the breeding pool will be delayed until a subsequent site visit confirms no visual evidence of amphibian breeding.</p> <p>Vehicle speeds to be restricted to 15 km/hr or less on the Project site and speed limit signage posted.</p> <p>Unnecessary vehicle traffic on-site should be kept to a minimum when amphibians would be using significant amphibian movement corridors. Where an amphibian movement corridor is evaluated to be significant and intersects with an access road, signage should be posted.</p> <p><u>Generalized Candidate Significant Wildlife Habitat</u></p> <p>No access roads are to be constructed or operated within 50 m of the boundaries of generalized habitat for plant species of special concern or amphibian breeding habitat in accordance with Appendix D of the <i>Natural Heritage Assessment Guide for Renewable Energy Projects</i> (MNRF 2012).</p>							

11. NEGATIVE ENVIRONMENTAL EFFECTS, DESIGN AND OPERATIONS

The REA regulation requires an environmental effects monitoring plan as a part of the *Design and Operations Report* to demonstrate how negative environmental effects of the Project will be mitigated, and set out a program for ongoing monitoring of the effectiveness of the mitigation measures. However, through the NHA, the Project Location has been defined to avoid directly impacting significant features. After the construction phase of the Project, there are no expected impacts or effects that would require ongoing mitigation measures or monitoring. As such, information relating to significant natural features is not required to be included in the environmental effects monitoring plan for the Project *Design and Operations Report*. Additional mitigation measures proposed to minimize impacts of the facility and not related to significant natural features are summarized in the *Design and Operations Report*.

12. NEGATIVE ENVIRONMENTAL EFFECTS, CONSTRUCTION

The REA regulation requires that a *Construction Plan Report* be prepared to demonstrate how negative environmental effects of construction activities will be mitigated including modifications to construction activities, use of treatment technologies (e.g. Erosion and Sediment Control structures), and scheduling of activities. **Table 12** above provides a description of performance objectives in respect of each negative environmental effect; mitigation measures planned to achieve performance objectives; how the Project is to be monitored; and a contingency plan to be implemented should monitoring reveal that mitigation measures have failed. **Table 12** has been prepared for inclusion in the Project *Construction Plan Report*. Additional mitigation measures proposed to minimize impacts of the facility and not related to natural features are summarized in the *Construction Plan Report*.

13. CONCLUSIONS

Through a records review, site investigation and natural features evaluation of significance, it was determined that significant natural features exist within the Project Location and 50 m setback (**Figure 3, 4, 5A-5J**). As such, an *NHA EIS* report was required under Section 38 of *O. Reg. 359/09*. This fourth and final report therefore satisfies the requirements under *O. Reg. 359/09* with respect to an NHA.

This *NHA EIS* report demonstrates how negative environmental effects of the Project will be mitigated, and sets out a program for ongoing monitoring of the effectiveness of the mitigation measures. **Table 12** above provides a description of performance objectives in respect of each negative environmental effect; mitigation measures planned to achieve performance objectives; how the Project is to be monitored; and a contingency plan to be implemented should monitoring reveal that mitigation measures have failed. The *NHA EIS* report was completed to mitigate potential negative environmental effects to the following significant natural features within the Project Location and surrounding 50 m (Please note that * denotes 'treated as' significant and pre-construction surveys will be completed to evaluate wildlife habitat where access is permitted):

- Wetlands 4, 6, 7, 9, 11, 13, 14, 17, 18, 20, 21, 22, 23, 26, 29, 30, and 32
- Woodland A, B, C, D, E and I
- Wildlife Habitat

Seasonal Concentration Areas

- Turtle Wintering Areas TWA1*, TWA2*

Specialised Habitat for Wildlife

- Turtle Nesting Areas TNA1*
- Amphibian Breeding Habitat (Wetland) ABHWE1*, ABHWE2*, ABHWE5*, ABHWE6*, ABHWE7*, ABHWE8*, ABHWE9*, ABHWE11*, ABHWE12*, ABHWE13*, ABHWE14*
- Amphibian Breeding Habitat (Woodland) ABHWE1, ABHWE2, ABHWO3, ABHWO4*, ABHWO5

