

**Suncor Energy Cedar Point Wind
Project - Renewable Energy
Approval Amendment
Modification Report**

File No. 160960709



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**SUNCOR ENERGY CEDAR POINT WIND PROJECT - RENEWABLE ENERGY APPROVAL
AMENDMENT MODIFICATION REPORT**

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1.0 Introduction

1.1 BACKGROUND

Suncor Energy Products Inc. (Suncor) submitted a Renewable Energy Approval (REA) Application on April 16, 2013 to develop, construct and operate the Suncor Energy Cedar Point Wind Power Project (the Project) within the Town of Plympton-Wyoming, the Municipality of Lambton Shores, and Warwick Township all within Lambton County, Ontario.

The proposed Project will include up to 46 wind turbines. The proposed Project would also include access roads, meteorological towers (met towers), electrical collector lines, substation, and a 115 kV transmission line. Suncor has elected to assess and seek approval for some alternative wind turbine locations. The Renewable Energy Approval (REA) application will consider up to nine (9) alternative turbine locations. Final selection of the turbine sites will be determined prior to Project construction and will be based on consultation activities, potential effects assessments, and detailed design / engineering work.

Suncor is seeking a minor amendment to the REA Application as a result of reviewing design features of the layout, address Ministry of the Environment technical review comments, avoid a newly evaluated Provincially Significant Wetland complex, and to address requests made by participating landowners.

This report and its attachments provide information regarding the proposed modifications. Based on the following information, the proposed modifications are considered a "Minor Project Design Change" based upon the classification system outlined in the Ministry of the Environment's *Technical Guide to Renewable Energy Approvals* (October, 2013). As such, this document has been prepared to address the requirements of Chapter 10 "Making Changes to REA Projects" of the Technical Guide.

1.2 SUMMARY AND RATIONALE OF PROPOSED MODIFICATIONS

1.2.1 Modification #1

Project Modification 1 involves the addition of an underground collector line along Douglas Line and Uttoxeter Road entirely within the road right-of-way, from T71 to Townsend Line. **Appendix A, Figure 1** shows the location of the modified underground cable location. The addition of the underground collector line route provides Suncor with greater design flexibility and minimizes pinch points with respect to connecting Project turbines with the substation.

The construction and installation activities for this underground collector line will be completed in the same manner as the collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

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1.2.2 Modification #2

Project Modification 2 involves the addition of an underground collector line along Aberarder Line between Oil Heritage Road and Hillsboro Road entirely within the road right-of-way.

Appendix A, Figure 2 shows the location of the modified underground cable location. The addition of the underground collector line route provides Suncor with greater design flexibility and minimizes pinch points with respect to connecting Project turbines with the substation.

The construction and installation activities for this underground collector line will be completed in the same manner as the collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

1.2.3 Modification #3

Project Modification 3 moves the location of the overhead transmission line (located at the northwest corner of Proof Line and Rawlings Road) off the road right-of-way and onto the adjacent private property. This will involve a change of approximately 2 m further into the agricultural corn field. Moving this transmission line to private land will reduce the amount of transmission line in the municipal right-of-way. **Appendix A, Figure 3** shows the location of the modified transmission line location near the intersection of Proof Line and Rawlings Road.

The construction and installation activities for the transmission line will be completed in the same manner as the transmission line which is described in the Construction Plan Report, submitted as part of the REA Application.

1.2.4 Modification #4

Project Modification 4 includes the addition of a new temporary staging area on Cedar Point Line near the intersection with Fuller Road for additional project laydown area. **Appendix A, Figure 4** shows the location of the new temporary construction area location. The dimensions of this temporary construction area will be approximately 140 m x 140 m. As described in the Construction Plan Report, the substation area was to be used as the temporary staging area prior to its construction. Due to a reduced construction schedule to meet contractual deadlines, the timing of the construction of the substation no longer permits the use of this area as a temporary staging area. As a result, a new temporary staging area is required.

The construction and installation activities for the temporary construction area will be completed in the same manner as the temporary staging areas described in the Construction Plan Report, submitted as part of the REA Application.

To supplement a new temporary staging area, Suncor also proposes to change the text within Table 2.1 of the Construction Plan Report as it relates to the Turbine Laydown Areas. As described in Table 2.1, turbine components will be delivered to each turbine site and stored within the "Turbine Constructible Area" for each turbine shown on the Site Plan. These areas

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have been incorporated into the Project Location design by designating a constructible area (generally 140 m x 140 m around each turbine). Suncor proposes to revise the description of the Turbine Laydown Areas to also include the activities associated with a temporary staging area as described in the Construction Plan Report.

1.2.5 Modification #5

Project Modification 5 moves the location of the access road and underground collector line to Turbine 11 approximately 75 m to the west. Moving this access road and underground collector line moves this location further from Feature 29. **Appendix A, Figure 5** shows the location of the modified underground collector line and access road to Turbine 11. The move is being made by Suncor to address a request made by the participating landowner.

The construction and installation activities for the access road and underground collector line will be completed in the same manner as the access roads and underground collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

1.2.6 Modification #6

Project Modification 6 moves the location of the access road and underground collector line to Turbine 51 approximately 90 m to the east. **Appendix A, Figure 6** shows the location of the modified underground collector line and access road to Turbine 51. The move is being made by Suncor to address a request made by the participating landowner.

The construction and installation activities for the access road and underground collector line will be completed in the same manner as the access roads and underground collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

1.2.7 Modification #7

Project Modification 7 moves the location of the access road and underground collector line to Turbine 23 approximately 90 m to the southwest. Moving this access road and underground collector line moves this location further from woodland and wetland Feature 31/31a. **Appendix A, Figure 7** shows the location of the modified underground collector line and access road to Turbine 23. The move is being made by Suncor to address a request made by the participating landowner.

The construction and installation activities for the access road and underground collector line will be completed in the same manner as the access roads and underground collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

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1.2.8 Modification #8

Minor updates to the Noise Assessment Report (NAR) have been made to address comments provided by the MOE as part of the Technical Review of the NAR. In addition to the updates to address Technical Review comments, the NAR has been updated to address a change in transformer for the Project. The change involves the use of one transformer at the substation rather than two units modelled in previous versions of the NAR and as described in the REA Application. The updated sound level predictions indicate the sound levels at receptors will be at or below the predicted levels included in the NAR as part of the REA Application. The updated NAR was provided to the MOE on May 20, 2014 and will be made available on the Project website.

1.2.9 Modifications #9, #10 and #11

Changes to the location of the overhead transmission line route have been made in the northeast section of the Project. **Appendix A, Figures 8, 9 and 10** show the location of the modified transmission line route. The modification involves a minor shift in the location of the preferred transmission line route and the minor addition of an optional preferred transmission line route in order to avoid Project infrastructure from being located within recently evaluated Provincially Significant Wetland (PSW). Note that only one of the amended transmission line routes will be constructed to avoid Natural Feature 20 as shown in **Appendix A, Figure 8**.

Clarification is also being provided with respect to the location of the alternate transmission line route that is located within the Cedar Point Line road right-of-way (**Appendix A, Figures 10**). The alternate transmission line route remains within the Cedar Point Line road right-of-way, however it is being clarified that the transmission line is proposed to be located on the north side of Cedar Point Line to avoid the PSW associated with Natural Feature 24 and will shift to the south side of Cedar Point Line to avoid the PSW associated with Natural Feature 23. In addition, removal of portions of either of the Natural Features is no longer being proposed. These modifications provide Suncor with greater design flexibility, avoid the PSW and minimize overlap with natural features.

The construction and installation activities for modified transmission line routes will be completed in the same manner as the transmission line which is described in the Construction Plan Report, submitted as part of the REA Application.

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2.0 Results of Effects Assessment for the Project Modification

O. Reg. 359/09 requires that any adverse environmental effects that may result from construction, installation, operation and maintenance activities be described. The term “environment” in O. Reg. 359/09 has the same meaning as in the *Environmental Protection Act*, and includes the natural, physical, cultural, and socio-economic environment.

A screening to identify any new environmental effects that would require additional mitigation or monitoring measures beyond those outlined in the REA documents as a result of the proposed modifications to the Project was completed. Given the changes to the transmission line route, temporary construction area, collector line routes and access roads involves a minor increase/change in size of the Project Location, based on O. Reg. 359/09 requirements, all parts of the Project Location and corresponding Zone of Investigation must be assessed. Update letters related to the Natural Heritage Assessment and Environmental Impacts Study (NHA/EIS) (see **Appendix B**) and modification specific Heritage Assessments and a Stage I Archaeological Assessment (see **Appendix D and E**) have been completed to assess the new portions of the Project Location and corresponding Zone of Investigation. Confirmation letters from the Ministry of Natural Resources (MNR) and Ministry of Tourism, Culture and Sport (MTCS) are also included in the above noted appendices.

The construction and installation methods of the transmission line, temporary staging area, collector lines and access roads will be completed in the same manner as the transmission line, temporary staging area, collector lines and access roads which has already been assessed as part of the REA Application. The modifications will be completed within appropriately assessed areas where no potential environment effects are anticipated. Mitigation measures will be the same as those described for the transmission line, temporary staging area, collector lines and access roads in the REA Application. The proposed modifications are minor in nature and will not result in any new impacts on the environment not previously considered in the REA Application.

The following consultation activities were completed to assess the potential environmental effects of Project modifications:

- Consultation with MNR regarding changes to the Natural Heritage Assessment / Environmental Impact Study (NHA/EIS) documents, including obtaining a confirmation letter from the MNR regarding the NHA/EIS addendum.
- Consultation with MTCS regarding the additional Heritage Assessments that were completed as a result of the modifications, including obtaining written correspondence from the MTCS regarding the submission.

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- Consultation with MTCS regarding the additional Stage 1 Archaeological Assessment that was completed as a result of the modifications, including obtaining written correspondence from the MTCS regarding the submission.

2.1 IMPACTS ON STUDIES/ REA REPORTS

A summary of the Figures to be amended in each REA report is provided in the table below.

2.1.1 Natural Heritage Assessment and Environmental Impact Study

The NHA/EIS (included in the REA Application) identified natural features within the Project Location and the associated 120 m Zone of Investigation around the limits of the Project Location. The Project Location requires a minor modification to account for the change in the transmission line, temporary construction area, collector lines and access roads locations.

A technical review (see **Appendix B**) was conducted to determine if the modifications result in: a change to the identification of natural features within 120 m of the new Project Location; a change to the assessment of impacts and mitigation measures; and the overall assessment of changes to the NHA/EIS. Project Modifications 1, 9 and 11 resulted in a change to the identification of natural features within 50 m of the new Project Location. Information regarding these changes are provided in the sections below.

It was concluded that overall, the modifications will not result in potential effects not previously identified and mitigated in the NHA/EIS.

Further, the proposed modifications do not require any additions to the Environmental Effects Monitoring Plan (EEMP) as submitted with the REA Application.

2.1.1.1 Project Modification 1

One new woodland feature was located within 50 m of the new underground collector line running along Uttoxeter Road. This feature was not identified in the April 2013 NHA/EIS. It is shown on **Appendix A, Figure 1** as new Feature 78. A site investigation of this feature was completed on March 25, 2014. It contains a dry-fresh sugar maple deciduous forest (Ecological Land Classification code FOD5). No candidate wildlife habitat was identified in this feature. This small (0.98 ha) feature is located 29 m from Feature 45 (the woodland to the west of Feature 78) and so is not considered part of the same feature.

No changes are required to the Records Review of the NHA/EIS.

One change is required to the Site Investigation: an update to Table 3.3 to include Feature 78. The updated line to Table 3.3 is attached to the letter report in **Appendix B**.

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One change is required to the Evaluation of Significance: an update to Table 4.2 to include Feature 78. The updated line to Table 4.2 is attached to the letter report to the MNR in **Appendix B**. Feature 78 was determined not to be a significant woodland.

No vegetation removal is required for this modification, as Feature 78 is located 28 m away from the underground cabling, and no other vegetation occurs along the road right-of-way in this section of underground cabling. As all components of the Project remain outside the woodland, there will be no direct loss of habitat or function of Feature 78 as a result of the proposed modification.

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification.

The modified location for the underground collector line along Douglas Line and Uttoxeter Road will result in changes to Tables 3.3 and 4.2 of Appendix B of the NHA/EIS.

2.1.1.2 Project Modification 9

One new feature will be located within 50 m of the new transmission line route running east from Fuller Rd. This feature was originally identified as part of the Cedar Point NHA/EIS site investigations but was removed at a later date due to project layout changes. The feature is shown in **Appendix A, Figure 8** as new Feature 21.

No changes are required to the Records Review of the NHA/EIS.

The Site Investigation of this feature was completed on July 4, 2012. Feature 21 contains a fresh-moist sugar maple deciduous forest (Ecological Land Classification code FOD6). Field notes for the Site Investigation of these features are included in the NHA/EIS in Appendix C.

Criteria and methods for identifying candidate wildlife habitat are provided in Tables 3.1, 3.2 and 3.3 in the NHA/EIS. The feature does not contain any candidate wildlife habitat. As such, no changes are required to Table 3.4, 3.5 and 3.6 of the NHA/EIS, which provide the results of the Site Investigation.

One change is required to the Site Investigation: an update to Table 3.3 to include Feature 21. The updated lines to Tables 3.3 are attached to the letter report to the MNR in **Appendix B**.

One change is required to the Evaluation of Significance: an update to Table 4.2 to include Feature 21. The updated lines to Table 4.2 are attached to the letter report to the MNR in **Appendix B**. Feature 21 was determined to be significant woodlands.

Minor vegetation removal may be required for this modification as Feature 21 is located within the Project Location of one of the optional preferred routes. A corner of this feature would be removed for a total of 0.02 ha. Section 5.2.1 of the NHA/EIS provides a discussion of negative

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environmental effects and mitigation to woodlands associated with the construction and decommissioning phases of the Project. Section 5.2.1.1 specifically addresses impacts and mitigation of woodland removal. Section 5.4.1 of the NHA/EIS provides a discussion of negative environmental effects and mitigation to woodlands associated with the operational phases of the Project. General construction mitigation is provided in Section 5.3. Mitigation for Feature 21 will follow that provided in the sections above.

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification to the transmission line route.

The modified location for the transmission line route will result in changes to Tables 3.3 and 4.2 of Appendix B of the NHA/EIS. Section 5.2.1 of the NHA/EIS is changed to remove the impact of vegetation removal within some significant woodlands. No additional changes are required.

2.1.1.3 Project Modification 11

One new feature will be located within 50 m of the new transmission line route running north of Cedar Point Line. This feature was originally identified as part of the Cedar Point NHA/EIS site investigations but was removed at a later date due to project layout changes. The feature is shown in **Appendix A, Figure 10** as new Feature 22.

No changes are required to the Records Review of the NHA/EIS.

The Site Investigation of this feature was completed on July 4, 2012. Feature 22 contains a maple mineral mixed swamp deciduous forest (Ecological Land Classification code SWM2/FOD). Field notes for the Site Investigation of this feature are included in the NHA/EIS in Appendix C.

Criteria and methods for identifying candidate wildlife habitat are provided in Tables 3.1, 3.2 and 3.3 in the NHA/EIS. The feature does not contain any candidate wildlife habitat. As such, no changes are required to Table 3.4, 3.5 and 3.6 of the NHA/EIS, which provide the results of the Site Investigation.

One change is required to the Site Investigation: an update to Table 3.3 to include Feature 22. The updated lines to Tables 3.3 are attached to the letter report to the MNR in **Appendix B**.

One change is required to the Evaluation of Significance: an update to Table 4.2 to include Feature 22. The updated lines to Table 4.2 are attached to the letter report to the MNR in **Appendix B**. Feature 22 was determined to be significant woodlands.

No vegetation removal is required for this modification at Feature 22 as it is located outside of the Project Location (10 m from the overhead transmission line route), and no other vegetation occurs along the road right-of-way in this section of transmission line. As all components of the Project remain outside the woodland, there will be no direct loss of habitat of Feature 22 as a

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result of the proposed modification. Mitigation for Feature 22 will follow that provided in the Sections 5.2.1, 5.3 and 5.4.1 of the NHA/EIS.

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification to the transmission line route.

The modified location for the transmission line route will result in changes to Tables 3.3 and 4.2 of Appendix B of the NHA/EIS. Section 5.2.1 of the NHA/EIS is changed to remove the impact of vegetation removal within some significant woodlands. No additional changes are required.

2.1.2 Water Assessment and Water Body Report

A technical review was conducted to determine if the modifications result in: a change to the identification of water bodies within 120 m of the new Project Location; a change to the assessment of impacts and mitigation measures; and the overall assessment of changes to the Water Assessment and Water Body Report.

No new water body features were identified as a result of the new Project Location (aside for those previously assessed).

Standard mitigation measures previously identified in the Water Body Report will still apply for the new collector/transmission line crossings and the temporary construction area no. 1.

The revised access road over Shashawandah Creek (Project Modification 5) has been assessed both upstream and downstream of the new proposed crossing and the same construction and mitigation measures outlined in the Water Body report will apply at this crossing.

The revised access road to T51 off Aberarder Line over Greendees Drain (Project Modification 6) has been assessed both upstream and downstream of the new proposed crossing and the same construction and mitigation measures outlined in the Water Body report will apply at this crossing.

The revised transmission line routes in Project Modification 9, 10 and 11 has been assessed both upstream and downstream of the new proposed crossing and the same construction and mitigation measures outlined in the Water Body report will apply.

The modified Project Location will result in changes to Table 3.2 Master Summary Table of Water Bodies and Project Components of the Water Body Report. The revised table is included in **Appendix C**. The sections below provide a summary of the changes and the resulting alterations to the water body report as a result of Project Modifications 1 through 6.

It was concluded that overall, the modifications will not result in potential effects not previously identified and mitigated in the Water Assessment and Water Body Report.

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2.1.2.1 Project Modification 1

This modification will result in three additional crossings of waterbodies within the Hickory Creek Watershed and one additional crossing of a waterbody within the Anderson Drain Watershed by the collector line:

- One additional underground collector line crossing of McKinley Drain, near Station 56-2
- One additional underground collector line crossing of McKinley Branch Drain, near Station 57-1
- One additional underground collector line crossing of Hickory Creek, between Stations 20-1 and 19-2
- One additional underground collector line crossing of Anderson Drain, near Station 16-5

2.1.2.2 Project Modification 2

This modification will result in three additional crossings of waterbodies within the Aberarder Creek Watershed by the collector line:

- One additional underground collector line crossing of Watson Drain, near Station 26-1
- One additional underground collector line crossing of Bannister Drain, near Station 26-2
- One additional underground collector line crossing of Aberarder Creek-1 near, Station 32-3

2.1.2.3 Project Modification 3

This modification will result in a modified waterbody crossing within the Beith Creek Watershed:

- Modified crossing of Wadsworth Drain, near Station 6-2, by overhead transmission line

2.1.2.4 Project Modification 4

This modification will result in one additional instance of a waterbody within 120 m of a temporary construction area within the Woods Creek Watershed:

- One additional temporary construction area within 120 m of Brush Drain, near Station 12-3

2.1.2.5 Project Modification 5

This modification will result in a shift of the waterbody crossing location within Shashawandah Creek Watershed:

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- Modified crossing of Shashawandah Creek by the Turbine 11 access road and associated collector line, near Stations 9-5, 9-2 and 9-1

2.1.2.6 Project Modification 6

This modification will result in a modified waterbody crossing within the Bonnie Doon Creek Watershed:

- Modified crossing of Greendees Drain by the Turbine 51 access road and associated collector line, east of Station 25-5

2.1.2.7 Project Modification 9

This modification will result in a new waterbody crossing within the Woods Creek Watershed:

- New crossing of Woods Creek by the one transmission line option, east of Station 14-2

2.1.2.8 Project Modification 10

This modification will result in a modified waterbody crossing within the Beith Creek Watershed:

- Modified crossing of Beith Creek Drain by the transmission line, at Station 5-2

2.1.3 Stage I Archaeological Assessment

The Project Location associated with Modifications 3 through 7, 9, 10 and 11 were previously assessed as part of the Stage II Archaeological Assessments that were completed and submitted as part of the original REA Application and was subsequently accepted by the MTCS in their Confirmation Letters dated August 2, 2012; March 25, 2013 and July 26, 2013. As such, no additional Stage II Archaeological Assessment was required for Modifications 3 through 7.

Stantec investigated the new Project Location associated with Modifications 1 and 2. The underground collector line will be constructed entirely within the road right-of-way and it was concluded that the areas were previously disturbed and a Stage II Archaeological Assessment was not required.

This determination was documented in Stage I Archaeological Assessment Report.

It was concluded that overall, the modifications will not result in potential effects not previously assessed in the Stage II Archaeological Assessment.

2.1.4 Heritage Assessment

Following review of the Heritage Assessment Report and Built Heritage Inventory Addendum completed as part of the REA Application and subsequently accepted by the MTCS in their Confirmation Letters dated October 5, 2012 and April 12, 2013, it was determined that additional

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assessment was required where transmission line movement was proposed (Project Modification 3) but not for the other modifications i.e. where a collector line was located entirely in the road right-of-way or where it was determined that properties where modifications are proposed have been previously assessed.

A field assessment was completed on Thursday, May 15, 2014, to determine the presence of heritage resources located at two additional properties which were not assessed as part of the previous Heritage Assessments (**Appendix A, Figure 3**). Both properties were determined to be comprised entirely of crops under cultivation. No additional potential heritage resources were identified.

As a result it was determined that these proposed modifications do not alter the findings of the previously issued reports. Therefore, it was determined that no further work is required as a result of the proposed modifications.

It was concluded that overall, the modifications will not result in potential effects not previously assessed in the Heritage Assessment.

2.1.5 Summary of Impacts/Changes to REA Reports and Studies

The modified locations of the transmission line, underground collector lines and access roads will involve a minor increase/change in size of the Project Location. The other components of the Project Location shown in the REA Application including turbines, access roads, etc. will remain the same.

The following table provides a list of the REA reports and studies that were reviewed by MOE, and notes whether changes to the reports are required due to the modifications proposed. As well, an outline of the specific changes or the justification for no change being required is provided. Any changes to the reports have been addressed by issuance of this Modification Report and its appendices.

REA Reports & Studies	Change (Yes/No)	Discussion of change / Justification for 'no' change
REA REPORTS		
Project Description Report	Yes (minor)	The Site Plan would need to be updated to display the revised transmission line route, collector line routes and access road locations, Appendix A. Sections 3.1 and 3.4 to address the updated NAR.
Construction Plan Report	Yes (minor)	The Site Plan would need to be updated to display the revised transmission line route, collector line routes and access road locations, Appendix A. Section 2.0 to address the updated NAR.

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Table 2-1: Summary of Impacts/Changes to REA Reports & Studies		
REA Reports & Studies	Change (Yes/No)	Discussion of change / Justification for 'no' change
Design & Operations Report	Yes (minor)	The Site Plan would need to be updated to display the revised transmission line route, collector line routes and access road locations, Appendix A. Sections 3.1, 3.5, 5.0 and Appendix B to address the updated NAR.
Decommissioning Plan Report	No	There are no specific descriptions of the Project Location within the Decommissioning Plan Report; therefore no changes will be required.
Consultation Report	Yes (minor)	Additional consultation has been undertaken for the proposed modification to the Project, and is described in Section 3 of this Modification Document.
ADDITIONAL REPORTS		
Turbine Specifications Report	No	There are no changes proposed to the turbines and this report will not require any modifications.
Natural Heritage Assessment Report	Yes	See the letter addendums to the NHA/EIS in Appendix B for a detailed assessment and confirmation from the MNR.
Water Assessment Report	Yes (minor)	A minor update and revised Table 3.2 would be made to document new watercourse crossings; however the minor modification would not result in new negative environmental effects or associated mitigation measures beyond those already identified.
Archaeological Assessments	Yes (minor)	A minor update would be made to document that the transmission line route and collector line routes have been previously disturbed; however the minor modification would not result in new negative environmental effects or associated mitigation measures beyond those already identified. See the addendum to the Stage I Archaeological Assessment in Appendix D for detailed information and written comments from the MTCS.
Heritage Assessment	Yes (minor)	A minor update would be made to document that no heritage resources were identified in the new Project Location; the minor modification would not result in new negative environmental effects or associated mitigation measures beyond those already identified. See the addendum to the Heritage Assessment in Appendix E for detailed information and written comments from the MTCS.
Noise Assessment Report (Appended to the Design and Operations Report)	Yes (minor)	A minor update would be made to document the use of one transformer at the substation rather than two and update the sound level predictions; the minor modification would not result in new negative environmental effects or associated mitigation measures beyond those already identified.

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3.0 Consultation

Consultation regarding the proposed modification was undertaken with the MOE, MNR and MTCS as detailed above.

A copy of this Modification Document and the revised Noise Assessment Report will be placed on the Project website, to ensure the community is adequately informed of the proposed changes.

3.1 MINISTRY OF NATURAL RESOURCES (MNR)

The MNR was advised of the proposed modifications through two letter addendums to the NHA/EIS (**Appendix B**). Consultation with the MNR regarding changes to the NHA/EIS included obtaining written confirmation (**Appendix B**) that the MNR is satisfied that the NHA requirements of O. Reg. 359/09 have been met.

3.2 MINISTRY OF TOURISM, CULTURE AND SPORT (MTCS)

The MTCS was advised of the proposed modification through the completion of additional Stage 1 Archaeological Assessment that was conducted for Modifications 1 and 2 (**Appendix D**), and the completion of additional Heritage Assessments for Modification 3, 9, 10 and 11 (**Appendix E**). Consultation with the MTCS regarding changes to the Stage 1 Archaeological Assessment and Heritage Assessment included obtaining written confirmation (**Appendix D and E**) that the MTCS is satisfied that the assessments met the requirements of O. Reg. 359/09.

SUNCOR ENERGY CEDAR POINT WIND PROJECT - RENEWABLE ENERGY APPROVAL AMENDMENT MODIFICATION REPORT

Closure
May 2014

4.0 Closure

The proposed modifications have been adequately assessed in accordance with O. Reg. 359/09 and the MOE's Technical Guide. It has been determined that the modifications would not result in new negative environmental effects or associated mitigation measures beyond those identified as part of the original REA Application submitted for the Project.

This report has been prepared by Stantec for the sole use of Suncor, and may not be used by any third party without the express written consent of Suncor. The data presented in this report are in accordance with Stantec's understanding of the Project as it was presented at the time of reporting.

Prepared by 
(signature)

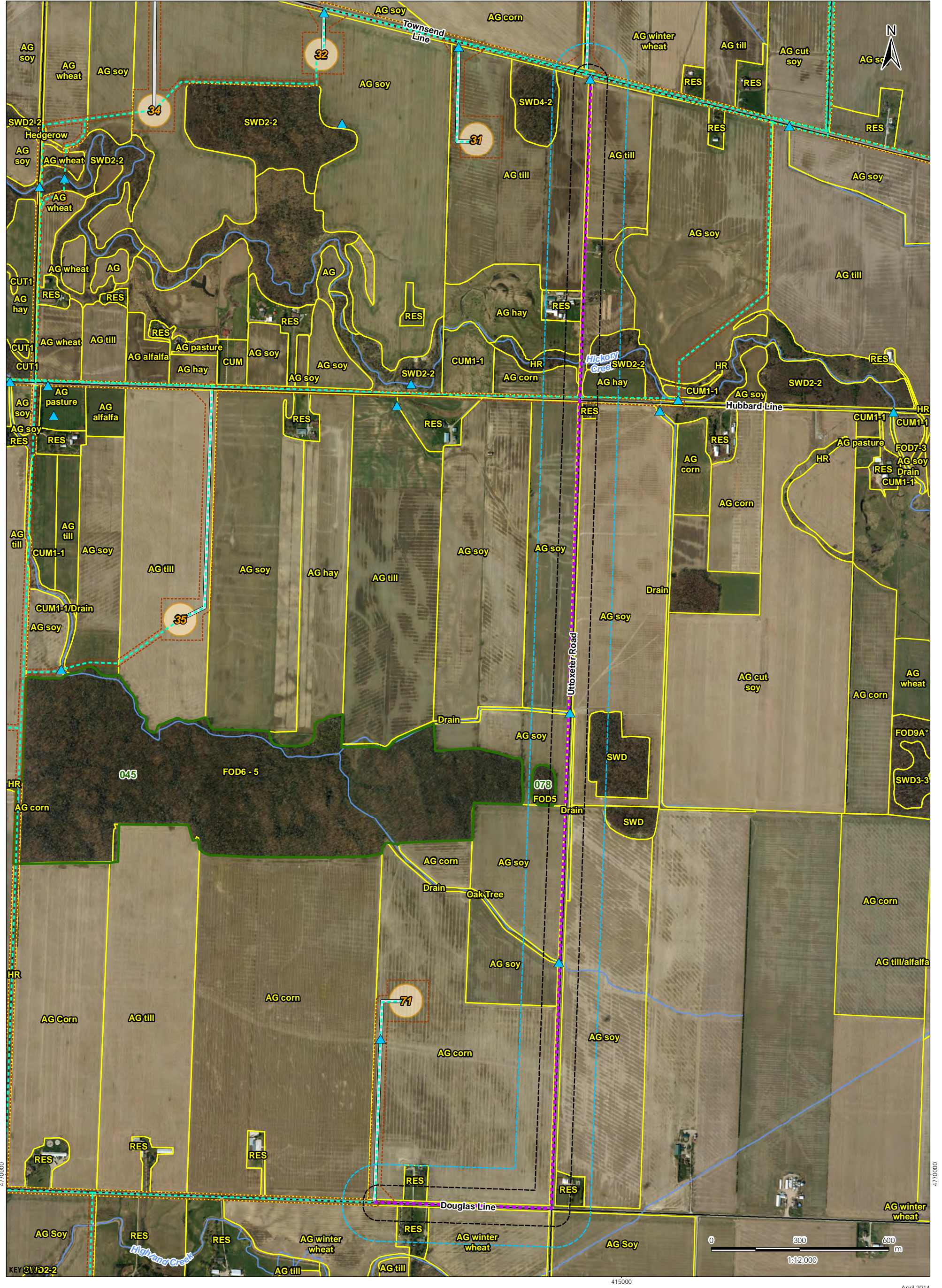
Kerrie Skillen, Project Manager

Reviewed by 
(signature)

Rob Rowland, Senior Project Manager

Appendix A:

Figures



Legend

- Zone of Investigation- 120m (Aquatic)
- Zone of Investigation- 50m (Terrestrial)
- New- Unassessed Infrastructure**
- Collector Line
- Previously Assessed Constructible Area
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Natural Feature
- Proposed Turbine Location
- Access Road
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road

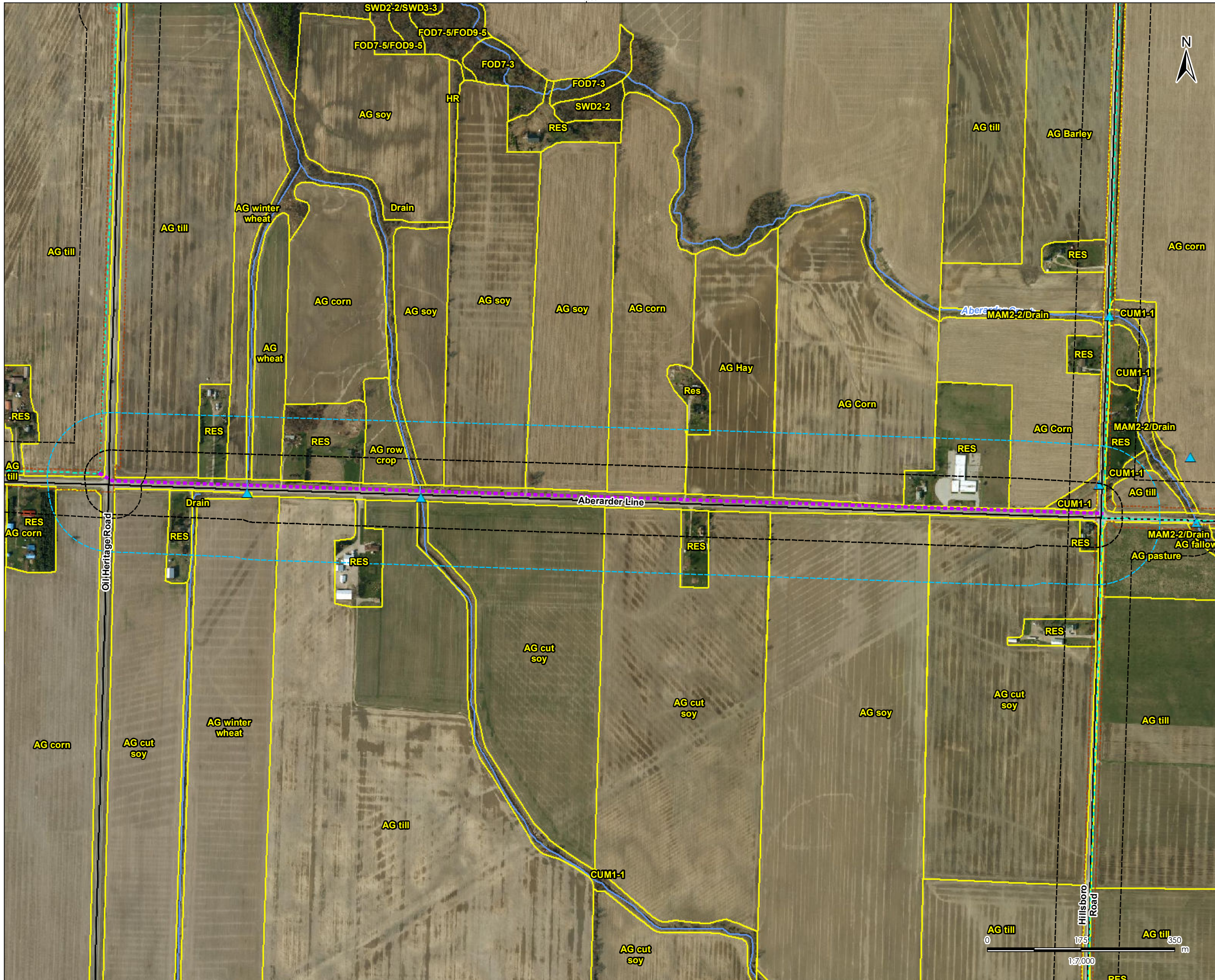
Client/Project
 Suncor Energy
 Cedar Point Wind Power Project

Figure No.
1

Title
Natural Features – Proposed Collector Line - T71 to Townsend Line along Douglas Line and Uttoxeter Road

Notes

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Legend

- Zone of Investigation- 120m (Aquatic)
- Zone of Investigation- 50m (Terrestrial)
- New- Unassessed Infrastructure**
 - Collector Line
- Previously Assessed Infrastructure**
 - Proposed Turbine Location
 - Collector Line
 - Previously Assessed Constructible Area
- Existing Features**
 - Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road

- Notes**
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160960709

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Figure No.
2

Title
Natural Features – Proposed Collector Line - Arberarder Line

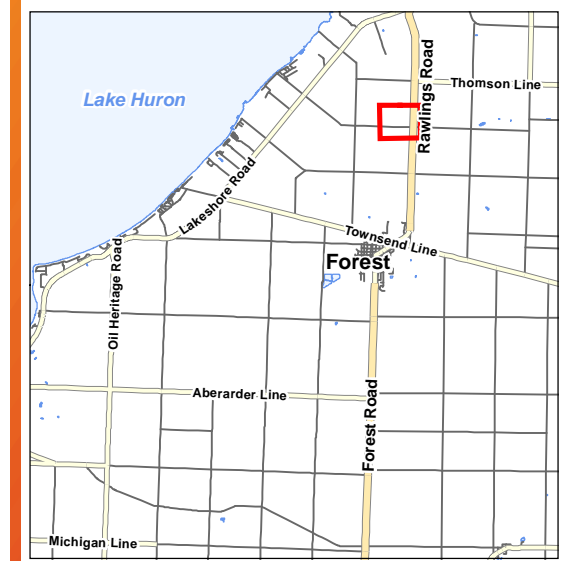
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Revised: 20140530 By: dhaney





Legend

- Zone of Investigation- (Terrestrial)
- Zone of Investigation- (Aquatic)
- New- Unassessed Infrastructure
- Access Road
- Transmission Line
- Overhead Transmission Line Constructible Area
- Previously Assessed Infrastructure
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line
- Previously Assessed Constructible Area
- Existing Features
- Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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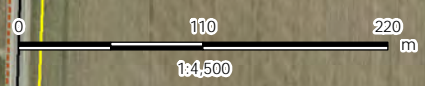
April 2014
160960709

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Figure No.
3

Title
Natural Features- Proposed
Transmission Line



- Legend**
- Zone of Investigation- (Terrestrial & Aquatic)
 - New- Unassessed Infrastructure
 - Access Road
 - Temporary Construction Area
 - Previously Assessed Infrastructure
 - Proposed Turbine Location
 - ★ Transformer
 - Access Road
 - Collector Line
 - Transmission Line
 - Previously Assessed Constructible Area
 - Substation/ Operation and Maintenance Building
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland



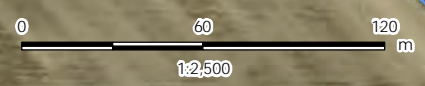
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Cedar Point Wind Power Project

Figure No.
4

Title
Natural Features- Proposed
Temporary Construction Area no. 1

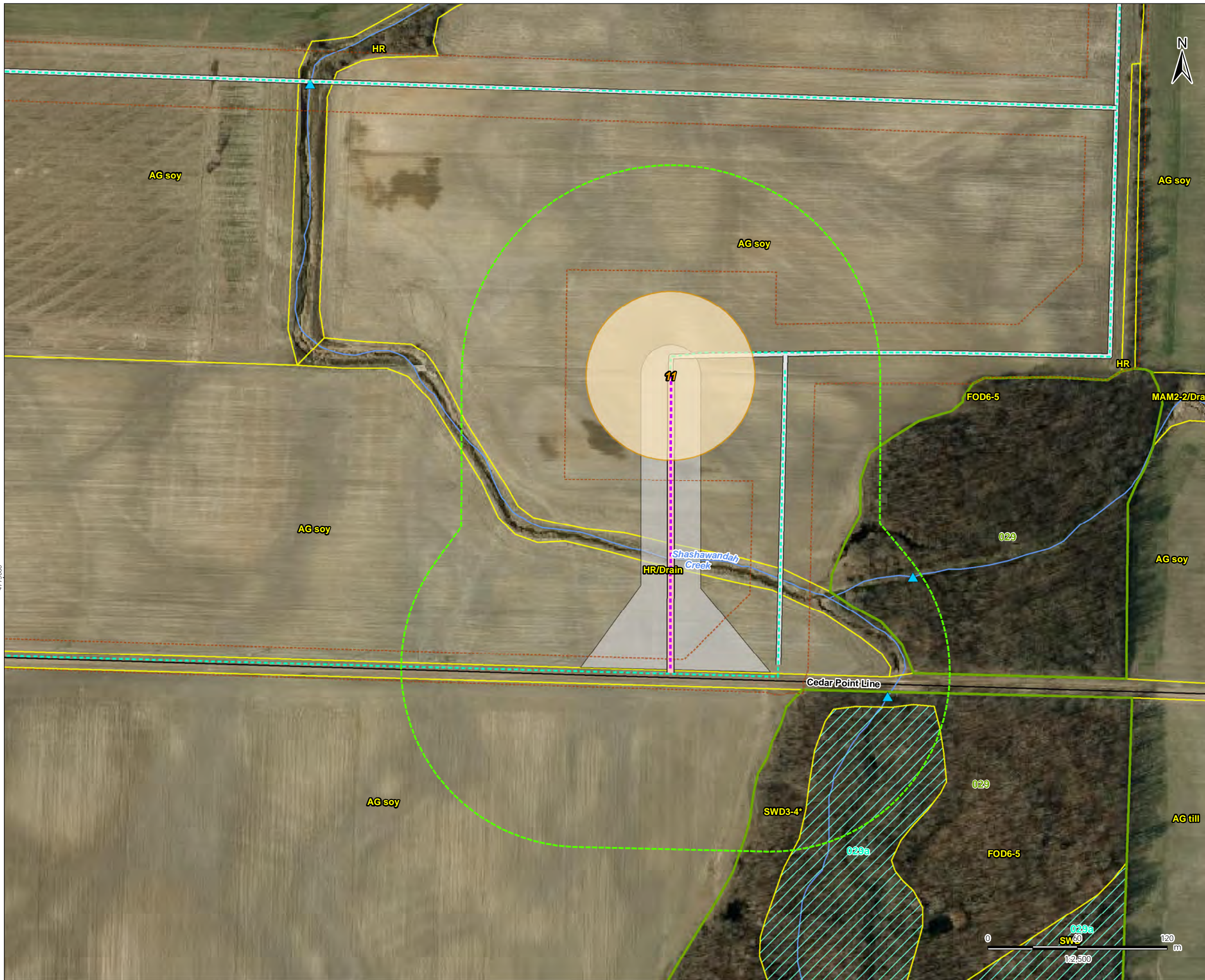


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 Revised: 2014-04-30 By: dhanvey
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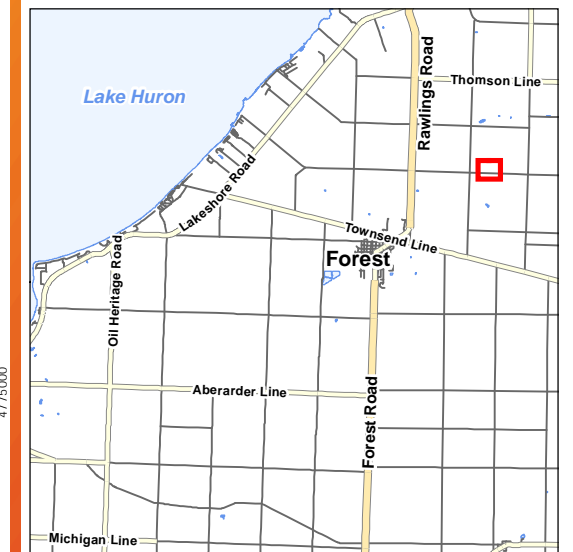
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 Revised: 2014-04-30 By: dhanvey



Legend

- Zone of Investigation- (Terrestrial & Aquatic)
- New- Unassessed Infrastructure**
- Access Road
- Collector Line
- Collector Line
- Access Road and Collector Constructible Area (40m)
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road
- Collector Line
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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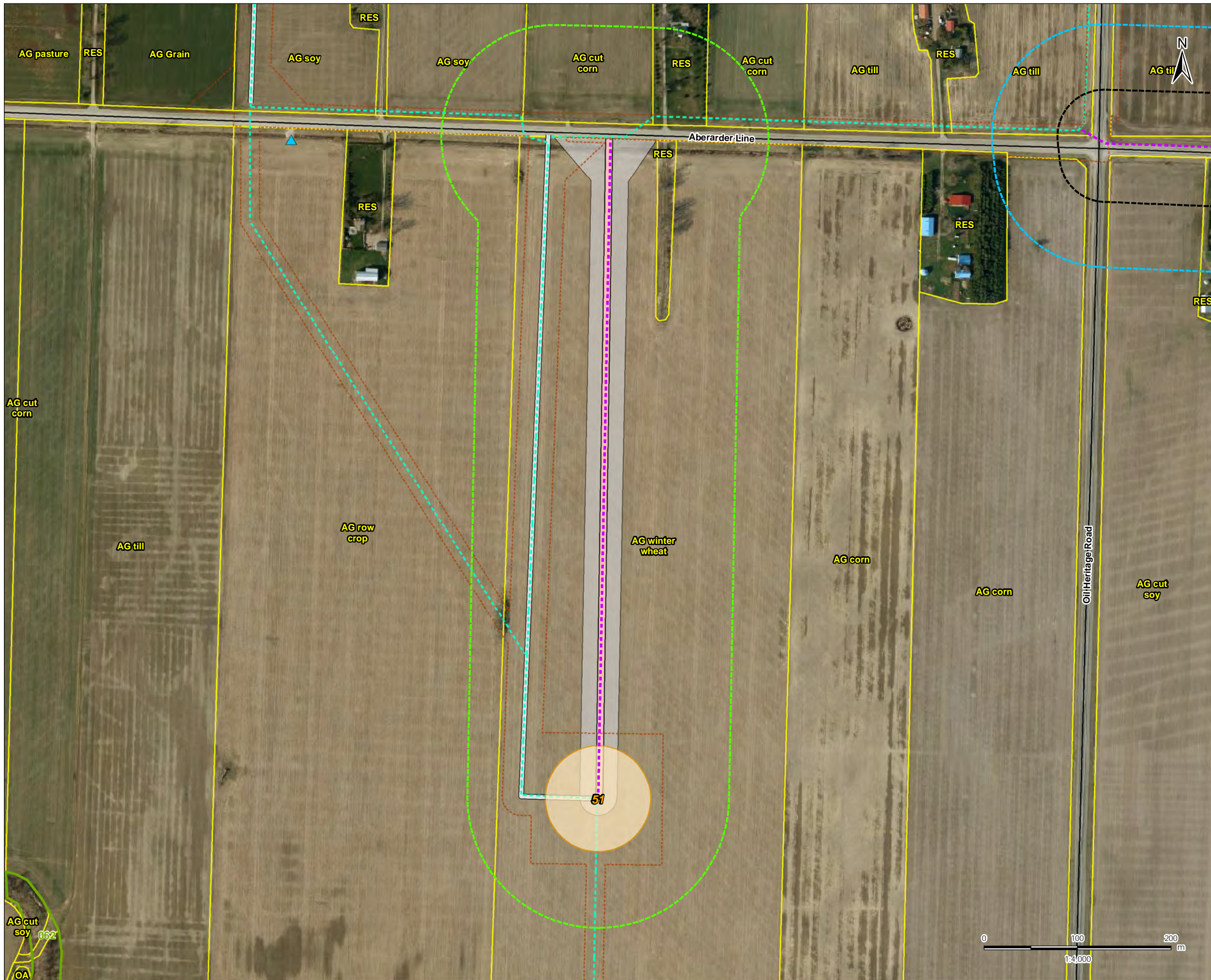
April 2014
160960709

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Suncor Energy
Cedar Point Wind Power Project

Figure No.
5

Title
Natural Features- T11- Alternative
Access Road and Collector Route



- Legend**
- Zone of Investigation- (Terrestrial & Aquatic)
 - Zone of Investigation- (Terrestrial)
 - Zone of Investigation- (Aquatic)
 - New- Unassessed Infrastructure
 - Access Road
 - Collector Line
 - Access Road and Collector Constructible Area (40m)
 - Previously Assessed Infrastructure
 - Proposed Turbine Location
 - Access Road
 - Collector Line
 - Previously Assessed Constructible Area
 - Existing Features
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland



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April 2014
160960709

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Suncor Energy
Cedar Point Wind Power Project

Figure No.
6

Title
Natural Features- T51- Alternative Access Road and Collector Route

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 Revised: 2014-04-30 By: dhanvey



Legend

- Zone of Investigation- (Terrestrial & Aquatic)
- New- Unassessed Infrastructure**
- Access Road
- Collector Line
- Collector Line
- Access Road and Collector Constructible Area (40m)
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road
- Collector Line
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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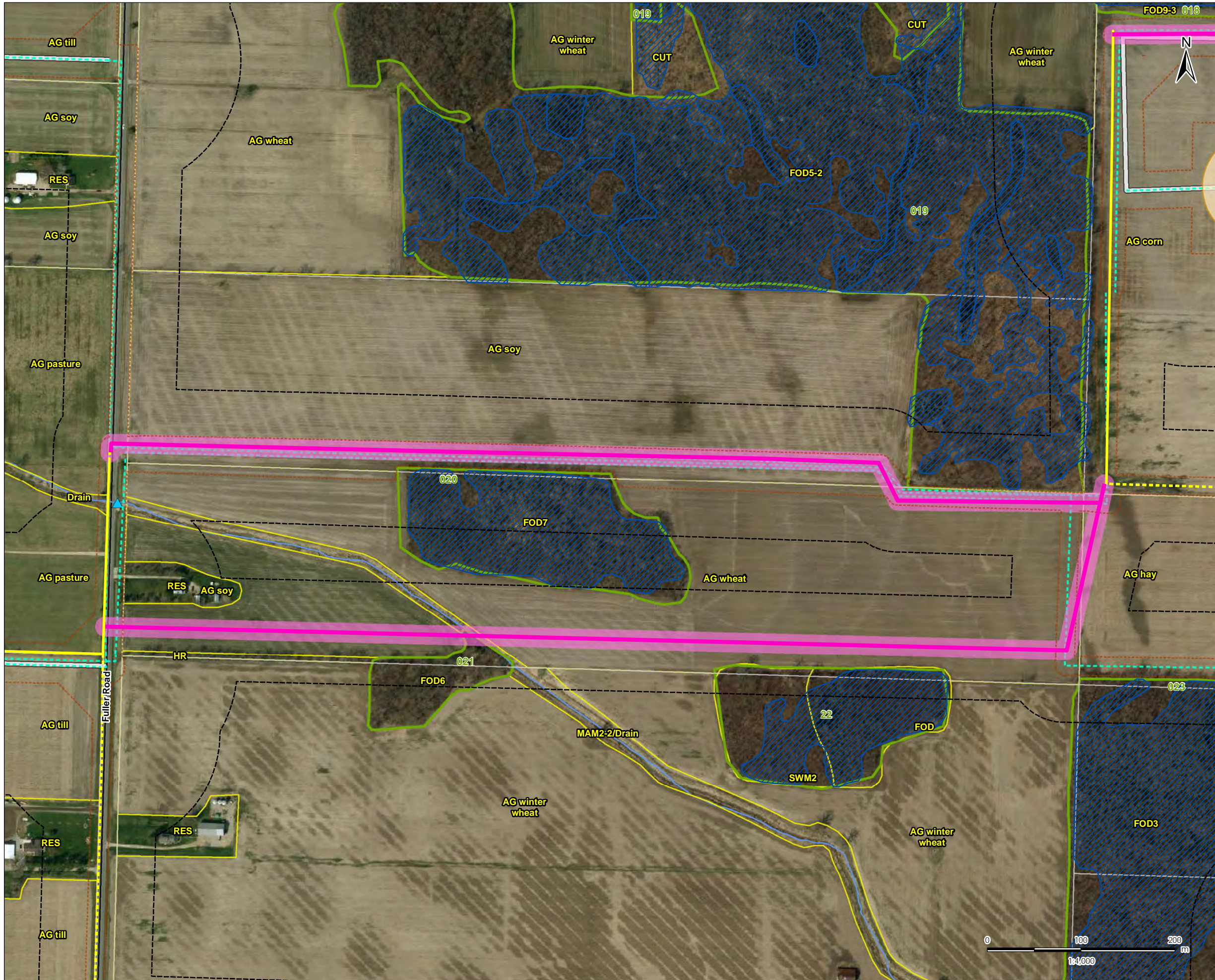
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Client/Project

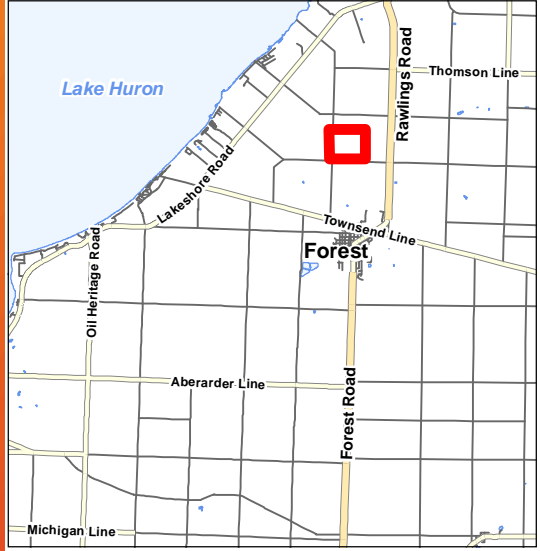
Suncor Energy
Cedar Point Wind Power Project

Figure No.
7

Title
Natural Features- T23- Alternative Access Road and Collector Route



- Legend**
- Zone of Investigation
 - New/ Modified Infrastructure**
 - Amended Transmission Line Route Option to Avoid New PSW
 - Overhead Transmission Line Constructible Area
 - Previously Assessed**
 - Proposed Turbine Location
 - Access Road
 - Collector Line
 - Transmission Line- Preferred Route
 - Transmission Line- Other Route Option
 - Previously Assessed Constructible Area
 - Existing Features**
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland Natural Feature (Stantec)
 - Property Boundary
 - Wetland- MNR**
 - Provincially Significant Wetlands



- Notes**
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Figure No.
8

Title
Natural Features – Proposed Transmission Line

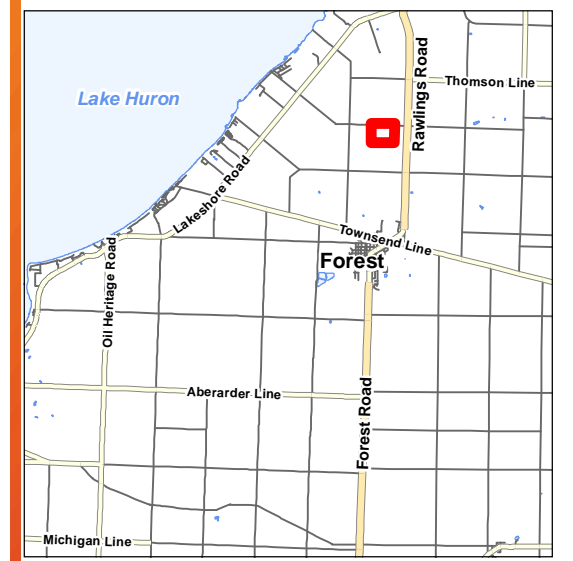
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 Revised: 2014-05-27 By: dhanvey





Legend

- Zone of Investigation
- New/ Modified Infrastructure**
- Amended Transmission Line Route Option to Avoid New PSW
- Overhead Transmission Line Constructible Area
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line- Preferred Route
- Transmission Line- Other Route Option
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Woodland Natural Feature (Stantec)
- Property Boundary
- Wetland- MNR**
- Provincially Significant Wetlands



Notes

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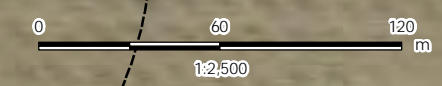
Suncor Energy
Cedar Point Wind Power Project

Figure No.