Habitat of Species of Conservation Concern

- Woodland Area-Sensitive Bird Breeding Habitat ASBB1
- American Gromwell AG2*
- Hill's Pondweed HP1*, HP3*, HP4*, HP5*, HP6*
- Soft-hairy False Gromwell SHFG4*, SHFG5*
- Redheaded Woodpecker RHW1
- Harlequin Darner HD5*, HD10*

Animal Movement Corridors

- Amphibian Movement Corridors*
- Generalized Candidate Significant Wildlife Habitat

Table 12 outlines how the activities related to the construction, operation and decommissioning of the facility affect these natural features and the appropriate mitigation and monitoring work to be implemented to mitigate or avoid the potential negative environmental effects of the Project.

14. REFERENCES

Ontario Ministry of Natural Resources and Forestry. 2000. Significant Wildlife Habitat Technical Guide. 151pp.

Ontario Ministry of Natural Resources and Forestry. 2002. Ontario Wetland Evaluation System Southern Manual (3rd Edition). Revised December 2002.

Ontario Ministry of Natural Resources and Forestry. September 2009. Approval and Permitting Requirements Document for Renewable Energy Projects. September 24, 2009.

Ontario Ministry of Natural Resources and Forestry. March 2012. Significant Wildlife Habitat 7E Ecoregion Criteria Schedule. 37pp.

Ontario Ministry of Natural Resources and Forestry. November 2012. Natural Heritage Assessment Guide for Renewable Energy Projects. Queen's Printer for Ont.

APPENDIX A

Pre-Construction Survey Methodology

PRE-CONSTRUCTION SURVEY METHODOLOGY

Please find below details of the pre-construction surveys for wildlife habitat 'treated as' significant. The surveys will be conducted by qualified biologists during appropriate timing windows and using MNR approved methodologies.

1. Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (MNR 2000), supported by the Significant Wildlife Habitat Ecoregion 6E Criterion Schedule (MNR 2012b), is the authoritative source for the identification and evaluation of significant wildlife habitat. Information collected to evaluate wildlife habitat as significant often requires specific studies targeted to the species, the habitat, or both. In some instances, when evaluating candidate wildlife habitat, consideration was given to the size of the individual habitat relative to the amount of habitat in the region (i.e., percentage of regional composition for a given habitat community within 10 km of the Project Location) and occurrence of unique characteristics. Methodologies used to investigate the candidate wildlife habitat identified during the site investigation are further outlined in below.

Where appropriate studies to determine the significance of a wildlife habitat have not been conducted, wildlife habitat will be treated as significant and studies will be completed prior to construction. The methods to be implemented in order to confirm the status of wildlife habitat treated as significant will be outlined in the EIS.

1.1 Seasonal Concentration Areas

Turtle Wintering Areas

Turtle wintering habitat that was treated as significant will be evaluated by performing visual encounter surveys to identify congregations of turtles on warm, sunny days during the spring (March to May) or fall (September –October) of 2015 (one season) when turtles may be emerging from wintering habitat. Three (3) basking surveys will be conducted during the appropriate time of year (weather/temperature dependent). Visual searches will include observations of basking features present within the candidate habitat, including large rocks, man-made structures, logs, branches, and shoreline and of turtles seen. Notes will be taken to indicate where in the delineated habitat turtles are observed (if applicable). If turtles in the appropriate abundances according to the Ecoregion 6E criterion schedule are observed (MNRF 2012), the habitat will be evaluated as significant.

1.2 Specialised Habitat for Wildlife

Turtle Nesting Areas

Turtle nesting habitat that was treated as significant will be evaluated by performing visual encounter surveys to identify congregations of turtles on warm, sunny days during the prime nesting season. A minimum of three (3) nesting surveys will be conducted between late spring to early summer (May to July). Visual searches will include observations of appropriate nesting substrate and basking features present within the candidate habitat, including large rocks, man-made structures, logs, branches, and shoreline. Notes will be taken to indicate where in the delineated habitat turtles are observed (if applicable). If turtles in the appropriate abundances according to the Ecoregion 6E criterion schedule are observed (MNRF 2012), the habitat will be evaluated as significant.