9

Title

Natural Features – Proposed Transmission Line

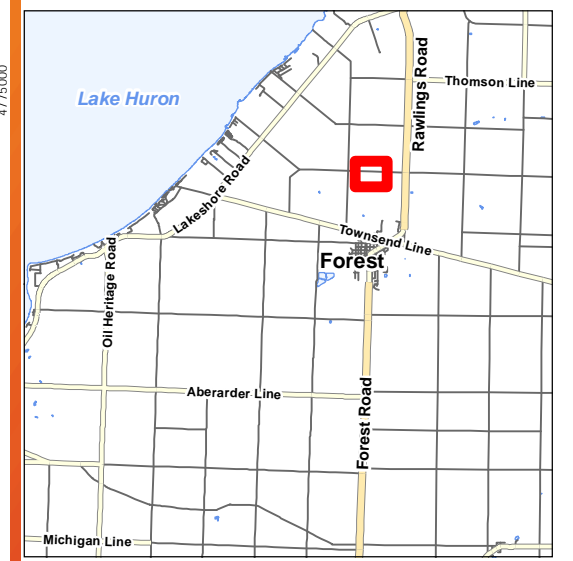


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 Revised: 2014-05-27 By: dhanvey



Legend

- Zone of Investigation
- New/ Modified Infrastructure**
- Amended Transmission Line Route Option to Avoid New PSW
- Overhead Transmission Line Constructible Area
- Previously Assessed**
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line- Other Route Option
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Woodland Natural Feature (Stantec)
- Property Boundary
- Wetland- MNR**
- Provincially Significant Wetlands



Notes

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Cedar Point Wind Power Project

Figure No.
10

Title
Natural Features – Proposed Transmission Line

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Revised: 2014-05-27 By: dhanvey

May 2014
160960709

Appendix B:

**Letter Addendums: Natural Heritage Assessment &
Environmental Impact Study,
and MNR Confirmation**

May 27, 2014

Suncor Energy Products Inc.
150 6th Avenue SW
Calgary AB T2P 3E3

RE: Modifications to Cedar Point Wind Energy Project

Dear Christopher Scott:

The Ministry of Natural Resources (MNR) has received the following documents that describe modifications to the Cedar Point Wind Energy Project made subsequent to MNR's letter confirming the Natural Heritage Assessment in respect of the project:

- Suncor Energy Cedar Point Wind Project Modifications, prepared by Stantec Consulting Ltd, dated May 1, 2014
- Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014, prepared by Stantec Consulting Ltd, dated May 27, 2014

Upon review of the modifications, MNR is satisfied that the Natural Heritage Assessment requirements of Ontario Regulation 359/09 have been met. Please add this letter as an addendum to the confirmation letter issued April 11, 2013 for the Cedar Point Wind Energy Project.

If you wish to discuss please contact Joe Halloran at joe.halloran@ontario.ca or 705-755-3225

Sincerely,



Kathy Woeller
Regional Land Use Planning Supervisor
Southern Region MNR

cc Nick Collela, Environmental Approvals Access & Service Integration Branch, MOE
Andrew Taylor, Senior Ecologist, Stantec Consulting Ltd



Stantec Consulting Ltd.
70 Southgate Drive, Suite 1
Guelph ON N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

May 1, 2014
File: 160960709

Attention: Mr. Joe Halloran

Ontario Ministry of Natural Resources
Southern Region Renewable Energy Operations Team
4th floor, South Tower
300 Water St
PO Box 7000
Peterborough ON K9J 8M5

Dear Mr. Halloran,

Reference: Suncor Energy Cedar Point Wind Project Modifications

This letter is submitted as an addendum to the Suncor Energy Cedar Point Wind Project Renewable Energy Approval Application – Natural Heritage Assessment and Environmental Impact Study (NHA/EIS, Stantec 2013) that was submitted to the Ministry of Natural Resources (MNR) in April 2013 and received a confirmation letter on April 11, 2013. This letter report should be read in association with that document.

The purpose of this letter is to provide the MNR with an understanding of modifications that have been made to the location of the access roads, underground collector lines, transmission lines, and temporary construction areas since the NHA/EIS was confirmed by MNR, and to provide an assessment of the proposed modifications in order to identify any additional potential effects, mitigation measures, or monitoring requirements that were not included in the NHA/EIS. These modifications include, specifically:

- The location of an underground collector line along Uttoxeter Road (see Figure 1);
- The location of an underground collector line along Aberarder Line (see Figure 2);
- The location of the transmission line near the intersection of Proof Line/Rawlings Road (see Figure 3).
- The location of a temporary construction area on Cedar Point Line (see Figure 4);
- The location of the underground collector line and access road to Turbine 11 (see Figure 5);
- The location of the underground collector line and access road to Turbine 51 (see Figure 6); and,
- The location of the underground collector line and access road to Turbine 23 (see Figure 7).

Additional field visits were conducted on March 25, 2014 and March 30, 2014 to update the vegetation community mapping within the new Zone of Investigation (ZOI). The ZOI, as defined in



Reference: Suncor Energy Cedar Point Wind Project Modifications

the Cedar Point Wind Project NHA/EIS (Stantec 2013) and based on the O. Reg. 359/09 requirements, is 50 m surrounding collector and transmission lines and 120 m surrounding all other Project components.

1. PROJECT MODIFICATION 1: UNDERGROUND COLLECTOR LINE ALONG UTTOXETER ROAD

Project Modification 1 involves the addition of an underground collector line along Douglas Line and Uttoxeter Road entirely within the road right-of-way, from T71 to Townsend Line. Figure 1 shows the location of the modified underground cable location. The addition of the underground collector line route provides Suncor with greater design flexibility and minimizes pinch points with respect to connecting Project turbines with the substation.

The construction and installation activities for this underground collector line will be completed in the same manner as the collector lines which are described in the Construction Plan Report, submitted as part of the REA Application.

Change to Identification of Natural Features within 50 M of the New Project Location

One new woodland feature was located within 50 m of the new underground collector line running along Uttoxeter Road. This feature was not identified in the April 2013 NHA/EIS. It is shown on Figure 1 as new Feature 78. A site investigation of this feature was completed on March 25, 2014. It contains a dry-fresh sugar maple deciduous forest (Ecological Land Classification code FOD5). No candidate wildlife habitat was identified in this feature. This small (0.98 ha) feature is located 29 m from Feature 45 (the woodland to the west of Feature 78) and so is not considered part of the same feature.

No changes are required to the Records Review of the NHA/EIS.

One change is required to the Site Investigation: an update to Table 3.3 to include Feature 78. The updated line to Table 3.3 is attached to this letter report.

One change is required to the Evaluation of Significance: an update to Table 4.2 to include Feature 78. The updated line to Table 4.2 is attached to this letter report. Feature 78 was determined not to be a significant woodland.

No vegetation removal is required for this modification, as Feature 78 is located 28 m away from the underground cabling, and no other vegetation occurs along the road right-of-way in this section of underground cabling. As all components of the Project remain outside the woodland, there will be no direct loss of habitat or function of Feature 78 as a result of the proposed modification.

Change to Assessment of Impacts and Mitigation Measures

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification.



Reference: Suncor Energy Cedar Point Wind Project Modifications

Overall Assessment of Changes to NHA/EIS

The modified location for the underground collector line along Douglas Line and Uttoxeter Road will result in changes to Tables 3.3 and 4.2 of Appendix B of the NHA/EIS. No additional changes are required.

2. PROJECT MODIFICATION 2: UNDERGROUND COLLECTOR LINE ALONG ABERARDER LINE

Project Modification 2 involves the addition of an underground collector line along Aberarder Line between Oil Heritage Road and Hillsboro Road entirely within the road right-of-way. Figure 2 shows the location of the modified underground cable location. The addition of the underground collector line route provides Suncor with greater design flexibility and minimizes pinch points with respect to connecting Project turbines with the substation.

Change to Identification of Natural Features within 50 M of the New Project Location

No new features were found within 50 m of the Project Location as a result of the new underground collector line along Aberarder Line. No changes are required to the Records Review, Site Investigation or Evaluation of Significance reports as a result of the modified location of this collector line.

Change to Assessment of Impacts and Mitigation Measures

The assessment of the modified line indicates that it will not have any impact on natural heritage features. The underground collector line will be placed in the road right-of-way.

Overall Assessment of Changes To NHA/EIS

The modified location for the underground collector line along Aberarder Line will not result in changes to the NHA/EIS.

3. PROJECT MODIFICATION 3: TRANSMISSION LINE NEAR THE INTERSECTION OF PROOF LINE/RAWLINGS ROAD

Project Modification 3 moves the location of the overhead transmission line (located at the northwest corner of Proof Line and Rawlings Road) off the road right-of-way and onto the private property. This will involve a change of approximately 2 m further into the agricultural corn field. Moving this transmission line to private land will reduce the amount of transmission line in the municipal right-of-way that connects other Project infrastructure north of this area. Figure 3 shows the location of the modified transmission line location near the intersection of Proof Line and Rawlings Road.

Change to Identification of Natural Features within 50 M of the New Project Location

No new features were found within 50 m of the Project Location as a result of the modification to the location of this transmission line. No changes are required to the Records Review, Site



Reference: Suncor Energy Cedar Point Wind Project Modifications

Investigation or Evaluation of Significance reports as a result of the modified location of this collector line.

Change to Assessment of Impacts and Mitigation Measures

Our assessment of the modified line is that it will not have any impact on natural heritage features. The overhead transmission line will be placed on private property in an agricultural corn field.

Overall Assessment of Changes To NHA/EIS

The modified location for the overhead transmission line will not result in changes to the NHA/EIS.

4. PROJECT MODIFICATION 4: TEMPORARY CONSTRUCTION AREA ON CEDAR POINT LINE

Project Modification 4 includes the addition of a new temporary construction area on Cedar Point Line near the intersection with Fuller Road for additional project laydown area. Figure 4 shows the location of the new temporary construction area location. The dimensions of this temporary construction area will be approximately 140 m x 140 m. As described in the Construction Plan Report, the substation area was to be used as the temporary staging area prior to its construction. Due to a reduced construction schedule to meet contractual deadlines, the timing of the construction of the substation no longer permits the use of this area as a temporary staging area. As a result, a new temporary staging area is required.

Change to Identification of Natural Features within 120 M of the New Project Location

No new features were found within 120 m of the Project Location as a result of the modification of the new temporary construction area. No changes are required to the Records Review, Site Investigation or Evaluation of Significance reports as a result of this modification.

Change to Assessment of Impacts and Mitigation Measures

Our assessment of the new temporary construction area location is that it will not have any impact on natural heritage features. The new temporary construction area will be placed on private property in an agricultural crop field.

Overall Assessment of Changes to NHA/EIS

The modified location for the new temporary construction area onto private property will not result in changes to the NHA/EIS.

5. PROJECT MODIFICATION 5: UNDERGROUND COLLECTOR LINE AND ACCESS ROAD TO TURBINE 11

Project Modification 5 moves the location of the access road and underground collector line to Turbine 11 approximately 75 m to the west. Moving this access road and underground collector line moves this location further from Feature 29. Figure 5 shows the location of the modified underground collector line and access road to Turbine 11. The move is being made by Suncor to address a request made by the participating landowner.



Reference: Suncor Energy Cedar Point Wind Project Modifications

Change to Identification of Natural Features within 120 M of the New Project Location

No new features were found within 120 m of the Project Location as a result of the modification to the location of this access road and underground collector line. No changes are required to the Records Review, Site Investigation or Evaluation of Significance reports as a result of this modification.

Change to Assessment of Impacts and Mitigation Measures

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification. The access road and underground collector line will be located in the same agricultural crop field, crossing the same drainage, and within 120 m of the same Feature (29); however, this modification will move these components further from this feature.

Overall Assessment of Changes to NHA/EIS

The modified location for the access road and underground collector line to Turbine 11 will not result in changes to the NHA/EIS.

6. PROJECT MODIFICATION 6: UNDERGROUND COLLECTOR LINE AND ACCESS ROAD TO TURBINE 51

Project Modification 6 moves the location of the access road and underground collector line to Turbine 51 approximately 90 m to the east. Figure 6 shows the location of the modified underground collector line and access road to Turbine 51. The move is being made by Suncor to address a request made by the participating landowner.

Change to Identification of Natural Features within 120 M of the New Project Location

No new features were found within 120 m of the Project Location as a result of the modification to the location of this access road and underground collector line. No changes are required to the Records Review, Site Investigation or Evaluation of Significance reports as a result of this modification.

Change to Assessment of Impacts And Mitigation Measures

Our assessment of the modified line is that it will not have any impact on natural heritage features. The access road and underground collector line will be located in the same agricultural crop field.

Overall Assessment of Changes to NHA/EIS

The modified location for the access road and underground collector line to Turbine 51 will not result in changes to the NHA/EIS.

7. PROJECT MODIFICATION 7: UNDERGROUND COLLECTOR LINE AND ACCESS ROAD TO TURBINE 23

Project Modification 7 moves the location of the access road and underground collector line to Turbine 23 approximately 90 m to the southwest. Moving this access road and underground collector line moves this location further from woodland and wetland Feature 31/31a. Figure 7



May 1, 2014
Mr. Joe Halloran
Page 6 of 7

Reference: Suncor Energy Cedar Point Wind Project Modifications

shows the location of the modified underground collector line and access road to Turbine 23. The move is being made by Suncor to address a request made by the participating landowner.

Change to Identification of Natural Features within 120 M of the New Project Location

No new features were found within 120 m of the Project Location as a result of the modification to the location of this access road and underground collector line. No changes are required to the Records Review, Site Investigation or Evaluation of Significance reports as a result of this modification.

Change to Assessment of Impacts and Mitigation Measures

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification. The access road and underground collector line will be located in the same agricultural crop field and within 120 m of the same features (31, 31a, and 32); however, this modification will move these components further from woodland and wetland Feature 31/31a. There is no change in the distance to Feature 32.

Overall Assessment of Changes to NHA/EIS

The modified location for the access road and underground collector line to Turbine 23 will not result in changes to the NHA/EIS.

Summary

Stantec Consulting Ltd. prepared this letter report for Suncor Energy for the Cedar Point Wind Power Project. Suncor Energy is committed to implementing the appropriate protection and mitigation measures as they apply to the construction and operation of the proposed Project.

Regards,

STANTEC CONSULTING LTD.

Katherine St. James

Katherine St James
Terrestrial Ecologist
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katherine.stjames@stantec.com



May 1, 2014
Mr. Joe Halloran
Page 7 of 7

Reference: Suncor Energy Cedar Point Wind Project Modifications

Attachments:

Attachment 1: Update to Table 3.3: Description and Characterizations of Features found within 120 m of the Cedar Point Wind Project
Update to Table 4.2: Woodlands: Evaluation of Significance

Attachment 2: Figure 1: Natural Features – Proposed Collector Line - T71 to Townsend Line along Douglas Line and Uttoxeter Road
Figure 2: Natural Features – Proposed Collector Line - Arberarder Line
Figure 3: Natural Features – Proposed Transmission Line
Figure 4: Natural Features – Proposed Temporary Construction Area no. 1
Figure 5: Natural Features – T11- Alternative Access Road and Collector Route
Figure 6: Natural Features – T51- Alternative Access Road and Collector Route
Figure 7: Natural Features – T23- Alternative Access Road and Collector Route

c. M. Kozak, Suncor Energy Products Inc.
K. Skillen, Stantec Consulting Ltd.

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May 1, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project Modifications

Attachment 1



May 1, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project Modifications

Update to Table 3.3: Description and Characterizations of Features found within 120 m of the Cedar Point Wind Project							
Feature ID	Size (ha)	Type	Composition	Attributes	Function	Figure #	Significance (including rationale)
78	0.98	Woodland	FOD5	Dry-Fresh Sugar Maple Deciduous Forest	<ul style="list-style-type: none"> Close to other significant natural features 	1	Unknown, requires Evaluation of Significance (see Table 4.2)

Update to Table 4.2: Woodlands: Evaluation of Significance								
Feature #	Criteria							Significant (Y/N)
	Size (ha) ¹	Interior habitat ²	Proximity to other significant habitats ³	Linkages ⁴	Water protection ⁵	Diversity ⁶	Uncommon Characteristics ⁷	
78	0.98	No	No	No	No	No	No	No

¹ Considered significant if >4 ha based on the woodland size criteria standards within the natural Heritage Assessment Guide for Renewable Energy Projects

² Considered significant if any interior habitat is present (i.e., woodland >100 m from any edge)

³ Considered significant if located within 30 m from another natural feature or fish habitat, and >1ha

⁴ Considered significant if located within 120 m of two other significant features, and >1ha

⁵ Considered significant if located within 50 m of groundwater discharge, headwater area, watercourse or fish habitat, and >0.5 ha

⁶ Considered significant if contains native, naturally occurring vegetation types and >1ha – could not be assessed without full access or nearby road access

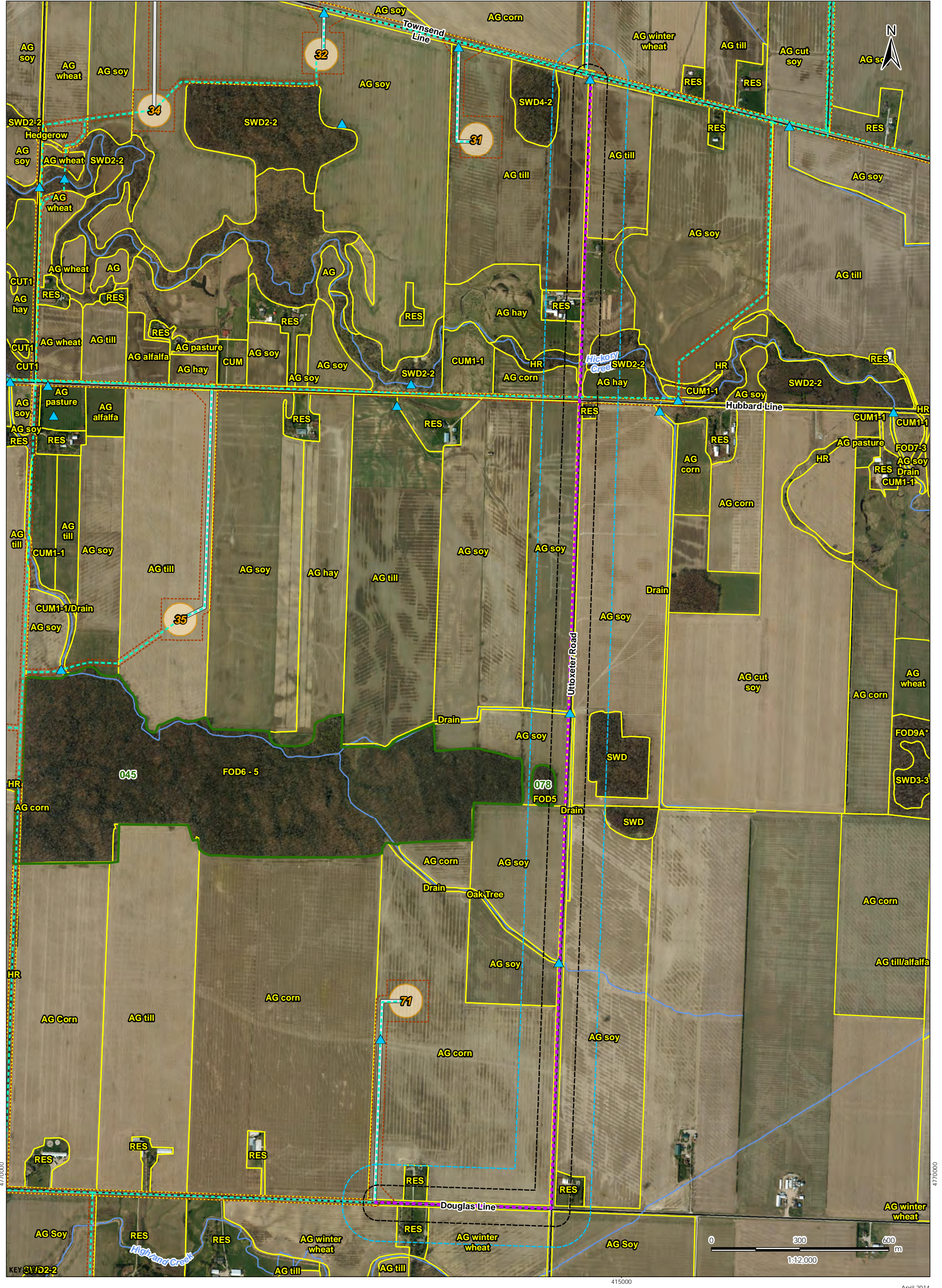
⁷ Considered significant if contain a rare (S1-S3) vegetation community, rare plant habitat, or large old trees (>10 trees/ha >100 years or >40 cm DBH)



May 1, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project Modifications

Attachment 2



- Legend**
- Zone of Investigation- 120m (Aquatic)
 - Zone of Investigation- 50m (Terrestrial)
 - New- Unassessed Infrastructure**
 - Collector Line
 - Previously Assessed Constructible Area
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Natural Feature
 - Proposed Turbine Location
 - Access Road

Notes

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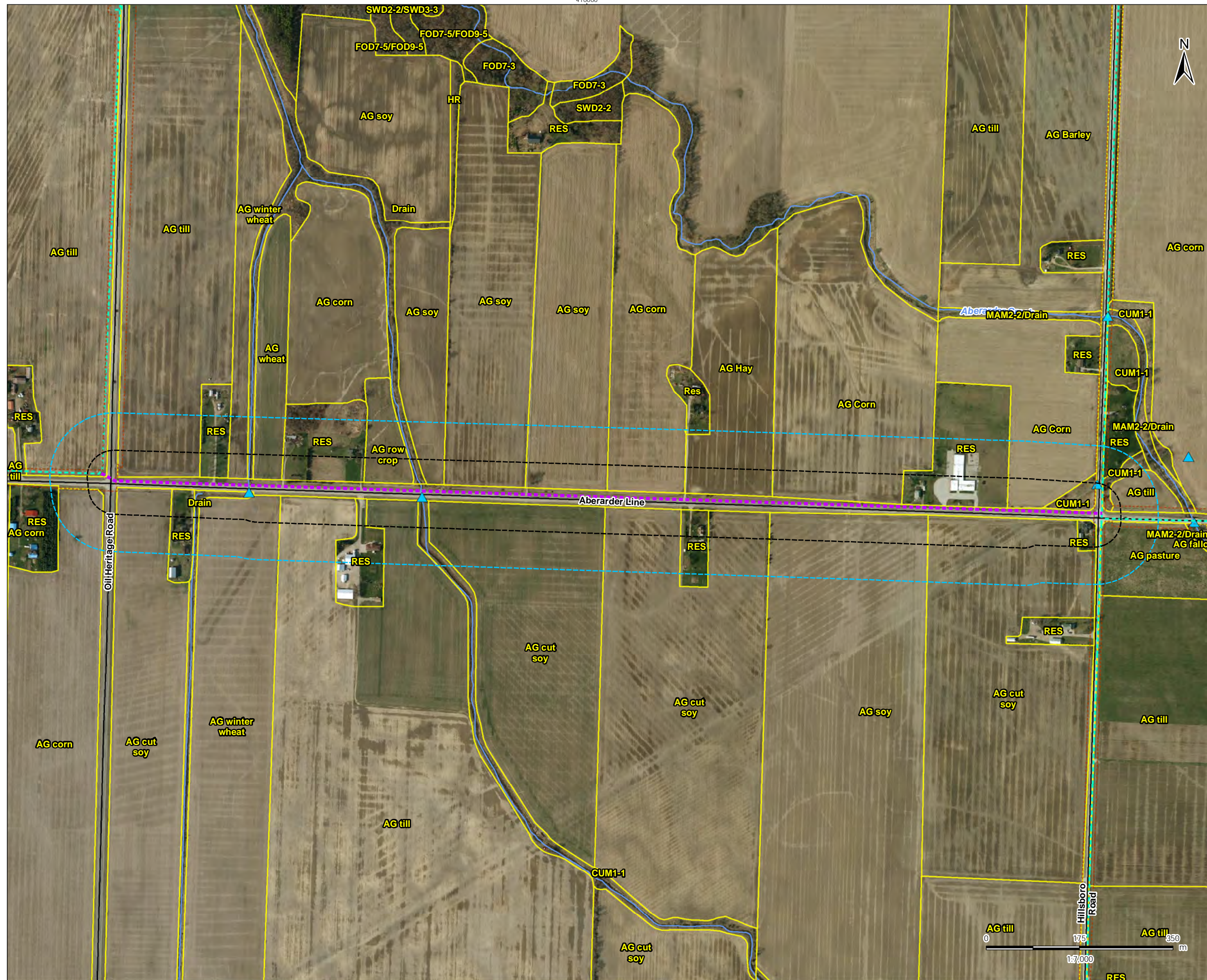
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 Cedar Point Wind Power Project

Figure No.
1

Title
Natural Features – Proposed Collector Line - T71 to Townsend Line along Douglas Line and Uttoxeter Road



- Legend**
- Zone of Investigation- 120m (Aquatic)
 - Zone of Investigation- 50m (Terrestrial)
 - New- Unassessed Infrastructure**
 - Collector Line
 - Previously Assessed Infrastructure**
 - Proposed Turbine Location
 - Collector Line
 - Previously Assessed Constructible Area
 - Existing Features**
 - Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road



- Notes**
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Figure No.
2

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Title
Natural Features – Proposed Collector Line - Arberarder Line

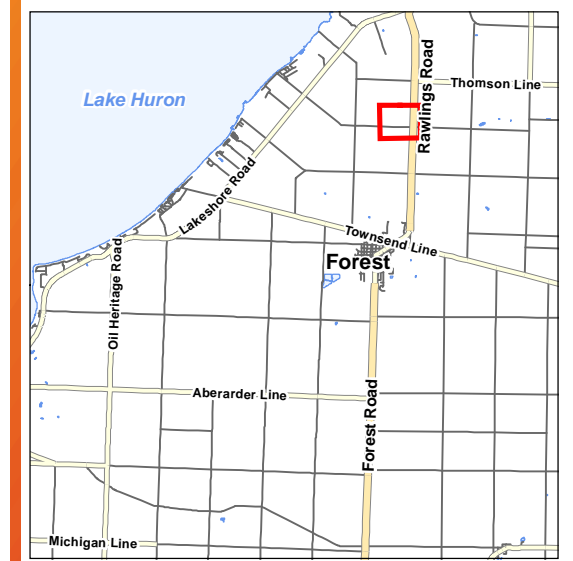


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Revised: 2014-04-03 By: dhanvey



Legend

- Zone of Investigation- (Terrestrial)
- Zone of Investigation- (Aquatic)
- New- Unassessed Infrastructure
- Access Road
- Transmission Line
- Overhead Transmission Line Constructible Area
- Previously Assessed Infrastructure
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line
- Previously Assessed Constructible Area
- Existing Features**
- Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

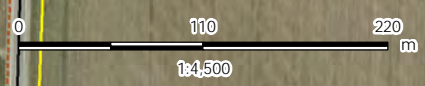
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Figure No.
3

Title
Natural Features- Proposed
Transmission Line



- Legend**
- Zone of Investigation- (Terrestrial & Aquatic)
 - New- Unassessed Infrastructure
 - Access Road
 - Temporary Construction Area Previously Assessed Infrastructure
 - Proposed Turbine Location
 - ★ Transformer
 - Access Road
 - Collector Line
 - Transmission Line
 - Previously Assessed Constructible Area
 - Substation/ Operation and Maintenance Building
- Existing Features**
- ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland



- Notes**
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Figure No.
4

Title
Natural Features- Proposed
Temporary Construction Area no. 1

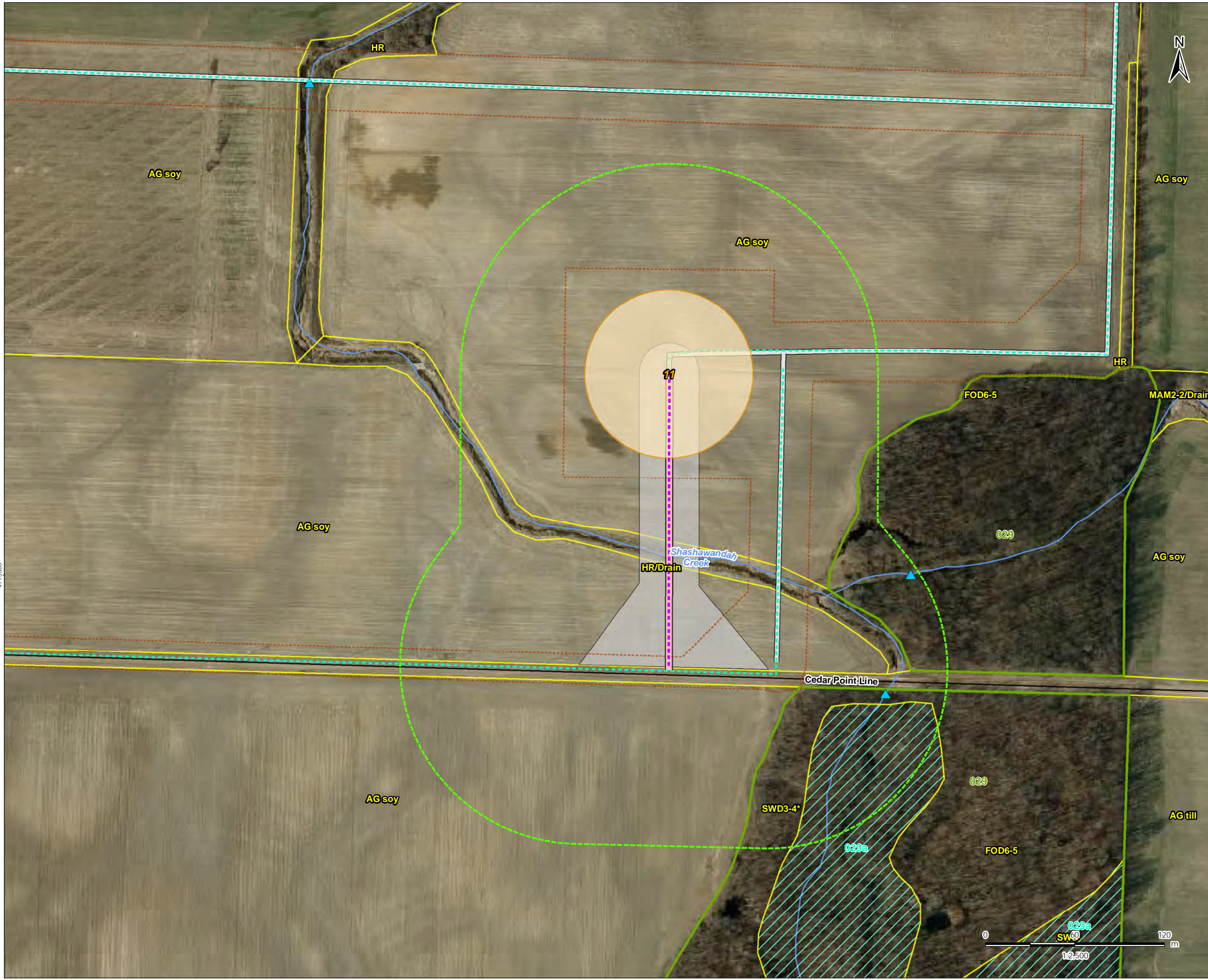


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- Legend**
- Zone of Investigation- (Terrestrial & Aquatic)
 - New- Unassessed Infrastructure**
 - Access Road
 - Collector Line
 - Access Road and Collector Constructible Area (40m)
 - Previously Assessed Infrastructure**
 - Proposed Turbine Location
 - Access Road
 - Collector Line
 - Previously Assessed Constructible Area
 - Existing Features**
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Wetland
 - Woodland



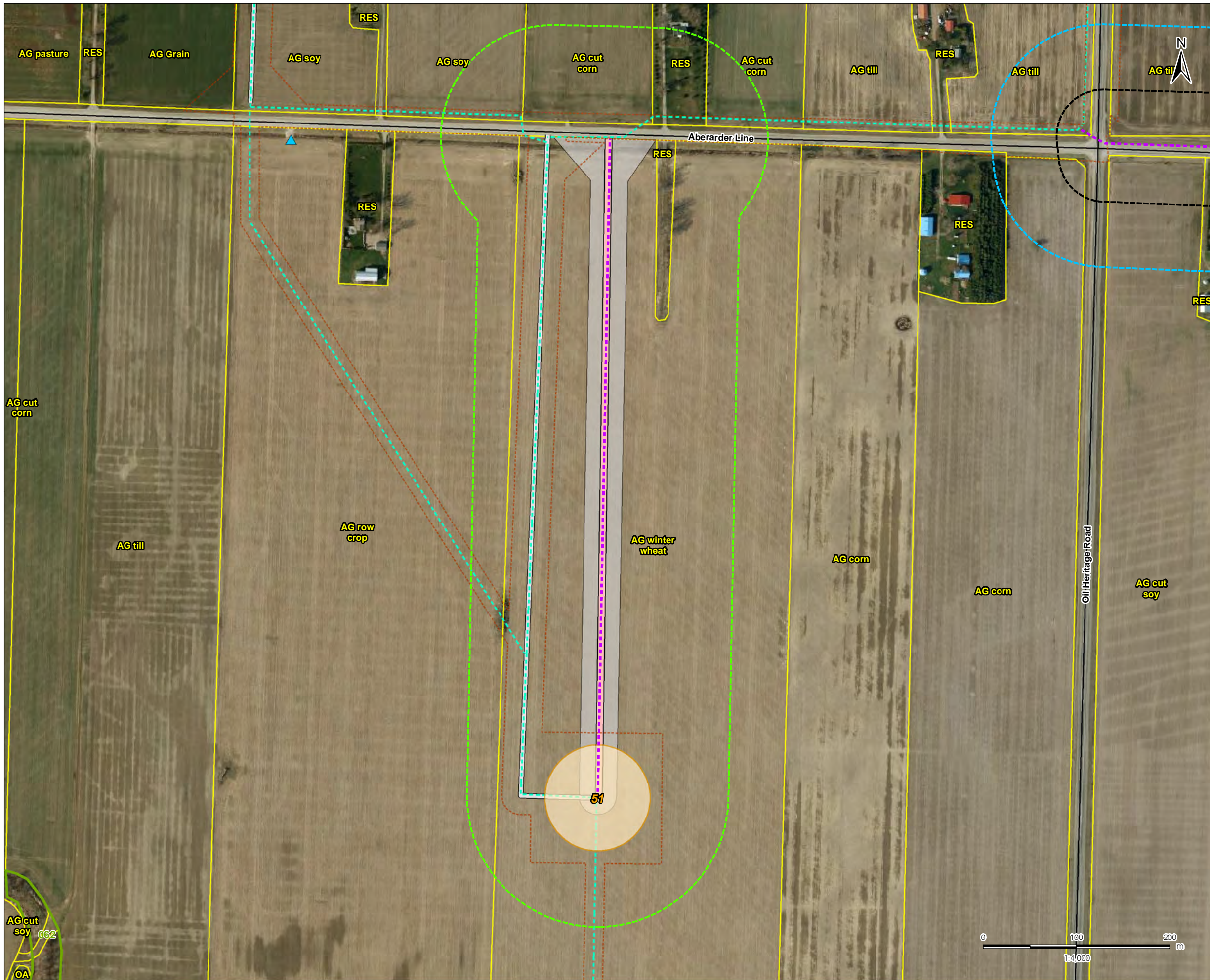
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Figure No.
 5

Title
 Natural Features- T11- Alternative Access Road and Collector Route



- Legend**
- Zone of Investigation- (Terrestrial & Aquatic)
 - Zone of Investigation- (Terrestrial)
 - Zone of Investigation- (Aquatic)
 - New- Unassessed Infrastructure
 - Access Road
 - Collector Line
 - Access Road and Collector Constructible Area (40m)
 - Previously Assessed Infrastructure
 - Proposed Turbine Location
 - Access Road
 - Collector Line
 - Previously Assessed Constructible Area
 - Existing Features
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland



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Figure No.
6

Title
Natural Features- T51- Alternative Access Road and Collector Route

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 Revised: 2014-04-30 By: dhanvey



Legend

- Zone of Investigation- (Terrestrial & Aquatic)
- New- Unassessed Infrastructure**
- Access Road
- Collector Line
- Collector Line
- Access Road and Collector Constructible Area (40m)
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road
- Collector Line
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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Figure No.
7

Title
Natural Features- T23- Alternative Access Road and Collector Route



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May 27, 2014
File: 160960709

Attention: Mr. Joe Halloran
Ontario Ministry of Natural Resources
Southern Region Renewable Energy Operations Team
4th floor, South Tower
300 Water St
PO Box 7000
Peterborough ON K9J 8M5

Dear Mr. Halloran,

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

This letter is submitted as an addendum to the Suncor Energy Cedar Point Wind Project Renewable Energy Approval Application – Natural Heritage Assessment and Environmental Impact Study (NHA/EIS, Stantec 2013) that was submitted to the Ministry of Natural Resources (MNR) in April 2013 and received a confirmation letter on April 11, 2013. This letter report should be read in association with that document.

The purpose of this letter is to:

provide the MNR with an understanding of modifications that have been made to the location of overhead transmission line routes (see Figures 1.1 and 1.2, Attachment 2) in order to avoid newly evaluated Provincially Significant Wetland (PSW) boundaries,

- document an update to the MNR PSW layer (see Figure 2, Attachment 2) since the NHA/EIS was confirmed by MNR, and,
- to provide an assessment of the proposed modifications in order to identify any additional potential effects, mitigation measures, or monitoring requirements that were not included in the NHA/EIS.

The Zone of Investigation (ZOI), as defined in the Cedar Point Wind Project NHA/EIS (Stantec 2013) and based on the O. Reg. 359/09 requirements, is 50 m surrounding collector and transmission lines and 120 m surrounding all other Project components.

1. PROJECT MODIFICATION: TRANSMISSION LINE CHANGES IN NORTHEAST SECTION OF PROJECT AREA

Changes to the location of the overhead transmission line route have been made in the northeast section of the Project. Figures 1.1, 1.2 and 1.3, Attachment 2 show the location of the modified transmission line route.

The modification involves a minor shift in the location of the preferred transmission line route and the minor addition of an optional preferred transmission line route in order to avoid Project



May 27, 2014
Mr. Joe Halloran
Page 2 of 6

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

infrastructure from being located within recently evaluated Provincially Significant Wetland (PSW). Note that only one of the amended transmission line routes will be constructed to avoid Natural Feature 20 as shown in Figure 1.1, Attachment 2.

Clarification is also being provided with respect to the location of the alternate transmission line route that is located within the Cedar Point Line road right-of-way (Figure 1.3, Attachment 2). The alternate transmission line route remains within the Cedar Point Line road right-of-way, however it is being clarified that the transmission line is proposed to be located on the north side of Cedar Point Line to avoid the PSW associated with Natural Feature 24 and will shift to the south side of Cedar Point Line to avoid the PSW associated with Natural Feature 23. In addition, removal of portions of either of the Natural Features is no longer being proposed. These modifications provide Suncor with greater design flexibility, avoid the PSW and minimize overlap with natural features.

The construction and installation activities for modified transmission line routes will be completed in the same manner as the transmission line which is described in the Construction Plan Report, submitted as part of the REA Application.

Change to Identification of Natural Features within 50 m of the New Project Location

Two new features will be located within 50 m of the new transmission line route running east from Fuller Rd and north of Cedar Point Line. These features were originally identified as part of the Cedar Point NHA/EIS site investigations but were removed at a later date due to project layout changes. They are shown on Figure 1.1, Attachment 2 as new Features 21 and 22.

No changes are required to the Records Review of the NHA/EIS.

The Site Investigation of these features was completed on July 4, 2012. Feature 21 contains a fresh-moist sugar maple deciduous forest (Ecological Land Classification code FOD6). Feature 22 contains a maple mineral mixed swamp deciduous forest (Ecological Land Classification code SWM2/FOD). Field notes for the Site Investigation of these features are included in the NHA/EIS in Appendix C.

Criteria and methods for identifying candidate wildlife habitat are provided in Tables 3.1, 3.2 and 3.3 in the NHA/EIS. Neither feature contains any candidate wildlife habitat. As such, no changes are required to Table 3.4, 3.5 and 3.6 of the NHA/EIS, which provide the results of the Site Investigation.

One change is required to the Site Investigation: an update to Table 3.3 to include Features 21 and 22. The updated lines to Tables 3.3 are attached to this letter (Attachment 1).

One change is required to the Evaluation of Significance: an update to Table 4.2 to include Features 21 and 22. The updated lines to Table 4.2 are attached to this letter (Attachment 1). Features 21 and 22 were determined to be significant woodlands.



Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Change to Assessment of Impacts and Mitigation Measures

Minor vegetation removal may be required for this modification as Feature 21 is located within the Project Location of one of the optional preferred routes. A corner of this feature would be removed for a total of 0.02 ha. Section 5.2.1 of the NHA/EIS provides a discussion of negative environmental effects and mitigation to woodlands associated with the construction and decommissioning phases of the Project. Section 5.2.1.1 specifically addresses impacts and mitigation of woodland removal. Section 5.4.1 of the NHA/EIS provides a discussion of negative environmental effects and mitigation to woodlands associated with the operational phases of the Project. General construction mitigation is provided in Section 5.3. Mitigation for Feature 21 will follow that provided in the sections above.

No vegetation removal is required for this modification at Feature 22 as it is located outside of the Project Location (10 m from the overhead transmission line route), and no other vegetation occurs along the road right-of-way in this section of transmission line. As all components of the Project remain outside the woodland, there will be no direct loss of habitat of Feature 22 as a result of the proposed modification. Mitigation for Feature 22 will follow that provided in the Sections 5.2.1, 5.3 and 5.4.1 of the NHA/EIS.

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this modification to the transmission line route.

Due to the modification to the transmission lines routes, some encroachment into significant woodlands, as discussed in Section 5.2.1 of the NHA/EIS, would no longer occur. As such, an update to the NHA/EIS is required; specifically, the following impacts from Section 5.2.1 are revised:

- Removal of 1.60 ha of Woodland 18 will no longer occur;
- Removal of 0.20 ha of Woodland 19 will no longer occur;
- Removal of 0.32 ha of Woodland 20 will no longer occur; and
- Removal of 0.26 ha of Woodland 23 will no longer occur.

Overall Assessment of Changes to NHA/EIS

The modified location for the transmission line route will result in changes to Tables 3.3 and 4.2 of Appendix B of the NHA/EIS. Section 5.2.1 of the NHA/EIS is changed to remove the impact of vegetation removal within some significant woodlands. No additional changes are required.

2. NHA AMENDMENT: ADDITION OF NEW PSW FEATURES

A wetland evaluation was conducted by the MNR in November 2012 which included areas located within the Cedar Point ZOI. Wetlands evaluated by the MNR as provincially-significant within the ZOI are shown on Figure 2, Attachment 2. Information related to the wetland evaluation was not publicly released until after the completion and confirmation of the NHA/EIS.



Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Change to Identification of Natural Features within 120 m of the Project Location

As a result of the MNR's evaluations, a new Provincially-Significant Wetlands (PSW), the Cedar Point, Dolmage & Rawlings Rd Wetland Complex, is located within 120 m of the Project Location.

An update to the Records Review of the NHA/EIS is required to indicate that these features were identified and evaluated by the MNR. Section 2.2.1.1 is updated to include the Cedar Point, Dolmage & Rawlings Rd Wetland Complex, which comprised of 42 individual wetland units, some of which are within 120 m of the Project Location. This will be brought forward to the Site Investigation of the NHA/EIS.

One change to the Site Investigation is required: Section 3.2.2.1 is updated to include that no new PSW communities – outside of those identified and evaluated by the MNR – were identified in the Study Area. The distances from the Project Location to the PSW is identified in the Records Review are provided in the table below. PSW Feature numbers are associated with Figure 2, Attachment 2.

Table 1. Distances between PSWs and Project Components			
PSW Feature	Distances to Project Components (m)	PSW Feature	Distances to Project Components (m)
18	WT – 70 UL – <1 OL – <1 AR – <1 BO – 60	19	WT – 104 UL – <1 OL – <1 AR – 17 BO – >120
20	WT – >120 UL – <1 OL – <1 AR – >120 BO – >120	22	WT – >120 UL – >120 OL – 10 AR – >120 BO – >120
23	WT – 82 UL – <1 OL – <1 AR – >120 BO – 39	24	WT – >120 UL – 11 OL – 11 AR – >120 BO –
31	WT – 18 UL – <1 OL – >120 AR – <1 BO – <1	32	WT – 100 UL – <1 OL – 20 AR – <1 BO – 59



Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Table 1. Distances between PSWs and Project Components			
PSW Feature	Distances to Project Components (m)	PSW Feature	Distances to Project Components (m)
33	WT – >120 UL – <1 OL – >120 AR – >120 BO – >120	34	WT – 67 UL – >120 OL – >120 AR – >120 BO – 40
35	WT – >120 UL – 1 OL – >120 AR – >120 BO – >120	36	WT – >120 UL – >120 OL – >120 AR – >120 BO – >120
37	WT – 77 UL – >120 OL – >120 AR – >120 BO – 61	38	WT – >120 UL – 25 OL – >120 AR – 25 BO – 120
39	WT – 95 UL – >120 OL – >120 AR – >120 BO – 59		

Legend: WT: Wind Turbine; UL: Underground Collector Line; AR: Access Road, OL: Overhead Transmission Line, BO: Balance of Operations, BU: Building/Substation

No changes are required to the Evaluation of Significance report as these PSW communities have already been evaluated as significant by the MNR.

Change to Assessment of Impacts and Mitigation Measures

Section 5.2.2 of the NHA/EIS provides a discussion of negative environmental effects and mitigation to wetlands associated with the construction and decommissioning phases of the Project. Section 5.4.2 of the NHA/EIS provides a discussion of negative environmental effects and mitigation to wetlands associated with the operational phases of the Project.

General construction mitigation is provided in Section 5.3. Mitigation measures for the Cedar Point, Dolmage & Rawlings Rd Wetland Complex will follow that provided in the sections above.

No additional mitigation measures in the NHA/EIS Section 5.0 will be required to accommodate this identification of the Cedar Point, Dolmage & Rawlings Rd Wetland Complex within 120m of the Project Location. No Project infrastructure occurs within wetland boundaries and the overall effects to wetlands remain unchanged from the NHA/EIS.



May 27, 2014
Mr. Joe Halloran
Page 6 of 6

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Overall Assessment of Changes to NHA/EIS

The addition of PSW features will result in changes to Sections 2.2.1.1 and 3.2.2.1 of the NHA/EIS. The Project infrastructure remains outside of wetland boundaries with no changes to effects on the wetlands or mitigation requirements.

For completeness, Andrew Taylor's *curriculum vitae* (one of the authors of this addendum) has been added (Attachment 3) for inclusion in Appendix D of the NHA/EIS. No additional changes are required.

Summary

Stantec Consulting Ltd. prepared this letter report for Suncor Energy for the Cedar Point Wind Power Project. Suncor Energy is committed to implementing the appropriate protection and mitigation measures as they apply to the construction and operation of the proposed Project.

Regards,

STANTEC CONSULTING LTD.

Katherine St. James

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Andrew.taylor@stantec.com

Attachments:

Attachment 1: Update to Table 3.3: Description and Characterizations of Features found within 120 m of the Cedar Point Wind Project
Update to Table 4.2: Woodlands: Evaluation of Significance

Attachment 2: Figure 1: Natural Features – Proposed Transmission Line Revisions
Figure 2: Provincially Significant Wetlands

Attachment 3: CV for Andrew Taylor

c. M. Kozak, Suncor Energy Products Inc.
K. Skillen, Stantec Consulting Ltd.