Amphibian Breeding Habitat (Wetland and Woodland)

Amphibian monitoring will follow the Marsh Monitoring Program protocol (Bird Studies Canada, 2009). Three different surveys will be conducted between April 1 and June 30, with at least two weeks between each survey. Surveys will begin at least one half hour after sunset during evenings with a minimum night temperature of 5°C, 10°C and 17°C for each of the three respective surveys. Survey points will align with wetland features observed within the

habitat. See **Figure A1**. In addition, one targeted search for evidence of salamanders will be undertaken following ice melt from breeding pools.

Each amphibian survey will generally involve standing at a predetermined station for 3 minutes and listening for frog calls. The calling activity of individuals estimated to be within 100 m of the observation point will be documented. All individuals beyond 100 m will be recorded as outside of the count circle and calling activity not recorded. Calling activity will then be ranked using one of the following three abundance code categories:

Code 1: Calls not simultaneous, number of individuals can be accurately counted;

Code 2: Some calls simultaneous, number of individuals can reliably be estimated;

Code 3: Calls continuous and overlapping, number of individuals cannot be estimated.

In areas where appropriate habitat exists, vernal pools were also visually examined for egg masses and amphibian larvae in conjunction with other field surveys. These searches occurred between April and June when amphibians were concentrated around suitable breeding habitat. Searches involved walking along the perimeter of the vernal pools/ wetlands, looking for egg masses or juveniles as indicators of amphibian breeding. Searches focused on submergent vegetation and woody debris where amphibians will attach single eggs or masses of eggs.

1.3 Habitats of Species of Conservation Concern

Hill's Pondweed

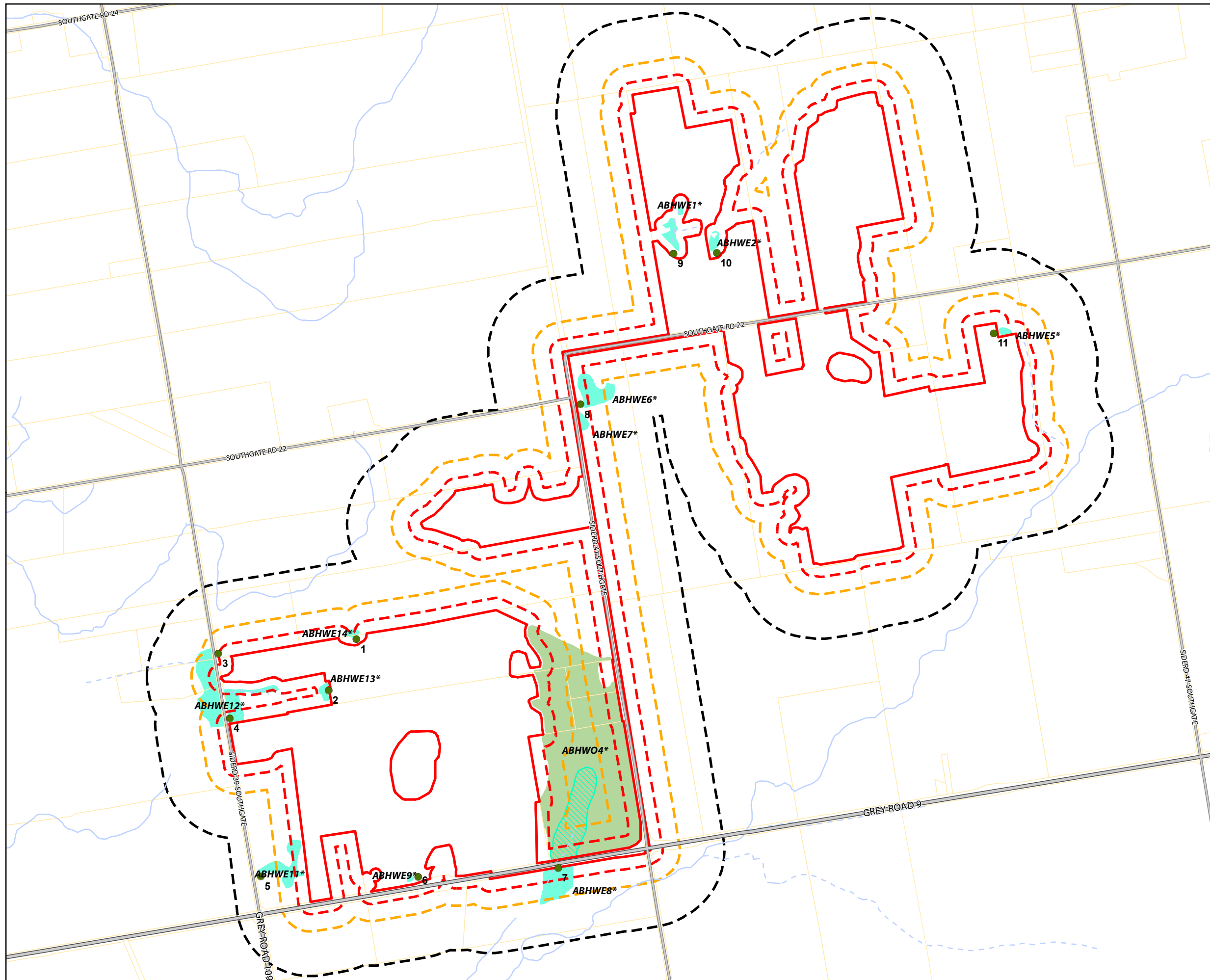
The evaluation methodology that will be used to determine the significance of the habitat for Hill's Pondweed is as follows: the open water areas that have been treated as significant wildlife habitat for Hill's Pondweed (HP1*, HP2*, HP3*, HP4*, HP5*, HP6*) will be visually examined for presence of this species during a time of year when the vegetation would be apparent (May- September), and if it is present this habitat will be considered Significant for Hill's Pondweed.