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May 27, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Attachment 1



May 27, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Update to Table 3.3: Description and Characterizations of Features found within 120 m of the Cedar Point Wind Project							
Feature ID	Size (ha)	Type	Composition	Attributes	Functions	Figure #	Significance (including rationale)
21	0.9	Woodland	FOD6	Fresh-Moist Sugar Maple Deciduous Forest	<ul style="list-style-type: none"> Close to other significant natural features Provides connectivity between significant natural features Provides water protection Woodland diversity representation 	1	Unknown, requires Evaluation of Significance (see Table 4.2)
22	2.7	Woodland	SWM2/FOD	Maple Mineral Mixed Swamp Deciduous Forest	<ul style="list-style-type: none"> Close to other significant natural features Provides connectivity between significant natural features Provides water protection 	1	Unknown, requires Evaluation of Significance (see Table 4.2)

Update to Table 4.2: Woodlands: Evaluation of Significance								
Feature #	Criteria							Significant (Y/N)
	Size (ha) ¹	Interior habitat ²	Proximity to other significant habitats ³	Linkages ⁴	Water protection ⁵	Diversity ⁶	Uncommon Characteristics ⁷	
21	0.9	No	Yes	Yes	Yes	Yes	No	Y
22	2.7	No	Yes	Yes	Yes	Yes	No	Y

¹ Considered significant if >4 ha based on the woodland size criteria standards within the natural Heritage Assessment Guide for Renewable Energy Projects

² Considered significant if any interior habitat is present (i.e., woodland >100 m from any edge)

³ Considered significant if located within 30 m from another natural feature or fish habitat, and >1ha

⁴ Considered significant if located within 120 m of two other significant features, and >1ha

⁵ Considered significant if located within 50 m of groundwater discharge, headwater area, watercourse or fish habitat, and >0.5 ha

⁶ Considered significant if contains native, naturally occurring vegetation types and >1ha – could not be assessed without full access or nearby road access

⁷ Considered significant if contain a rare (S1-S3) vegetation community, rare plant habitat, or large old trees (>10 trees/ha >100 years or >40 cm DBH)

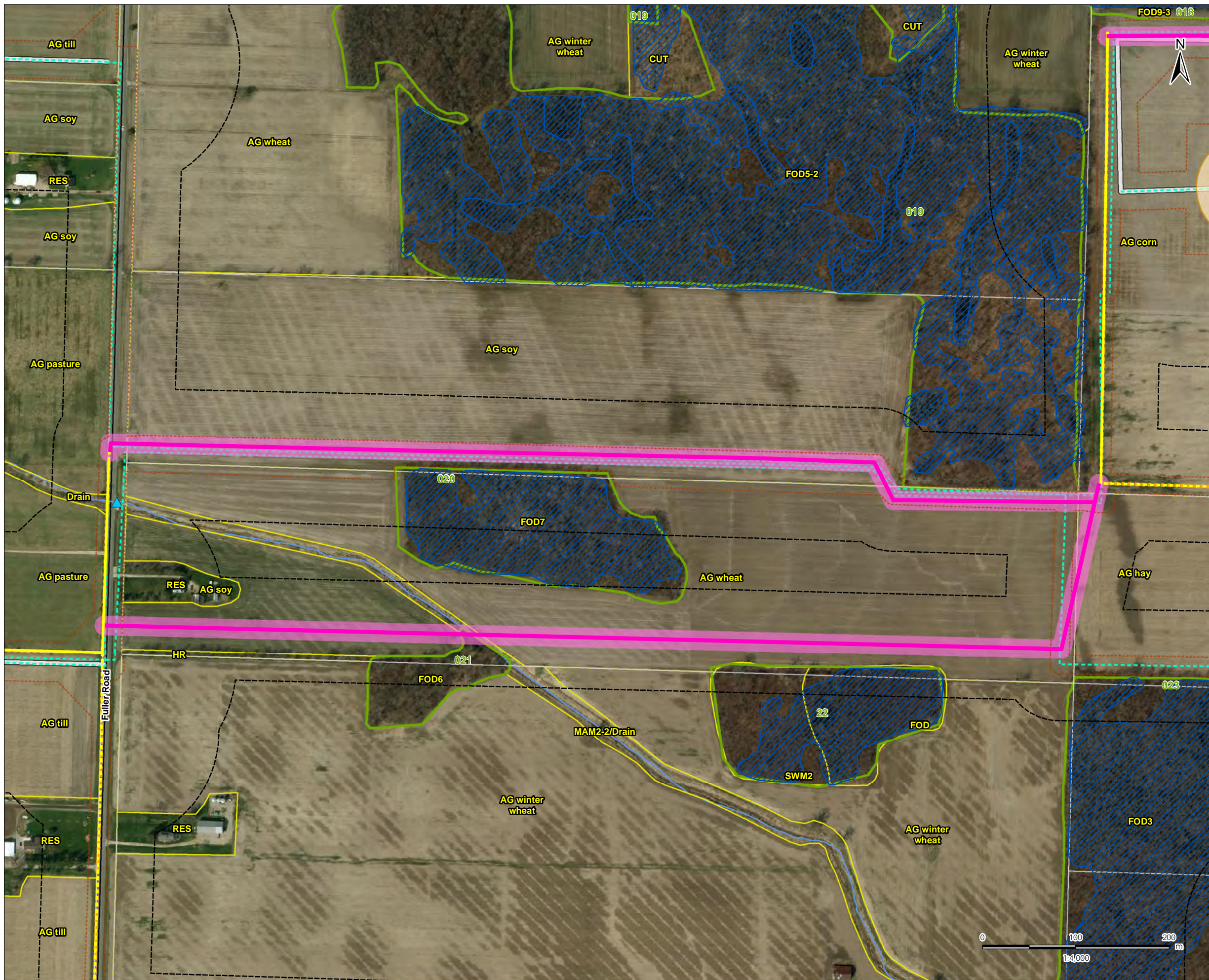


May 27, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Attachment 2

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Legend

- Zone of Investigation
- New/ Modified Infrastructure
- Amended Transmission Line Route Option to Avoid New PSW
- Overhead Transmission Line Constructible Area Previously Assessed
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line- Preferred Route
- Transmission Line- Other Route Option
- Previously Assessed Constructible Area
- Existing Features
- Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Woodland Natural Feature (Stantec)
- Property Boundary
- Wetland- MNR
- Provincially Significant Wetlands



Notes

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Suncor Energy
 Cedar Point Wind Power Project

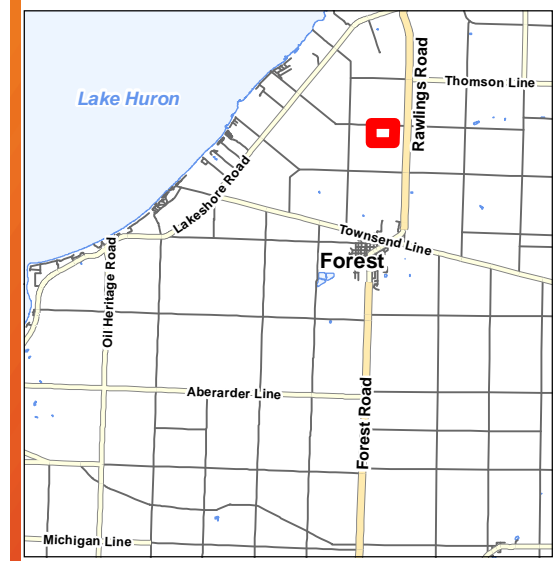
Figure No.
 1.1

Title
 Natural Features- Proposed
 Transmission Line Revision 1

May 2014
 160960709



- Legend**
- Zone of Investigation
 - New/ Modified Infrastructure
 - Amended Transmission Line Route Option to Avoid New PSW
 - Overhead Transmission Line Constructible Area Previously Assessed
 - Proposed Turbine Location
 - Access Road
 - Collector Line
 - Transmission Line- Preferred Route
 - Transmission Line- Other Route Option
 - Previously Assessed Constructible Area
 - Existing Features
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland Natural Feature (Stantec)
 - Property Boundary
 - Wetland- MNR
 - Provincially Significant Wetlands



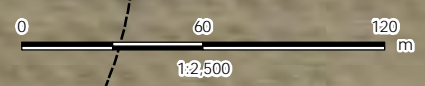
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 Suncor Energy
 Cedar Point Wind Power Project

Figure No.
 1.2

Title

Natural Features- Proposed Transmission Line Revision 2



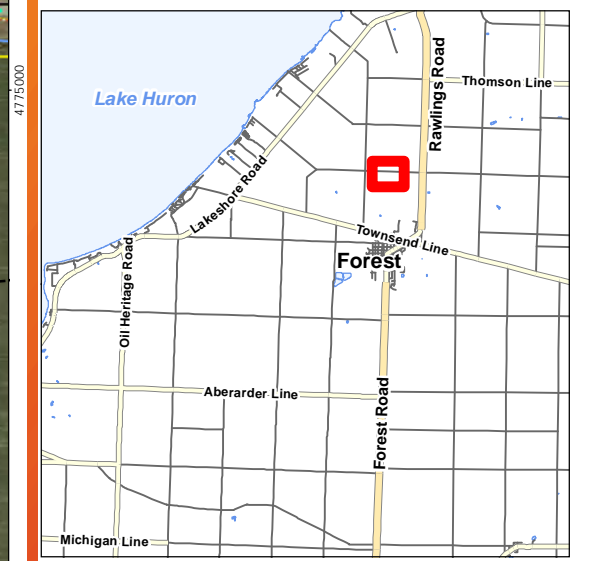
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 Revised: 2014-05-27 By: dhanvey



Legend

- Zone of Investigation
- New/ Modified Infrastructure
- Amended Transmission Line Route Option to Avoid New PSW
- Overhead Transmission Line Constructible Area Previously Assessed
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line- Other Route Option
- Previously Assessed Constructible Area
- Existing Features
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Woodland Natural Feature (Stantec)
- Property Boundary
- Wetland- MNR
- Provincially Significant Wetlands



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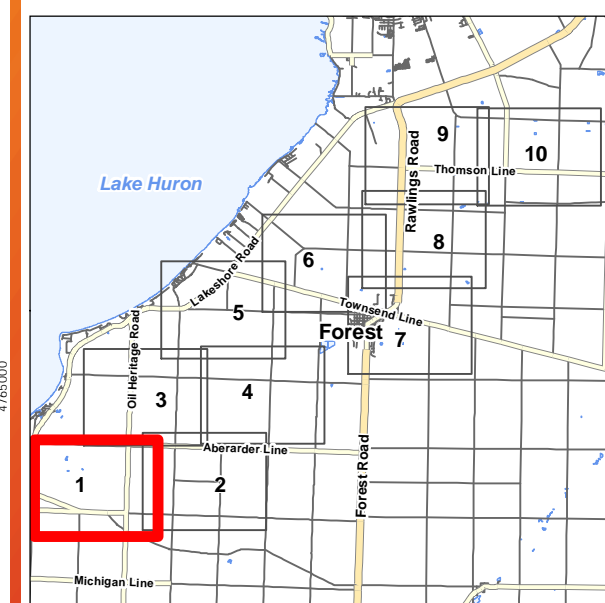
Suncor Energy
Cedar Point Wind Power Project

Figure No.
1.3

Title
Natural Features- Proposed
Transmission Line Revision 3

Legend

- Zone of Investigation
- Project Infrastructure
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
 - Transmission Line
 - Constructable Area
 - Temporary Construction Area
 - Substation/ Operation and Maintenance Building
- Existing Features
 - Road
 - Watercourse
 - Property Boundary
 - Woodland Natural Feature (Stantec)
 - Wetland (Stantec)
 - Wetland- MNR
 - Provincially Significant Wetlands



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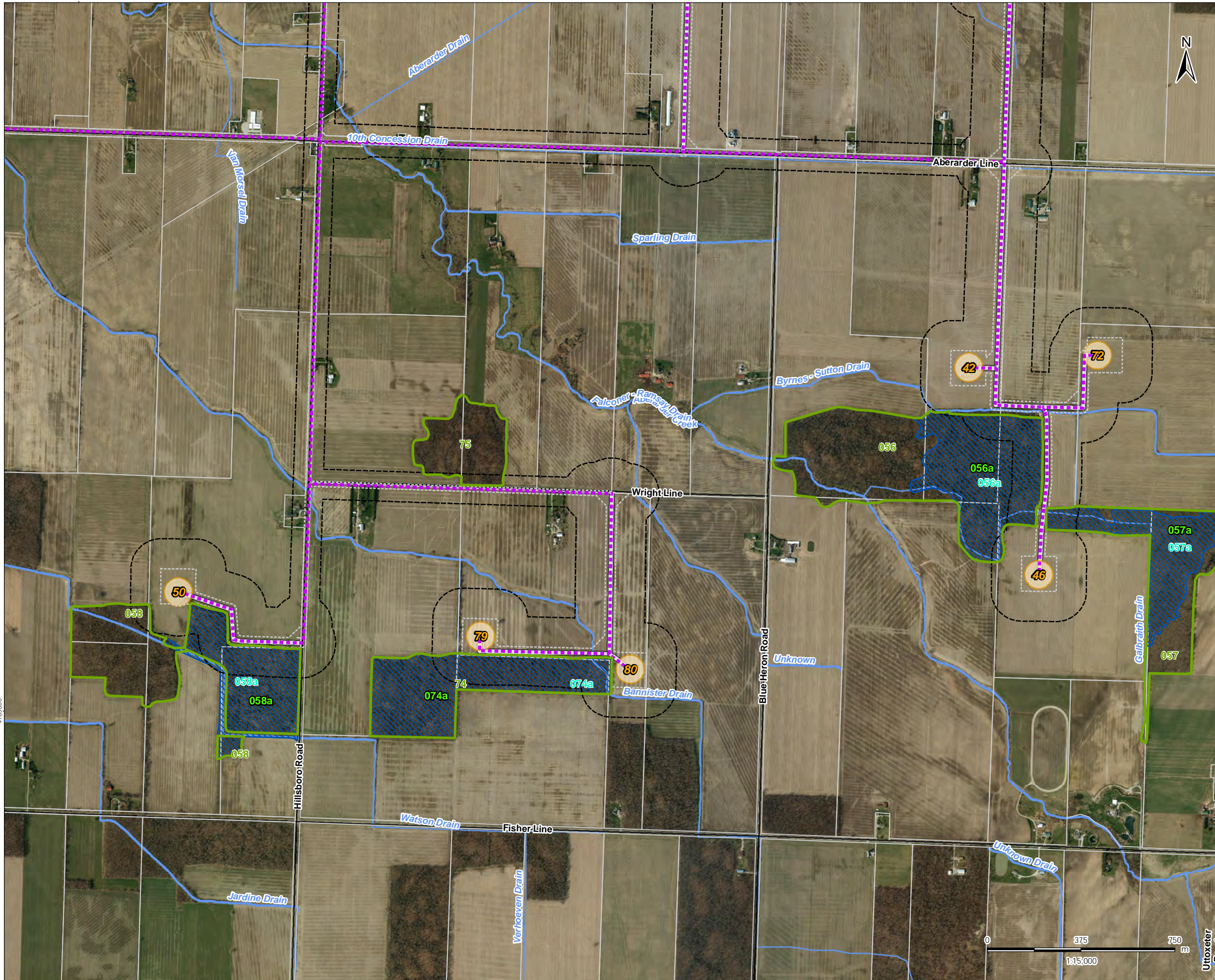
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Figure No.
2. 1

Title
Provincially Significant Wetlands

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 Revised: 2014-05-27 By: dhanvey
 4765000

- Legend**
- Zone of Investigation
 - Project Infrastructure**
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
 - Transmission Line
 - Constructable Area
 - Temporary Construction Area
 - Substation/ Operation and Maintenance Building
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Figure No.
2. 2

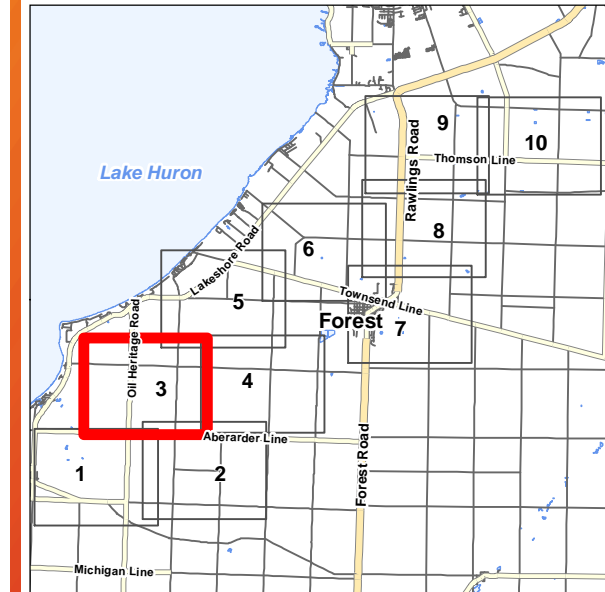
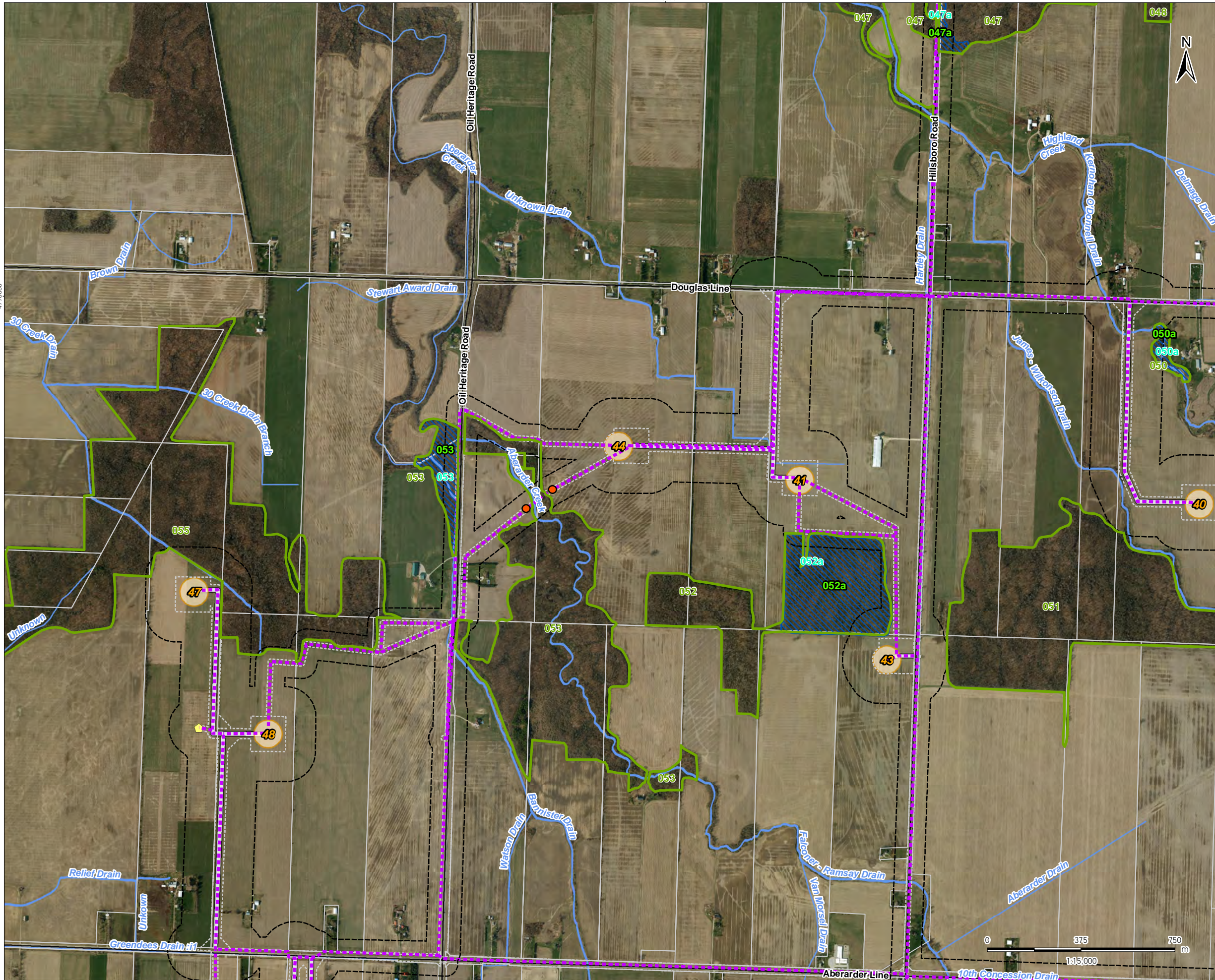
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Provincially Significant Wetlands

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Legend

- Zone of Investigation
- Project Infrastructure
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
 - Transmission Line
 - Constructable Area
 - Temporary Construction Area
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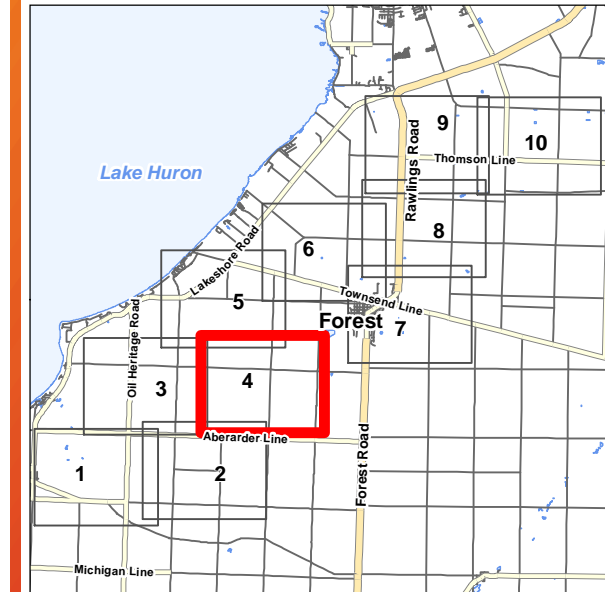
Client/Project
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Cedar Point Wind Power Project

Figure No.
2.3

Title

Provincially Significant Wetlands

- Legend**
- Zone of Investigation
 - Project Infrastructure**
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
 - Transmission Line
 - Constructable Area
 - Temporary Construction Area
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Cedar Point Wind Power Project

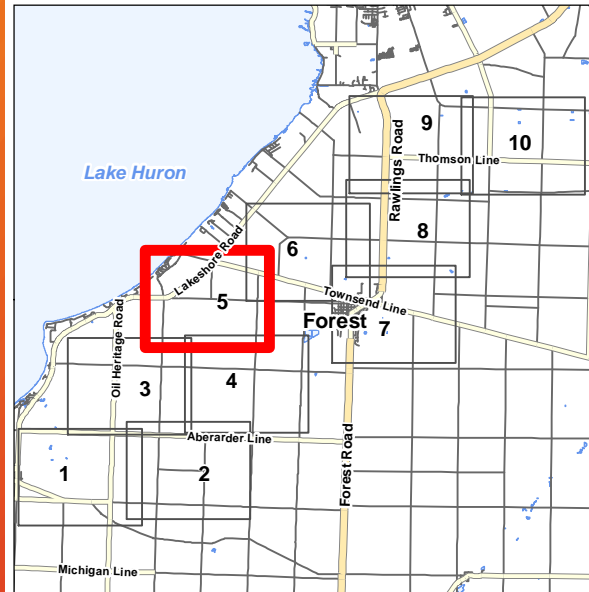
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Title
Provincially Significant Wetlands



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- Legend**
- Zone of Investigation
 - Project Infrastructure**
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
 - Transmission Line
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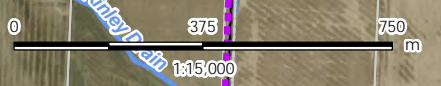
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Client/Project
Suncor Energy
Cedar Point Wind Power Project

Figure No.
2.5

Title

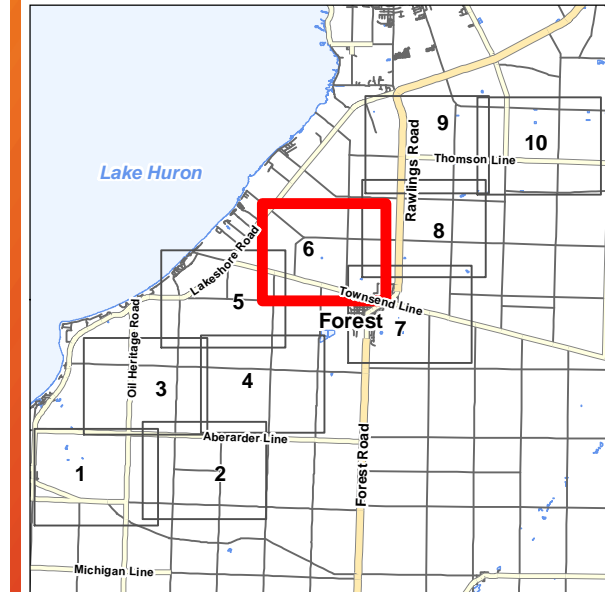
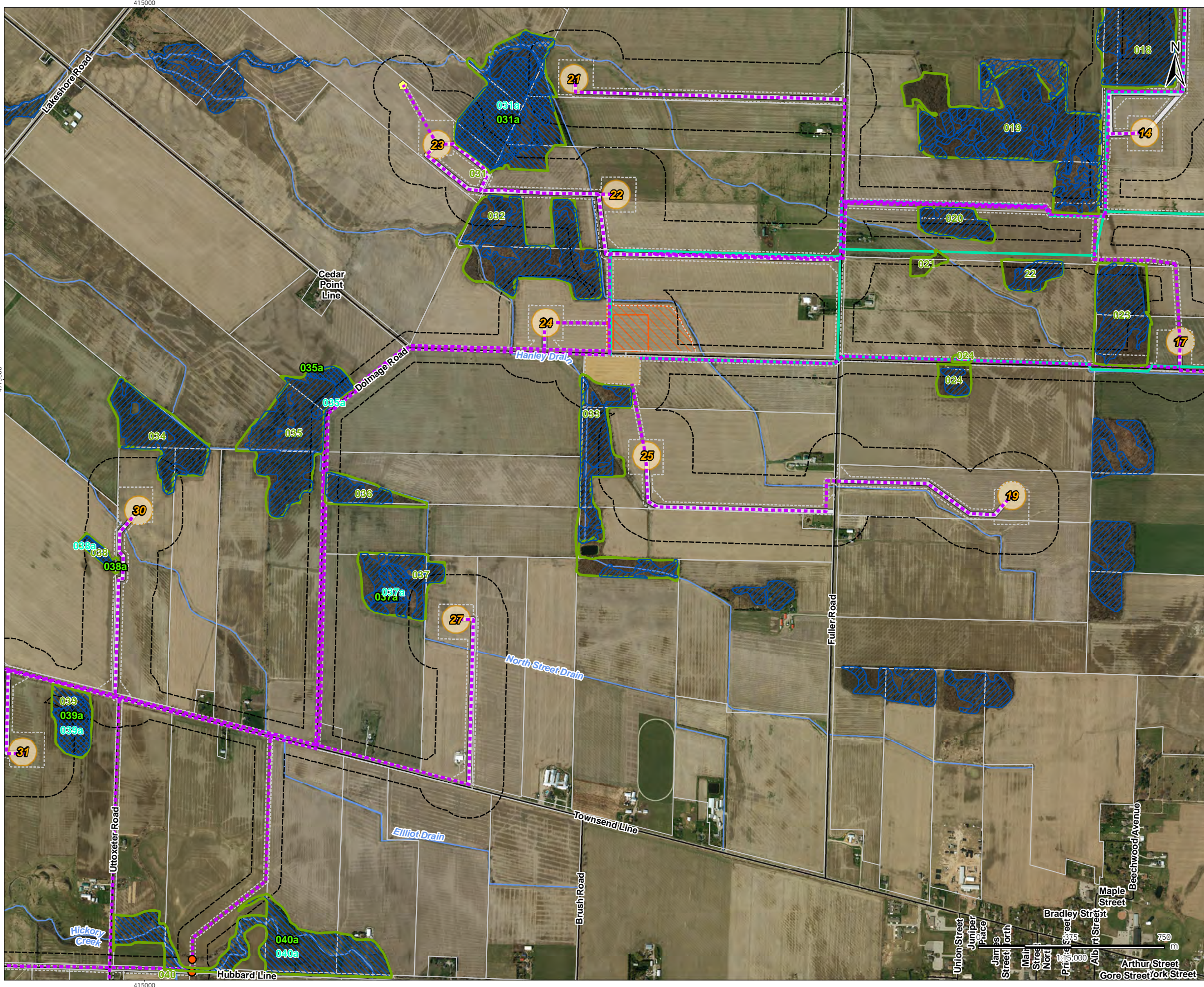
Provincially Significant Wetlands



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Legend

- Zone of Investigation
- Project Infrastructure
 - Proposed Turbine Location
 - MET Tower
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 - Collector Line
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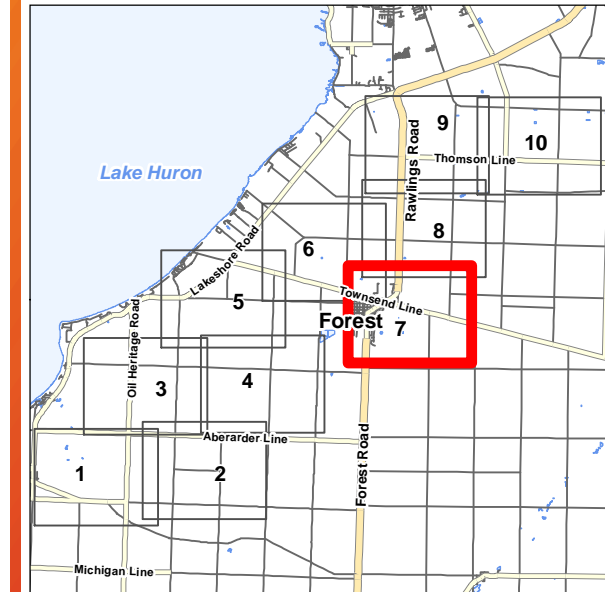
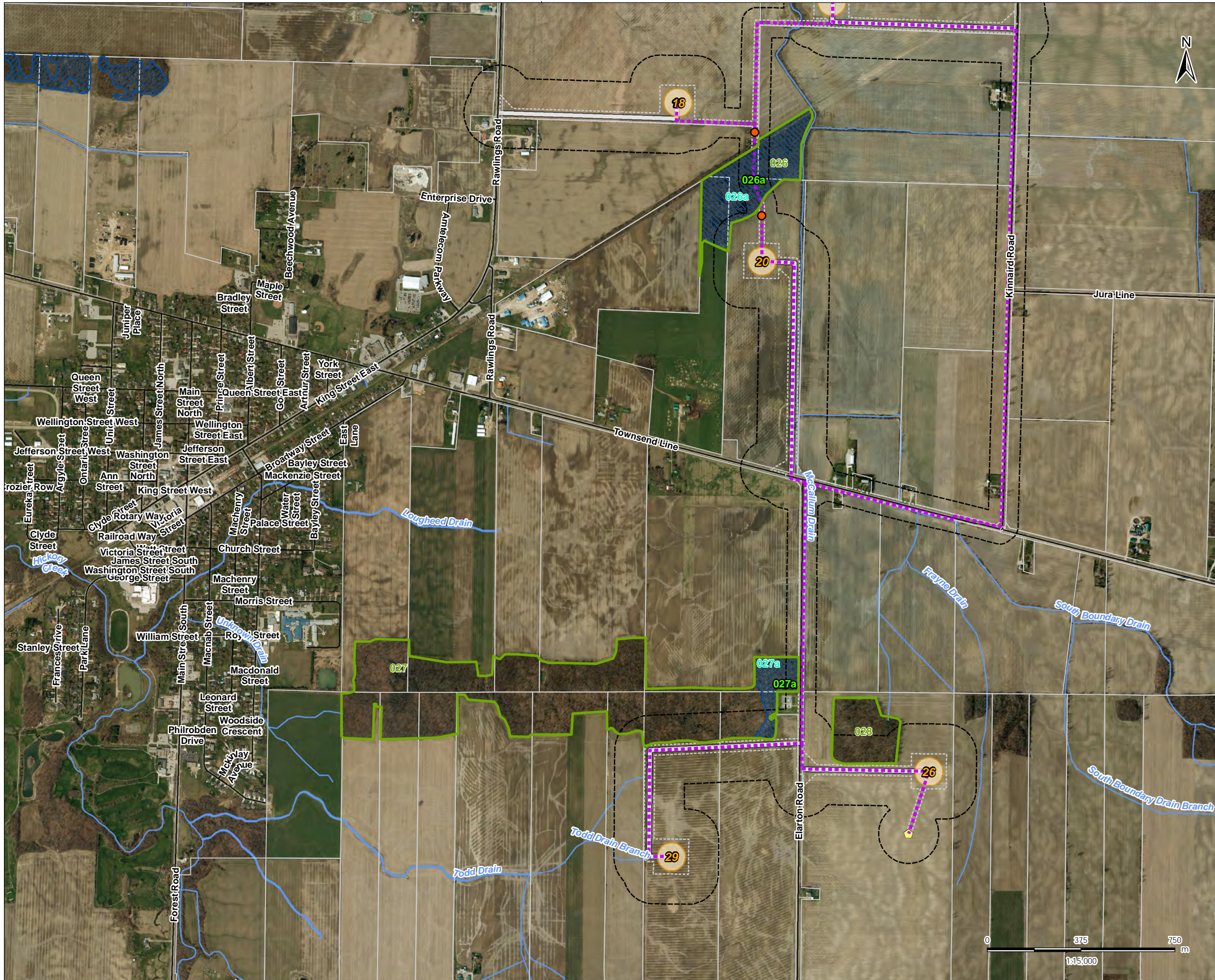
Client/Project
Suncor Energy
Cedar Point Wind Power Project

Figure No.
2.6

Title
Provincially Significant Wetlands

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- Legend
- Zone of Investigation
 - Project Infrastructure
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
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Cedar Point Wind Power Project

Figure No.
2.7

Title

Provincially Significant Wetlands

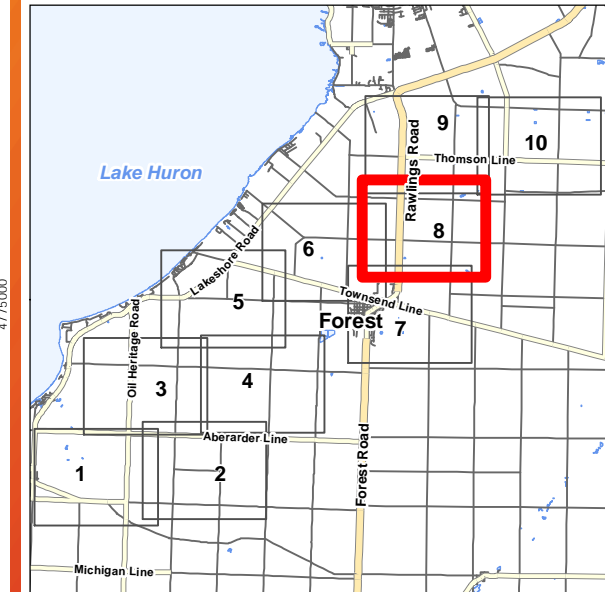
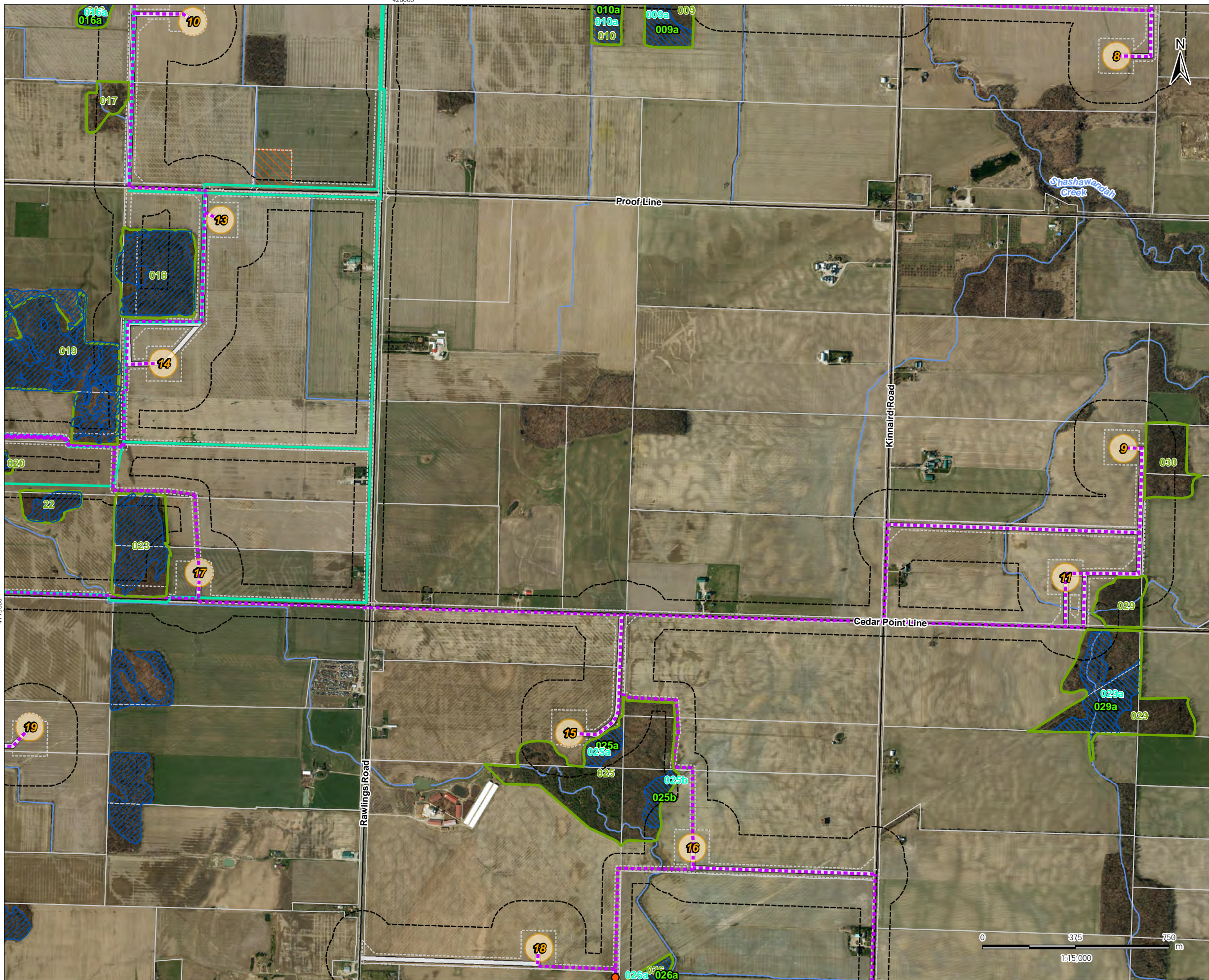


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Legend

- Zone of Investigation
- Project Infrastructure
 - Proposed Turbine Location
 - MET Tower
 - HD Location- Drill Pits
 - Access Road
 - Collector Line
 - Transmission Line
 - Constructable Area
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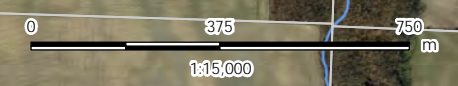
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Client/Project
Suncor Energy
Cedar Point Wind Power Project

Figure No.
2. 8

Title

Provincially Significant Wetlands



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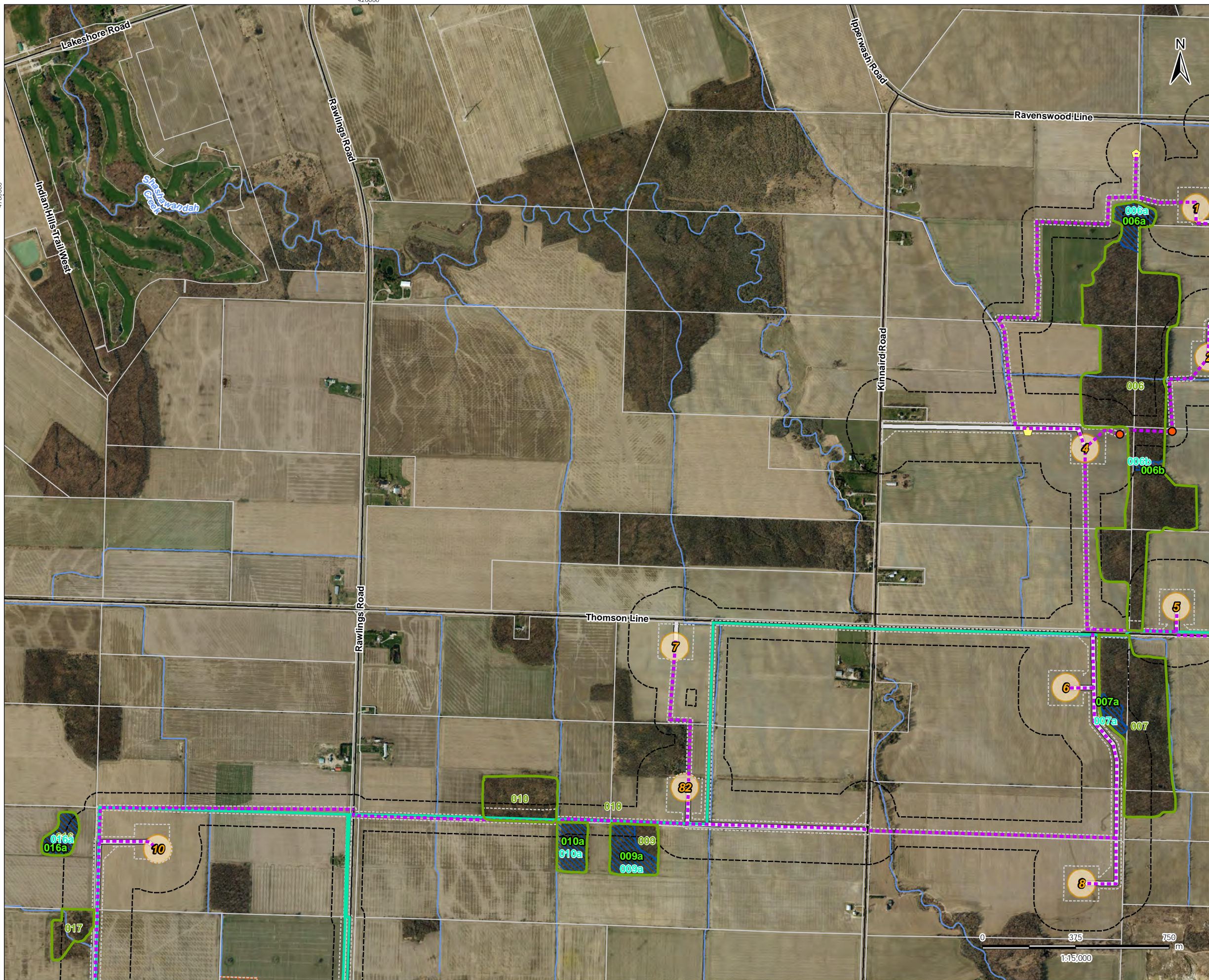
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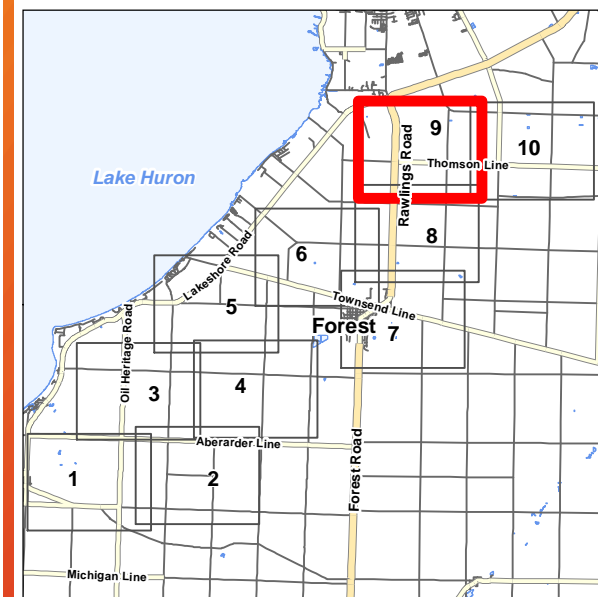
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Revised: 2014-05-27 By: dhanvey



Legend

- Zone of Investigation
- Project Infrastructure**
- Proposed Turbine Location
- ★ MET Tower
- HD Location- Drill Pits
- Access Road
- Collector Line
- Transmission Line
- Constructable Area
- Temporary Construction Area
- Substation/ Operation and Maintenance Building
- Existing Features**
- Road
- Watercourse
- Property Boundary
- Woodland Natural Feature (Stantec)
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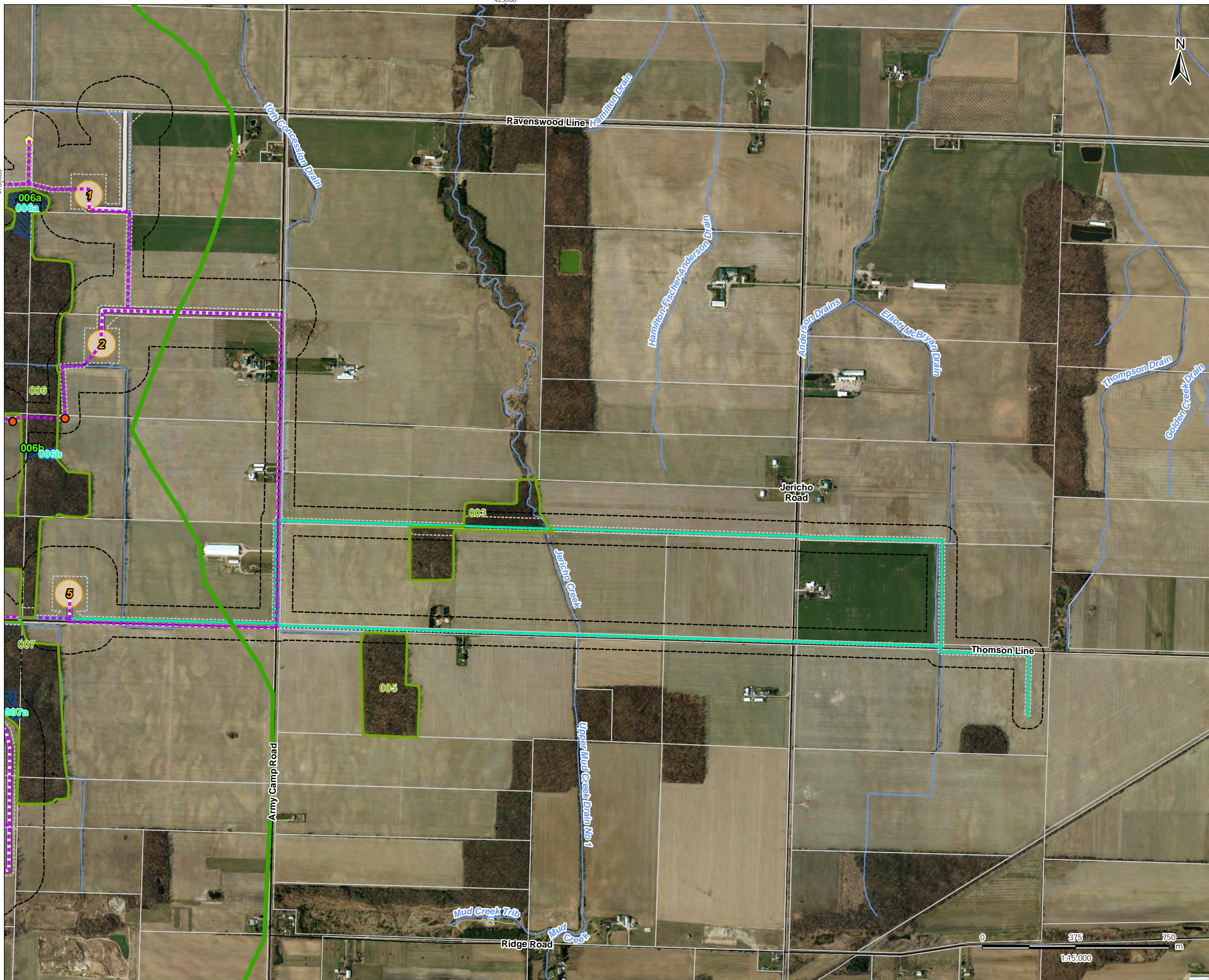
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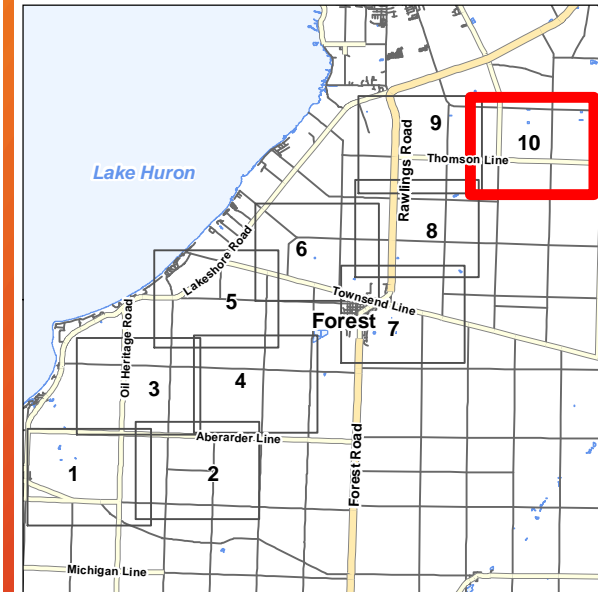
Provincially Significant Wetlands

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Legend

- Zone of Investigation
- Project Infrastructure
- Proposed Turbine Location
- ★ MET Tower
- HD Location- Drill Pits
- Access Road
- Collector Line
- Transmission Line
- Constructable Area
- Temporary Construction Area
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Client/Project

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Cedar Point Wind Power Project

Figure No.

2. 10

Title

Provincially Significant Wetlands

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425000





May 27, 2014
Mr. Joe Halloran

Reference: Suncor Energy Cedar Point Wind Project NHA Addendum – May 2014

Attachment 3

Andrew Taylor is a knowledgeable terrestrial ecologist and project manager. He has successfully managed both small and large projects, including environmental impact statements, constraint analyses and environmental implementation reports. In addition, he has coordinated natural heritage components of Environmental Assessments. These projects involve the implementation of natural heritage policies of the Ontario Provincial Policy Statement, Greenbelt Plan and municipal policy documents. He is familiar with various Acts and their application to projects, including the *Migratory Birds Convention Act*, *Endangered Species Act*, *Species at Risk Act* and others. Andrew also has experience with policies pertaining to Threatened and Endangered Species including Butternut.