1.4 Animal Movement Corridors

Amphibian Movement Corridors

To evaluate candidate amphibian movement corridors within the Project Location, all amphibian breeding habitats (wetland) treated as significant must first be evaluated to determine where potential corridors may exist. Once amphibian breeding habitat (wetland) is confirmed, and if woodland species are using the feature, field staff will evaluate potential connections (corridors) between the amphibian breeding habitat (wetland) and the nearest woodland feature (pending access permission).

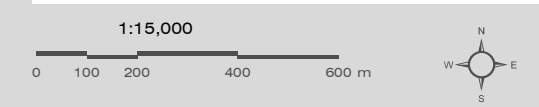
Additional observations will include quality of the candidate amphibian movement corridor in the area between the significant amphibian breeding habitat (wetland) and the nearest woodland. Items such as suitable vegetation for cover, riparian corridors, absence of roads or other barriers, etc. will be noted as well as a visual sweep of the candidate amphibian movement corridor to look for species. The intent of this survey is not to undertake direct sampling by using sampling equipment such as drift nets or pitfall traps but to rationally explore the candidate amphibian movement corridor to determine if features are present that warrant an evaluation of significant. If the candidate amphibian movement corridor between the significant amphibian breeding habitat (wetland) and the nearest woodland has been actively farmed with annual row crops, or is separated by a road, it will not be evaluated as significant.



SOUTHGATE SOLAR PROJECT

**FIGURE A1
PRE-CONSTRUCTION SURVEY STATIONS**

- Preconstruction Amphibian Breeding Habitat Survey Station
- Permanent Watercourse
- - - Intermittent Watercourse
- Project Location
- Project Location 50 m Setback
- Project Location 120 m Setback
- Project Location 300 m Setback
- Treated as Significant Amphibian Breeding Habitat (Wetland)
- Assumed Provincially Significant Wetland
- *Treated as Significant Amphibian Breeding Habitat (Woodland)



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Samsung Southgate\mxd\EIS



PROJECT: 149154
STATUS: DRAFT
DATE: 2/13/2015