Andrew has strong field skills including identification of vascular plants, breeding amphibians (calling frogs and toads), breeding salamanders (adult and egg studies), reptiles and bats, with a particular emphasis on birds, butterflies and dragonflies. He is skilled at assessing wildlife habitat, applying Ecological Land Classification (ELC) and delineating wetland boundaries. Andrew is experienced at analyzing natural heritage features for the presence of Significant Woodlands or Significant Wildlife Habitat using guidance documents such as the 'Natural Heritage Reference Manual, How Much Habitat is Enough?' and the 'Significant Wildlife Habitat Technical Guide'.

Andrew has provided terrestrial ecology expertise in a wide range of sectors, including urban lands, energy (including renewable energy), recreational development, infrastructure and aggregate extraction.

EDUCATION

B.Sc. (Hons), University of Guelph / Environmental Toxicology, Guelph, Ontario, 2001

Certificate, Ecological Land Classification for Southern Ontario, Turkey Point, Ontario, 2006

AWARDS

2000 University of Guelph, Dean's List

1997 University of Guelph, Dean's List

PROJECT EXPERIENCE

Aggregate Services

Proposed Bromberg Pit, Ayr, Ontario (Terrestrial Ecologist)

Natural environment field inventories with emphasis on Species at Risk (SAR).

Neubauer Pit, Town of Puslinch, Ontario (Terrestrial Ecologist)

Natural environment field inventories with emphasis on Species at Risk (SAR).

Dufferin Aggregates Acton Quarry Extension, Acton, Ontario (Terrestrial Ecologist)

The extension of the existing Acton Quarry is proposed to meet the need for additional close-to-market aggregate resources of high quality Amabel Dolostone. Andrew has conducted extensive ecological field surveys and habitat assessments for breeding birds, amphibians and mammals with specific emphasis on Species at Risk (SAR).

St. Marys Cement Flamborough Quarry License Environmental Impact Study and Level 2 Natural Environment Technical Report (Ecologist)

Identification and impact assessment of natural heritage features, compensation and management plan for Species at Risk (Butternut), water balance to maintain provincially significant wetland, salamander habitat and migration study, assessment of provincially significant woodland and significant wildlife habitat, environmental impacts of transportation.

Electrical Power Distribution

Bruce to Milton Transmission Reinforcement Project, Multiple Sites, Ontario (Terrestrial Ecologist)

Terrestrial surveys related for Species at Risk (SAR) protected under the provincial Endangered Species Act (2007).

Andrew Taylor B.Sc.

Ecologist

Coote's Paradise Transmission Reinforcement Project, Hamilton, Ontario (Terrestrial Ecologist)
Terrestrial surveys included vegetation community assessments, floral inventory, with emphasis on Species at Risk (SAR).

Natural Sciences & Heritage Resources

Crates Marina, Keswick, Ontario (Project Manager / Ecologist)

Environmental policies, approvals and design. Identification of natural heritage features and sensitive species.

Kortright East Development, Guelph, Ontario (Project Manager / Ecologist)

Environmental Implementation Report. Vegetation buffers, wildlife corridor, tree conservation plan, planning and design of invasive species removal, design of compliance and performance monitoring program.

Southeast Sutton Development Area Plan, Sutton, Ontario (Project Manager / Ecologist)

Environmental policies, approval and design. Identification of natural heritage features and constraints for Development Area Plan. Plan of Subdivision forest buffers, mitigation of impacts to forest resources, sensitive vegetation and Species at Risk. Participation in Ontario Municipal Board discussions.

Fourteen Mile Creek Development, Oakville, Ontario (Ecologist)

Natural Heritage Monitoring Program Director - directed monitoring program of vegetation communities, change in species composition, avian wildlife, aquatic Species at Risk, benthic invertebrate communities, hydrogeology, geomorphology and erosion.

Activa Waterloo East, Waterloo, Ontario (Ecologist)

Terrestrial and Aquatic Monitoring Program - monitoring of vegetation communities, changes in species composition and disturbance levels were undertaken, interpreted and reported. Directed monitoring of benthic invertebrate communities.

Oil & Gas

Bickford to Dawn Pipeline Project, Chatham, Ontario (Terrestrial Ecologist)

Terrestrial surveys included vegetation community assessments, floral inventory and Species at Risk (SAR) habitat assessments. Study design and development in conjunction with local Ontario Ministry of Natural Resources (OMNR) district for Eastern Foxsnake, including a SAR 17b permit application.

Renewable Energy

Environmental Screening Report / Environmental Review Report, Multiple Projects, Various Sites, Ontario (Terrestrial Ecologist)

Environmental Screening Reports (ESR's)/Environmental Review Reports (ERR's) were prepared for various wind energy projects in compliance with the Ministry of the Environment's Guide to Environmental Assessment Requirements for Electricity Projects and the Canadian Environmental Assessment Act (CEAA). Andrew's involvement included pre-construction study design, coordination and conducting of monitoring for avian and other wildlife species, including targeted surveys for Species at Risk (SAR). Avian studies included breeding grassland and forest birds, wintering raptors and migratory surveys for waterfowl, raptors, passerines and shorebirds. Andrew also conducted and coordinated acoustic bat surveys including data collection, species identification, data analysis and reporting, and co-authoring technical reports as part of the following projects:

- Wolfe Island Wind Project (Wolfe Island, Ontario; 86 turbines);
- Port Alma Wind Power Project (Municipality of Chatham-Kent, Ontario; 44 turbines);
- Plateau Wind Project (Municipality of Grey Highlands & Melancthon Township, Ontario; 18 turbines);
- Kingsbridge II Wind Project (Huron County, Ontario; 69 turbines);
- Gosfield Comber Wind Energy Project (Essex County, Ontario; 149 turbines);
- Chatham Wind Power Project (Municipality of Chatham-Kent, Ontario; 44 turbines); and
- Melancthon Wind Plant, Phases I & II (Melancthon and Amaranth Townships, Ontario; 177 turbines)

* denotes projects completed with other firms

Andrew Taylor B.Sc.

Ecologist

Post-construction Monitoring Programs, Multiple Projects, Various Sites, Ontario (Terrestrial Ecologist)

The post-construction of monitoring of renewable energy projects assess the direct impacts to birds and bats and indirect impacts to breeding, migrating and wintering wildlife. The purpose of post-construction monitoring programs is to verify predictions of the pre-construction assessment and if necessary, implement appropriate measures to mitigate adverse effects.

Andrew has coordinated and conducted monitoring field studies including assessment disturbance to grassland, forest and wetland breeding birds, staging waterfowl and shorebirds, tundra swans and wintering raptors and co-authored or authored the post-construction monitoring reports for the following projects:

- Wolfe Island Wind Project (Wolfe Island, Ontario; 86 turbines);
- Melancthon Wind Plant, Phase I & II (Melancthon & Amaranth Townships, Ontario; 177 turbines);
- Kingsbridge I Wind Plant (Huron County, Ontario; 22 turbines); and
- Port Alma Wind Power Project (Municipality of Chatham-Kent, Ontario; 44 turbines);

Renewable Energy Approval (REA), Multiple Projects, Various Sites, Ontario (Terrestrial Ecologist)

Natural Heritage Assessments (NHA's) and Environmental Impact Studies (EIS's) were prepared in accordance with Ontario Regulation 359/09 issued under the Environmental Protection Act with guidance obtained from the Draft Natural Heritage Assessment Guide for Renewable Energy Projects (MNR, 2010). NHA's included records review and site investigation which included, but not limited to, vascular plant surveys. Ecological Land Classification (ELC) and wildlife surveys for avian species, amphibians, reptiles, mammals and invertebrates. Results of the field investigations were used to identify and evaluate significant natural heritage features including wetlands, woodlands, valleylands and significant wildlife habitat. Outside the REA process, field surveys and habitat assessment were completed for species protected under the provincial Endangered Species Act.

Andrew coordinated and conducted field studies, habitat assessments for Species at Risk (SAR), authored technical reports and public consultation for the following renewable energy projects:

- Grand Renewable Energy Park (Haldimand County, Ontario; 69 turbines and solar totalling 253.1 MW);
- Port Dover and Nanticoke Wind Project (Norfolk and Haldimand Counties, Ontario; 58 turbines);
- Ostrander Wind Energy Park (Prince Edward County, Ontario; 9 turbines);

- Fairview Wind Farm (Simcoe County, Ontario; 4 turbines);
- Whittington Wind Farm (Dufferin County, Ontario; 3 turbines);
- Springwood Wind Farm (Wellington County, Ontario; 4 turbines); and
- Brooke-Alvinston Wind Farm (Lambton County, Ontario; 4 turbines)

Research / Laboratories

Rice Lake Plains Joint Initiative*, Northumberland County, Ontario (Ecologist)

Tallgrass prairie research program. Identification and detailed cataloging of remnant tallgrass prairie sites, landowner liaison and education, development of tallgrass prairie management plans, reporting of findings.

Alderville First Nations Black Oak Savannah*, Alderville, Ontario (Ecologist)

Tallgrass prairie and black oak savannah research program. Technical reporting. Vegetation monitoring, tallgrass prairie reconstruction, wildlife monitoring, Species at Risk reintroduction.

Sports, Recreation & Leisure

Sunnidale Park Master Plan, Barrie, Ontario (Ecologist)

Identification and delineation of ecological management units. Design of management plans for ecological units, wetland and forest habitat rehabilitation. Technical reporting.

Transportation Planning

City of Toronto Fort York Pedestrian Footbridge, Toronto, Ontario (Terrestrial Ecologist)

Coordinated Natural Sciences component of project including assessment of potential impacts, with an emphasis on Species at Risk (SAR).

Natural Science Reports Related to MTO Highway Improvement Works, Various Sites, Ontario (Terrestrial Ecologist)

Produced numerous Natural Sciences reports related to highway improvement works. Where required, Fisheries Act authorization was obtained and Fish Habitat Compensation Plans were developed. Potential impacts to terrestrial vegetation, wetlands and wildlife were described for the following studies:

- Highway 3 (Essex County): Preliminary Design Study;

* denotes projects completed with other firms

Andrew Taylor B.Sc.

Ecologist

- *Highway 40 (Municipality of Chatham-Kent): Detail Design Study;*
- *Highway 11 (Town of Bracebridge): Preliminary Design;*
- *Highway 24 (Cambridge): Detailed Design;*
- *Highway 8 (Perth County): Detailed Design;*
- *Highway 401 (Kitchener): Post-construction Compliance Monitoring;*
- *Highway 401 (Essex County, near Comber): Post-construction Compliance Monitoring;*
- *Highway 26 (County of Grey): Post-construction Compliance Monitoring;*
- *Highway 17 (Sudbury): Preliminary Design Study;*
- *Highway 9 (Municipality of South Bruce): Post-construction Compliance Monitoring.*

* denotes projects completed with other firms

Appendix C:

**Water Assessment and Water Body Report Revisions:
Table 3-2 Master Summary Table of Waterbodies and
Project Components of the Water Body Report, and
Field Notes**

Table 3.2: Master Summary Table of Waterbodies and Project Components

Water Body	WB Station(s)	NWB Station(s)	Crossing Class			Within 120 m					Fish Habitat	
			Access Road and Associated Collector Line ^a	Collector Line Only	Overhead Transmission Line	Turbine ^b	Access Road and Associated Collector Line ^a	Collector Line Only	Overhead Transmission Line	Substation/MET Tower	Direct Permanent (P) or Seasonal (S)	Indirect
Bonnie Doon Creek												
Bonnie Doon Creek	27-3, 27-4			1								P
Jardine Drain	27-1					T53	T53	Y				S
Greendees Drain	25-2, 25-5		T51	2			T47 & T48					S
30 Creek Drain												
30 Creek Drain	23-1					T47	T47	Y				P
Aberarder Creek												
Aberarder Creek	33-1, 32-1, 22-1, 22-5			4								P
Watson Drain*	26-1, 34-1			1			T50					S
Bannister Drain	22-6, 34-2, 24-1, 62-2, 26-2		T79	4		T80 & T79	T80	Y				P
Bannister Drain-1	62-3					T79						S
Byrnes-Sutton Drain	45-2		T46			T42	T72					S
Byrnes-Sutton Drain-1	45-3						T46 & T72					S
10th Concession Drain	46-2, 33-2		T42	1			T69	Y				S
Aberarder Creek-1	32-3			2				Y				S
Unknown Drain	22-3, 22-2	22-3	T41/T44									S
Highland Creek												
Highland Creek	31-3, 21-1, 64-2		T40	3				Y				P
James-Wilkinson Drain	31-2, 55-3	46-1, 55-2		1			T40	Y				P
Hartley Drain	32-2, 31-1			2		T43	T43	Y				S
Kernohan-O'Donnel Drain	60-1, 55-1, 64-3			1			T81 and T76	Y				P
Douglas Drain												
Douglas Drain	18-5, 18-1	56-1		2		T37 and T36	T36					S
Douglas Drain-1	18-3			2								S

Table 3.2: Master Summary Table of Waterbodies and Project Components

Water Body	WB Station(s)	NWB Station(s)	Crossing Class			Within 120 m					Fish Habitat		
			Access Road and Associated Collector Line ^a	Collector Line Only	Overhead Transmission Line	Turbine ^b	Access Road and Associated Collector Line ^a	Collector Line Only	Overhead Transmission Line	Substation/MET Tower	Direct Permanent (P) or Seasonal (S)	Indirect	
Hickory Creek													
Hickory Creek	20-1, 19-2, 17-1, 17-5			4		T34	T34	Y				P	
McKinley Drain	19-1, 19-4, 56-2			4								P	
McKinley Branch Drain	57-1			1								S	
Fisher Drain	20-2			1								S	
Unknown Drain 2	19-3		T35	2								S	
Anderson Drain													
Anderson Drain	16-5, 17-3, 17-2, 17-4		T34, T32 & T31	1		T32	T30						Y
Elliot Drain													
Elliot Branch Drain	16-4			2			T27	Y				S	
Elliot Drain	16-1, 16-2		T30	2		T30		Y				S	
North Street Drain													
North Street Drain	16-3		T27	1		T27						S	
Woods Creek													
Woods Creek	10-1, 11-1, 14-2, 14-4		T21	1	3	T15, T17, T16 & T21	T17, T16	Y		MET Tower		P	
Woods Creek-1	11-2							Y	Y				Y
Malley Drain	42-1			1								S	
McCallum Drain	52-1, 51-3		T26	1			T20 & T29					S	
Haney Drain	15-1			1		T24	T24	Y		Substation		P	
Brush Drain	12-3, 12-2, 12-1, 14-3		T23	3	1	T19, T22, T21	T19, T25, T22, T21			Temporary Construction Area		S	
South Boundary Drain	51-2, 51-4			1		T20	T20	Y				S	
South Boundary Drain-1	51-1							Y				S	
James Creek Drain													
James Creek Drain	13-1, 14-1						T21					S	

Table 3.2: Master Summary Table of Waterbodies and Project Components

Water Body	WB Station(s)	NWB Station(s)	Crossing Class			Within 120 m					Fish Habitat	
			Access Road and Associated Collector Line ^a	Collector Line Only	Overhead Transmission Line	Turbine ^b	Access Road and Associated Collector Line ^a	Collector Line Only	Overhead Transmission Line	Substation/MET Tower	Direct Permanent (P) or Seasonal (S)	Indirect
Beith Creek												
Frayne Drain	4-3, 5-4			1	1							S
Wadsworth Drain	6-1, 6-2, 5-7			1	4	T13	T13 and T10					S
Beith Creek Drain	5-2, 5-1, 5-3		T13		1	T13	T10		Y			S
Shashawandah Creek												
Shashawandah Creek	9-2, 9-5, 3-1, 3-2, 2-6		T11 & T9	1	1	T11	T82	Y				P
Russel Drain	9-1						T11	Y				S
Ross Drain	4-1, 4-4		T82		1	T7 & T82	T7	Y				S
Stewardson Drain	4-2, 4-5			1	1							S
Duffus Drain												
Lusby Drain	2-5, 2-3, 2-2		T6 & T4		1	T5	T5	Y		Y		S
Duffus Drain	2-4, 2-7, 2-1			3	1	T2	T2					S
Walden Drain	1-3		T1			T1		Y		Y		S
Mud Creek												
Mud Creek	53-1, 53-4, 53-5				1							P
10th Concession Drain	53-2, 53-3, 1-4				1		T2					P
Golden Creek												
Elliot-McBryan Drain	43-1				3							S
^a includes crane path ^b turbine plus associated laydown area [*] Field investigations suggest that this is a straight trapezoidal channel containing water and is not tiled. T53 - Turbine 53												



RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Bannister Drain 26-2 WB

Stantec

Project C.P. Station # 26-2 Project # 160960709 Field Staff KE + MF Photos Taken Date Nov. 24 2011 GPS Coordinates 17 4767318 409693 Time 10:40 Descriptive Location Aberarder line 500 m east of O.I Heritage

Water Quality

Dissolved Oxygen (mg/L) 13.02 pH 8.02 Conductivity (µS/cm) 657 Water Temperature (°C) 5.99 Air Temperature (°C) 5 Weather conditions in previous 24 hrs cold, sunny + fog

Watercourse Dimensions & Morphology

Mean Watercourse Width 1 (m) Maximum Pool Depth 20 (cm) Mean Bankfull Width 4 (m) Mean Water Depth 15 (cm) % Riffle % Pool 100 % Run % Flat Evidence of eroding banks, Comments on bank stability vegetated + stable

Substrate - Upstream (% cover)

Bedrock Silt Boulder 40 Clay Cobble Muck 10 Gravel Marl Sand 50 Detritus

Substrate - Downstream (% cover)

Bedrock Silt Boulder 40 Clay Cobble Muck 10 Gravel Marl Sand 30 Detritus

In-water Cover

Cover Types Present (circle): Overhanging Vegetation Undercut Banks Woody Debris Deep Pool Boulder Vascular Plants cattails Other

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)

Upstream 0% Downstream 20% trees + overhanging veg

Adjacent Land Use

Upstream Ag fields Downstream

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)

Upstream none Downstream

Migratory Obstructions (seasonal, permanent)

Upstream dry in summer? Downstream

Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc.

-mod fast flow, tile drainage inputs, slightly turbid, narrow -cattail somewhat thick in channel, esp dls



WIND FARM WATERBODY RAPID ASSESSMENT FORM

McKinley
Drain 56-2
WB

Stantec

Station # 56-2 Project Name CP
 Watercourse Name McKinley Drain Project # 160960709
 Photos - Field Staff KE + JK
 Date July 3 2012 Time 10 pm
 Weather conditions in previous 24 hrs T storm
 GPS Coordinates (Zone) 17 E 414796 N 4770714 Datum NAD83
 Descriptive Location upstream, north of Saylor's

Water Quality

Dissolved Oxygen (mg/L) 10.11 pH 8.38 Conductivity (µS/cm) 778
 Water Temperature (°C) 19.33 Air Temperature (°C) 28
 Time in situ measurements taken 6 pm

Watercourse Dimensions & Morphology

Mean Watercourse Width 2 (m) Maximum Pool Depth 25 (cm)
 Mean Bankfull Width 5 (m) Mean Water Depth 20 (cm)
 % Riffle 100 % Pool _____ % Run _____ % Flat _____
 Evidence of eroding banks, Comments on bank stability veg + stable

Substrate (% cover)

Bedrock _____ Cobble 40 Sand _____ Silt _____ Muck _____
 Boulder _____ Gravel 60 Clay _____ Marl _____ Detritus _____

In-water Cover

Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg
 Overhanging Vegetation Woody Debris Boulder Other _____

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)

Adjacent Land Use nightshade, cattails, grape
Ag

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)

no

Migratory Obstructions (seasonal, permanent)

perm

Note any fish observations

no

Waterbody Notes

Natural Watercourse _____ Trapezoidal Channel Grassed Swale _____ Buried Tile _____
 Surficial Drainage (i.e. furrows) _____ Dugout Pond _____ Dominated by Aquatic Veg _____ Dry _____

Other Habitat Notes, Incidental Wildlife Observations, etc.

- catch basin + field to east

Field Notes Authored by KE

Field Notes QA/QCed by OK

McKinley
Brain 56-2

Fishing Record and Catch Results (passive collection methods) Page 1 of 1



Project Number 160960709
 Project Name: CP.
 Waterbody Name: McKinley Drain
 Field Staff: KE & JK

Station Number 56-2
 Lift / Haul / Pass No. 1
 Date (yyyymmdd): 2012_07-03

Fishing Method (check one) and Gear Specs: Gillnet No. of Panels: _____ Mesh Sizes: _____
 Trap Net _____
 Hoop Net _____
 Minnow Trap _____
 Other (specify) _____

Descriptive Location of Station 850m North of Douglas Line, @ Uxbridge Rd.

UTM Coordinates: Zone 17 Easting 414726 Northing 4770714

SET: Date: July 3 Time: 6:01 pm
 LIFT: Date: July 4/12 Time: 3:50 pm
 Total Netting Hours (approx.) 21.5 hrs.

Station Depth (m): Max: 25 cm Min: _____

Supporting Measurements (recorded at time of net set)

Depth (m)	Temp. (°C)	D.O. (mg/L)	pH	Cond. (µS/cm)
0.25	19.3	10.11	8.38	728

Time 6 pm

Additional Catch Data on Separate Sheet? Y/N
 Detailed Fish Measurements on Separate Sheet? Y/N

Catch Data

Mesh Size	Species	Number	Comments (i.e. age, disease, etc.)
	Brook Stickleback	42 + 95	Adult



Stantec

WIND FARM WATERBODY RAPID ASSESSMENT FORM

McKinley Branch
Brain 57-1
WB

Station # 57-1 Project Name CP
Watercourse Name McKinley Branch Brain Project # 160960709
Photos _____ Field Staff K & J K
Date July 3 2012 Time 6:05 pm
Weather conditions in previous 24 hrs T-storm
GPS Coordinates (Zone) 17 E 414829 N 47715166 Datum NAD83
Descriptive Location 1/2 mile north of Douglas Line

Water Quality
Dissolved Oxygen (mg/L) _____ pH _____ Conductivity (µS/cm) _____
Water Temperature (°C) _____ Air Temperature (°C) _____
Time *in situ* measurements taken _____

Watercourse Dimensions & Morphology
Mean Watercourse Width _____ (m) Maximum Pool Depth _____ (cm)
Mean Bankfull Width _____ (m) Mean Water Depth _____ (cm)
% Riffle _____ % Pool _____ % Run _____ % Flat _____
Evidence of eroding banks, Comments on bank stability _____

Substrate (% cover)
Bedrock _____ Cobble 60 Sand _____ Silt _____ Muck _____
Boulder _____ Gravel 40 Clay _____ Marl _____ Detritus _____

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation cattails Woody Debris Boulder Other _____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
20% dogwood, elm, solidago
Adjacent Land Use As

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings) no
Migratory Obstructions (seasonal, permanent) dry
Note any fish observations no

Waterbody Notes
Natural Watercourse _____ Trapezoidal Channel Grassed Swale _____ Buried Tile _____
Surficial Drainage (i.e. furrows) _____ Dugout Pond _____ Dominated by Aquatic Veg _____ Dry

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by K&J Field Notes QA/QCed by JK

Appendix D:

Stage 1 Archaeological Assessment – Additional Properties and MTCS Confirmation

Ministry of Tourism, Culture and Sport

Culture Programs Unit
Programs and Services Branch
Culture Division
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel.: (416) 314-7691
Email: Ian.Hember@ontario.ca

Ministère du Tourisme, de la Culture et du Sport

Unité des programmes culturels
Direction des programmes et des services
Division de culture
401, rue Bay, bureau 1700
Toronto ON M7A 0A7
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May 26, 2014

Parker S. Dickson (P256)
Stantec Consulting
171 Queens London ON N6A 5J7

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment Suncor Energy Cedar Point Wind Power Project, Additional Right-of-Ways Lots 16, 17, 18, Concessions 10 and 11; Lot 24, Concession 12; Lots 24 and 25, Concessions 13, 14 and 15, Geographic Township of Plympton, now Town of Plympton-Wyoming, Municipality of Lambton Shores, Lambton County, Ontario ", Dated May 20, 2014, Filed with MTCS Toronto Office on May 23, 2014, MTCS Project Information Form Number P256-0153-2014

Dear Mr. Dickson:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18.¹ This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 Standards and Guidelines for Consultant Archaeologists set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the assessment/mitigation of the study area as highlighted purple in Figure 1.0 of the above titled report and recommends the following:

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that although the study area may have exhibited archaeological potential in the past, extensive construction disturbances and land alterations have removed the potential for the identification and recovery of archaeological resources. Thus, in accordance with Section 1.3.2 and Section 7.7.4 Standard 1b of the MTCS' 2022 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the Stage 1 archaeological assessment of the additional road right-of-ways has determined that there are no parts of the study area that have archaeological potential and no further archaeological assessment is recommended.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,
Ian Hember
Archaeology Review Officer

cc. Archaeology Licensing Officer
Chris Scott, Suncor Energy Products Inc.
Mansoor Mahmood, Ministry of Environment

¹In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

**Stage 1 Archaeological
Assessment Suncor Energy
Cedar Point Wind Power
Project, Additional Right-of-
Ways**

Lots 16, 17, 18, Concessions 10
and 11; Lot 24, Concession 12;
Lots 24 and 25, Concessions 13,
14 and 15, Geographic Township
of Plympton, now Town of
Plympton-Wyoming, Municipality
of Lambton Shores, Lambton
County, Ontario



Prepared for:
Suncor Energy Products Inc.
Mr. Chris Scott
207 Douglas Street
Stratford, ON N5A 5P8
Tel: (519) 801-8633
Email: cscott@suncor.com

Prepared by:
Stantec Consulting Ltd.
171 Queens Avenue, 6th Floor
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Licensee: Parker Dickson, M.A.
License Number: P256
PIF Number: P256-0153-2014
FIT Number: F-002175-WIN-130-
601

ORIGINAL REPORT

May 20, 2014

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**STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT,
ADDITIONAL RIGHT-OF-WAYS**

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

Executive Summary

An additional Stage 1 archaeological assessment was conducted by Stantec Consulting Ltd. (Stantec) on behalf of Suncor Energy Products Inc. (Suncor) for additional right-of-ways located within the Suncor Energy Cedar Point Wind Power Project. Golder Associates Ltd. (Golder) previously conducted a Stage 1 assessment as well as a Stage 2 assessment (2012a, 2012b) for the Suncor Energy Cedar Point Wind Power Project. Two additional Stage 2 assessments for additional properties were also conducted by Stantec (2013a, 2013b).

The Stage 1 assessment conducted by Stantec was undertaken in order to meet the requirements for an application for a Renewable Energy Approval, as outlined in Ontario Regulation 359/09 sections 21 and 22 under Part V.0.1 of the *Environmental Protection Act* (Government of Ontario 1990a).

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that although the study area may have exhibited archaeological potential in the past, extensive construction disturbances and land alterations have removed the potential for the identification and recovery of archaeological resources. Thus, in accordance with Section 1.3.2 and Section 7.7.4 Standard 1b of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **the Stage 1 archaeological assessment of the additional road right-of-ways has determined that there are no parts of the study area that have archaeological potential and no further archaeological assessment is recommended.**

The Ministry of Tourism, Culture and Sport is asked to accept this report into the Ontario Public Register of Archaeological Reports.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT,
ADDITIONAL RIGHT-OF-WAYS**

Project Personnel

Licensed Archaeologist:	Parker Dickson, MA (P256)
Project Manager:	Kerrie Skillen, MES
Archaeology Lead:	Tracie Carmichael, BA, B.Ed. (R140)
Licensed Field Director:	Krista Lane, BA, (R382)
Report Writer:	Amanda Laprise, BA (R470)
GIS Specialist:	Dan Harvey, BES (Hons.), CEAM
Technical Review:	Jeffrey Muir, BA (R304)
Senior Review:	Tracie Carmichael, BA, B.Ed. (R140)
Proponent Contacts:	Mr. Chris Scott, P.Eng. Suncor Energy Products Inc. Mr. Mark Kozak, Suncor Energy Products Inc.
Ministry of Tourism, Culture and Sport:	Mr. Robert von Bitter

STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

Project Context
May 20, 2014

1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

An additional Stage 1 archaeological assessment was conducted by Stantec Consulting Ltd. (Stantec) on behalf of Suncor Energy Products Inc. (Suncor) for additional road right-of-ways located within the Suncor Energy Cedar Point Wind Power Project. The Stage 1 assessment conducted by Stantec was undertaken in order to meet the requirements for an application for a Renewable Energy Approval, as outlined in Ontario Regulation 359/09 sections 21 and 22 under Part V.0.1 of the *Environmental Protection Act* (Government of Ontario 1990a).

Approximately 12.8 hectares of road right-of-way were evaluated for the transmission line and collector line associated with the Suncor Energy Cedar Point Wind Power Project. The additional right-of-ways assessed by Stantec are located on the east and west side of Uttoxeter Road between Townsend Line and Douglas Line, Lots 24 and 25, Concessions 13, 14 and 15; on the north and south side of Douglas Line, Lot 24, Concessions 12 and 13; and on the north and south side of Aberarder Line, Lots 16, 17 and 18, Concessions 10 and 11 in the Geographic Township of Plympton, now Town of Plympton-Wyoming, Lambton County, Ontario.

Golder Associates Ltd. (Golder) previously conducted a Stage 1 assessment as well as a Stage 2 assessment (2012a, 2012b) for the Suncor Energy Cedar Point Wind Power Project. Two additional Stage 2 assessments for additional properties were also conducted by Stantec (2013a, 2013b). A more detailed discussion of past investigations is presented in Section 1.3.

The Suncor Energy Cedar Point Wind Energy Project (the "Project") will include 55 wind turbines as well as associated infrastructure including collector cable routes, access roads, construction roads, transmission lines and substations. The additional road right-of-ways will be used for collector lines (Figure 1).

The objectives of the Stage 1 assessment were to compile all available information about the known and potential archaeological heritage resources within the study area and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the provincial standards and guidelines set out in the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 Archaeological Overview/Background Study are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork and current land conditions;
- To evaluate in detail the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property; and



STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

Project Context
May 20, 2014

- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historic and environmental literature pertaining to the study area;
- A review of the land use history, including pertinent historic maps;
- An examination of the Ontario Archaeological Sites Database (ASDB) to determine the presence of known archaeological sites in and around the study area; and
- A property inspection of the study area.

Permission to enter the study area and document archaeological resources was provided by Mr. Chris Scott of Suncor Energy Products Inc.

1.2 HISTORICAL CONTEXT

The Project area is comprised of agricultural fields, homesteads, farms, businesses, small communities, woodlots and several waterways all located in the current Municipality of Lambton Shores, the Town of Plympton-Wyoming, and the Township of Warwick in Lambton County, Ontario (Figure 1). The Municipality of Lambton Shores was formed in 2001 when the Towns of Bosanquet and Forest, and the Villages of Thedford, Arkona, and Grand Bend were amalgamated. This portion of southwestern Ontario has been occupied by First Nations peoples since the retreat of the glaciers approximately 11,000 years ago. For the majority of this time people followed a hunter gatherer lifestyle, moving seasonally between areas of localized resource abundance. Approximately 1,300 years ago, with the arrival in Ontario of corn beans and squash there was a gradual move towards farming and the reliance on domesticated food stuff, resulting in the eventually emergence of permanent villages by the 19th century. The majority of the Project area has been subject to European style agricultural practices for much of the past two centuries, with all of the land available for settlement taken up by Euro-Canadian farmers by the mid-19th century. The additional property assessed is road right-of-way solely in the Town of Plympton-Wyoming. Historical information specifically regarding Lots 16, 17 and 18, Concessions 10 and 11; Lot 24, Concession 12; and Lots 24 and 25, Concessions 13, 14 and 15 can be found in Section 1.2.2 of this report.

1.2.1 Post-contact Aboriginal Resources

The post-contact Aboriginal occupation of Southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York State Iroquois and the subsequent arrival of Algonkian speaking groups from northern Ontario at the end of the 17th century and the beginning of the 18th century (Konrad 1981; Schmalz 1991). By 1690, Algonkian speakers from the north appear to have begun to repopulate Bruce County (Rogers 1978:761). This is the period in which the Mississaugas are known to have moved into southern Ontario and



STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

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the lower Great Lakes watersheds (Konrad 1981). In southwestern Ontario, however, members of the Three Fires Confederacy (Chippewa, Ottawa and Potawatomi) were immigrating from Ohio and Michigan in the late 1700s (Feest and Feest 1978:778-779).

The study area first enters the Euro-Canadian historic record when the Ojibwa and Chippewa First Nations entered into Treaty Number 27 ½ of April 26, 1825,

...being an agreement made at Amherstburg in the Western District of the Province of Upper Canada on the 26th of April, 1825, between James Givens, Esquire, Superintendent of Indian Affairs, on behalf of His Majesty King George the Fourth and the Chiefs and Principal Men of the part of the Chippewa Nation of Indians, inhabiting and claiming the tract of land Wawanosh Township in the County of Huron was named after Way-way-nosh the principal Chief of the Band making this Treaty.

(Morris 1943:26-27)

While it is difficult to exactly delineate treaty boundaries today, Figure 2 provides an approximate outline of the limits of Treaty Number 27 ½.

1.2.2 Historic Euro-Canadian Archaeological Resources and Surveys

In 1827 the Canada Company purchased a large parcel of land, which they called the Huron Tract, for European settlement. Deputy Provincial Surveyor John McDonald surveyed the majority of the land in the early 1800s. The larger Project area falls within this parcel of land in the Townships of Bosanquet and Plympton, as well as the Township of Warwick, all located in Lambton County. The 1880 Historical Atlas map (Belden & Co. 1880) (Figure 3 to Figure 5) shows the increase in settlement by illustrating structures and landowner names through each of these townships.

The additional right-of ways assessed by Stantec are located on the east and west side of Uttoxeter Road between Townsend Line and Douglas Line, Lots 24 and 25, Concessions 13, 14 and 15, on the north and south side of Douglas Line, Lot 24, Concessions 12 and 13 as well as the north and south side of Aberarder Line, Lots 16, 17 and 18, Concessions 10 and 11 in the Geographic Township of Plympton-Wyoming, Lambton County, Ontario (Figure 4).

Plympton Township was originally surveyed from 1829 to 1832 by Charles Rankin and Peter Carroll (Elford 1982) using the 2,400 acre section system where lots were divided into 200 acres. A large portion of the township, once surveyed, was granted to the daughters and sons of the United Empire Loyalists (Elford 1982). The first large influx of settlers came with Lord Egremont in 1833 where they settled along what is now known as Egremont Road (Lauriston 1949). The pioneers, once settled, took to clearing the land. The easiest way for them to make money was to cut down the trees, burn them and make potash. It wasn't until the railways were built through the township that trees were sold for their timber. This was when the sawmill industry started booming. By the 1850s the pioneers started building school houses and churches throughout the



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township. Many of the early settlers were of Scottish or Irish decent with a large influx of Dutch settlers after the Second World War. Plympton Township was largely an agricultural township with some dairy and wool production. Farmers would band together for mutual benefit and in 1890 the Farmer's Association of Plympton was formed. Forest and Wyoming are amongst the other 12 named centres located within the township; they include Errol, Camlachie, Hillsboro, Omegah, Uttoxeter, Aberarder, Mandaumin, Wanstead, Oban, Kertch, Reece's Corners and Matlock (Elford 1982). The settlement of Aberarder was located on Lot 18 Concession 10 (Figure 4). In 1863 it is said that Alexander Hamilton laid out Aberarder settlement when the Grant Truck Railway line went through it. It was in 1863 that the first post office opened here by Mr. McBean, where it stayed until 1914. In Aberarder there was a carriage-making shop, a library, a church and Sunday school as well as a local store. Due to modernization and large farms this community became obsolete save for the church that closed in 1966 and the store in 1977. The railway has not been used in years and all that remains is a consolidated school (Elford 1982).

The 1880 *Illustrated Historic Atlas of Lambton County* (Belden & Co. 1880) map for Plympton Township (Figure 4) identifies landowners for four of the 13 lots within the Stage 1 assessment area, as listed in Table 1. A total two homesteads, two schoolhouses and a wagon shop are also visible on the map, all within the boundary of the Study Area. The road system as depicted on the map still exists today.

Table 1 Landowner Information from the 1880 Illustrated Historic Atlas of the County of Lambton

Lot	Concession	Owner	Comment
24	12	no owner	Grand Trunk Railway runs through the lot. No structures illustrated.
24	13	no owner	No structures illustrated.
24	14	L. Linton	One structure is illustrated in the north west of the lot.
24	15	no owner	No structures illustrated.
25	13	Ronald McDonnell	Grand Trunk Railway runs through the lot. One structure illustrated in the southwest of the lot.
25	14	W. Gainmon	School house illustrated in the northwest corner of the lot.
25	15	D. Livingston	No structures illustrated.
16	10	no owner	Grand Trunk Railway runs through the lot.
16	11	no owner	No structures illustrated.
17	10	no owner	Grand Trunk Railway runs through the lot.
17	11	no owner	No structures illustrated.
18	10	no owner	Grand Trunk Railway runs through the lot. Wagon shop illustrated in northeast corner.
18	11	no owner	Grand Trunk Railway runs through the lot. School house illustrated in southern portion of property.



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Historical county atlases were produced primarily to identify factories, offices, residences and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, all structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 100 years, having been settled by Euro-Canadian farmers by the mid-19th century. Much of the region today continues to be used for agricultural purposes. Considering the above, the historic Euro-Canadian archaeological potential of the study area was judged to be moderate to high.

1.2.3 Recent Reports

Other than the existing historic documentation, the larger Project area has been documented in recent archaeological assessments (Table 2).

Table 2 Recent Reports

Year	Title	Author	PIF Number(s)
2012a	<i>Stage 1 Archaeological Assessment, Suncor Cedar Point Wind Farm, Municipality of Lambton Shores Town of Plympton-Wyoming and Township of Warwick, Lambton County, Ontario</i>	Golder	P084-196-2010 and P218-210-2012
2012b	<i>Stage 2 Archaeological Assessment, Suncor Cedar Point Wind Power Project, Various Lots and Concessions Municipality of Lambton Shores, Town of Plympton-Wyoming and Township of Warwick, Lambton County, Ontario</i>	Golder	P084-225-2010 and P218-184-2011
2013a	<i>Stage 2 Archaeological Assessment, Suncor Energy Cedar Point Wind Power Project Various Lots and Concessions Municipality of Lambton Shores Town of Plympton-Wyoming and Township of Warwick Lambton County, Ontario</i>	Stantec	P001-680-2012
2013b	Stage 2 Archaeological Assessment Suncor Energy Cedar Point Wind Power Project, Additional Property, Geographic Township of Bosanquet Municipality of Lambton Shores Lambton County, Ontario	Stantec	P001-747-2013

Figure 6 illustrates the areas previously assessed by Golder (2012b) and Stantec (2013a, 2013b).



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1.3 ARCHAEOLOGICAL CONTEXT

The area assessed during the Stage 1 archaeological assessment encompasses approximately 12.8 hectares and consisted of road right-of-ways located on the east and west side of Uttoxeter Road between Townsend Line and Douglas Line, Lots 24 and 25, Concessions 13, 14 and 15; on the north and south side of Douglas Line, Lot 24, Concessions 12 and 13; and on the north and south side of Aberarder Line, Lots 16, 17 and 18, Concessions 10 and 11 in the Geographic Township of Plympton, now Town of Plympton-Wyoming, Lambton County, Ontario.

1.3.1 The Natural Environment

The additional Stage 1 assessment area is situated within the St. Clair Clay Plain (Chapman and Putnam 1984:146-147).

Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l., except for the moraine at Ridgetown and Blenheim which rises 50 to 500 feet higher....Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.

(Chapman and Putnam 1984:147)

The additional property assessed by Stantec is located mostly on the Brookston clay series soil and Perth clay series and is utilized as road right-of-way. Although imperfectly drained, the Brookston and Perth series soil still yields high crops (Matthews and Richards 1957:44-47). Therefore, this parcel would also have been suitable for pre-contact Aboriginal agriculture. Hickory Creek runs east west through Lots 24 and 25, Concession 15, eventually flowing into Lake Huron. Lake Huron is approximately five kilometres from the corner of Aberarder Line and Oil Heritage Road and four kilometres from the corner of Townsend Line and Uttoxeter Road.

1.3.2 Pre-contact Aboriginal Resources

It has been demonstrated that pre-contact Aboriginal people began occupying southwestern Ontario as the glaciers receded from the land, as early as 9,000 B.C. Table 3 provides a general outline of the cultural chronology of Lambton County, based on Ellis and Ferris (1990).



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Table 3 Cultural Chronology for Lambton County

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9000-8400 B.C.	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400-8000 B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000-6000 B.C.	slow population growth
Middle Archaic	Brewerton-like Points	6000-2500 B.C.	environment similar to present
Late Archaic	Narrow Point	2000-1800 B.C.	increasing site size
	Broad Point	1800-1500 B.C.	large chipped lithic tools
	Small Point	1500-1100 B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1100-950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950-400 B.C.	introduction of pottery
Middle Woodland	Couture Corded Pottery	400 B.C.-A.D. 500	increased sedentism
	Riviere au Vase Phase	A.D. 500-800	seasonal hunting and gathering
Late Woodland	Younge Phase	A.D. 800-1200	incipient agriculture
	Springwells Phase	A.D. 1200-1400	agricultural villages
	Wolf Phase	A.D. 1400-1550	earthenworked villages, warfare
Contact Aboriginal	Various Algonkian and Iroquoian Groups	A.D. 1600-1875	early written records and treaties
Historic	French/Euro-Canadian	A.D. 1749-present	European settlement

1.3.3 Previously Known Archaeological Sites and Surveys

A Stage 1 archaeological assessment was previously conducted by Golder (2012a) and resulted in the determination that the potential for pre-contact Aboriginal and Euro-Canadian sites was deemed to be moderate to high and therefore a Stage 2 assessment was recommended for any areas to be impacted by construction.

A Stage 2 archaeological assessment was conducted by Golder (2012b) and focused upon the proposed wind turbine layout, including turbine sites, collector cable routes, access roads, construction roads, transmission lines, laydown areas and substations. A total of approximately 953.7 hectares was subject to Stage 2 archaeological assessment, the majority of which was assessed using the pedestrian survey method at an interval of five metres. Small areas of ditches and tree lines that could not be assessed using the pedestrian survey method were assessed using the test pit method at an interval of five metres (Golder 2012b). Seventy-two locations were found during Golder's Stage 2 archaeological assessment. Fifteen of those locations were recommended for Stage 3 assessment [Location 9 (AgHm-9), Location 10 (AgHm-10), Location



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18 (AgHm-12), Location 19 (AhHI-75), Location 30 (AgHm-13), Location 31 (AgHm-14), Location 35 (AgHm-15), Location 36 (AgHm-16), Location 38 (AgHm-17), Location 44 (AgHI-7), Location 47 (AgHI-8), Location 50 (AgHI-10), Location 56 (AgHI-10), Location 62 (AgHI-11) and Location 65 (AgHI-12)], and the remaining 57 sites were not recommended for further work (Golder 2012b). Table 4 summarizes the sites found by Golder within the Suncor Energy Cedar Point Wind Energy Project (Golder 2012b).

Table 4 Archaeological Sites Found in the Initial Stage 2 Assessment by Golder (2012b)

Site	Borden #	Cultural Affiliation	Stage 3 Recommended
1	n/a	Pre-contact Aboriginal	no
2	n/a	Pre-contact Aboriginal	no
3	n/a	Pre-contact Aboriginal	no
4	n/a	Pre-contact Aboriginal	no
5	n/a	Pre-contact Aboriginal	no
6	n/a	Pre-contact Aboriginal	no
7	n/a	Pre-contact Aboriginal	no
8	n/a	Pre-contact Aboriginal	no
9	AgHm-9	Historic Euro-Canadian	yes
10	AgHm-10	Historic Euro-Canadian	yes
11	n/a	Pre-contact Aboriginal	no
12	n/a	Pre-contact Aboriginal	no
13	n/a	Pre-contact Aboriginal	no
14	n/a	Pre-contact Aboriginal	no
15	AgHm-11	Historic Euro-Canadian	no
16	n/a	Pre-contact Aboriginal	no
17	n/a	Pre-contact Aboriginal	no
18	AgHm-12	Pre-contact Aboriginal	yes
19	AhHI-75	Pre-contact Aboriginal	yes
20	n/a	Pre-contact Aboriginal	no
21	n/a	Pre-contact Aboriginal	no
22	n/a	Pre-contact Aboriginal	no
23	n/a	Pre-contact Aboriginal	no
24	n/a	Pre-contact Aboriginal	no
25	n/a	Pre-contact Aboriginal	no
26	n/a	Pre-contact Aboriginal	no
27	n/a	Pre-contact Aboriginal	no



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Site	Borden #	Cultural Affiliation	Stage 3 Recommended
28	n/a	Pre-contact Aboriginal	no
29	n/a	Pre-contact Aboriginal	no
30	AgHm-13	Pre-contact Aboriginal	yes
31	AgHm-14	Pre-contact Aboriginal	yes
32	n/a	Pre-contact Aboriginal	no
33	n/a	Pre-contact Aboriginal	no
34	n/a	Pre-contact Aboriginal	no
35	AgHm-15	Pre-contact Aboriginal	yes
36	AgHm-16	Historic Euro-Canadian	yes
37	n/a	Pre-contact Aboriginal	no
38	AgHm-17	Historic Euro-Canadian	yes
39	n/a	Pre-contact Aboriginal	no
40	n/a	Pre-contact Aboriginal	no
41	n/a	Pre-contact Aboriginal	no
42	n/a	Pre-contact Aboriginal	no
43	n/a	Pre-contact Aboriginal	no
44	AgHI-7	Pre-contact Aboriginal	yes
45	n/a	Pre-contact Aboriginal	no
46	n/a	Pre-contact Aboriginal	no
47	AgHI-9	Pre-contact Aboriginal	yes
48	n/a	Pre-contact Aboriginal	no
49	n/a	Pre-contact Aboriginal	no
50	Aghl-9	Pre-contact Aboriginal	yes
51	n/a	Historic Euro-Canadian	no
52	n/a	Pre-contact Aboriginal	no
53	n/a	Pre-contact Aboriginal	no
54	n/a	Pre-contact Aboriginal	no
55	n/a	Pre-contact Aboriginal	no
56	AgHI-10	Historic Euro-Canadian	yes
57	n/a	Pre-contact Aboriginal	no
58	n/a	Pre-contact Aboriginal	no
59	n/a	Pre-contact Aboriginal	no
60	n/a	Pre-contact Aboriginal	no
61	n/a	Pre-contact Aboriginal	no
62	AgHI-11	Historic Euro-Canadian	yes



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Site	Borden #	Cultural Affiliation	Stage 3 Recommended
63	n/a	Pre-contact Aboriginal	no
64	n/a	Pre-contact Aboriginal	no
65	AgHI-12	Pre-contact Aboriginal	yes
66	n/a	Pre-contact Aboriginal	no
67	n/a	Pre-contact Aboriginal	no
68	n/a	Pre-contact Aboriginal	no
69	n/a	Pre-contact Aboriginal	no
70	n/a	Pre-contact Aboriginal	no
71	n/a	Pre-contact Aboriginal	no
72	n/a	Pre-contact Aboriginal	no

An additional Stage 2 assessment was conducted by Stantec (2013a), which focused on all proposed turbine pads, access routes, transmission routes and cable routes. A total of approximately 249 hectares were subject to Stage 2 archaeological assessment, the majority of which was assessed using the pedestrian survey method (80%), and the remaining either assessed using test pit survey (10%) or not assessed due to being previously disturbed, being a steep slope, or being a creek (10%). Seven locations were found during Stantec's Stage 2 archaeological assessment. Only Location 7 (AgHI-48) was recommended for Stage 3 assessment; the remaining six sites were not recommended for further work. Table 5 summarizes the sites found by Stantec within the Suncor Energy Cedar Point Wind Energy Project (Stantec 2013a).

Table 5 Archaeological Sites Found in the Additional Stage 2 Assessment by Stantec (2013a)

Site	Borden #	Cultural Affiliation	Stage 3 Recommended
1	AgHI-47	Pre-contact Aboriginal	no
2	n/a	Pre-contact Aboriginal	no
3	n/a	Pre-contact Aboriginal	no
4	n/a	Pre-contact Aboriginal	no
5	n/a	Post-contact Aboriginal	no
6	n/a	Pre-contact Aboriginal	no
7	AgHI-48	Historic Euro-Canadian	yes

An additional Stage 2 assessment was conducted by Stantec (2013b), which focused on one property for the use of overhead and underground transmission lines. A total of approximately



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3.1 hectares were subject to Stage 2 assessment using the pedestrian survey method. No archaeological locations were found.

There are no registered archaeological sites within one kilometre of the additional study area (Robert von Bitter, personal communication, June 17, 2013; Government of Ontario, n.d), and to the best of our knowledge the only additional archaeological work conducted within 50 metres of the additional study area is related to the Suncor Energy Cedar Point Wind Power Project and is discussed in the reports entitled *Stage 2 Archaeological Assessment, Suncor Cedar Point Wind Power Project, Various Lots and Concessions Municipality of Lambton Shores, Town of Plympton-Wyoming and Township of Warwick, Lambton County, Ontario* (Golder 2012b), submitted under PIF P084-225-2010 and P218-184-2011 and *Stage 2 Archaeological Assessment, Suncor Energy Cedar Point Wind Power Project Various Lots and Concessions Municipality of Lambton Shores Town of Plympton-Wyoming and Township of Warwick Lambton County, Ontario* (Stantec 2013), submitted under PIF P001-680-2012.

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Field Methods
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2.0 FIELD METHODS

The Stage 1 archaeological assessment compiled the available information concerning any known and/or potential archaeological heritage resources within the study area. A property inspection was conducted under archaeological consulting license P256 issued to Parker Dickson, MA, of Stantec by the MTCS. The property inspection was completed on May 20, 2014. In accordance with Section 1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the property inspection involved checking of the entire Study Area to identify the presence or absence of any features of archaeological potential (Figure 7). During the property inspection the weather was overcast, rainy and cool, and visibility of land features was excellent. At no time was field, lighting, or weather conditions detrimental to the identification of features of archaeological potential.

The study area comprises approximately 12.8 hectares of land that consists of previously disturbed road right-of-ways located on the east and west side of Uttoxeter Road between Townsend Line and Douglas Line, Lots 24 and 25, Concessions 13, 14 and 15; on the north and south side of Douglas Line, Lot 24, Concessions 12 and 13; and on the north and south side of Aberarder Line, Lots 16, 17 and 18, Concessions 10 and 11 in the Geographic Township of Plympton, now Town of Plympton-Wyoming, Lambton County, Ontario.

The photography from the property inspection conducted on May 20, 2014 is presented in Section 7.1 and confirm that the requirements for a Stage 1 property inspection were met, as per Section 1.2 and Section 7.7.2 Standard 1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

Together, the photos demonstrate that the entire study area has been previously disturbed, which has damaged the integrity of any archaeological resources. All portions of the study area examined in this report have been disturbed by either drainage construction, such as ditching, drain installation, or culverts which would have involved digging out the topsoil and replacing it with fill in some areas; and roadway construction, such as the construction of gravel shoulders which would have involved grading below topsoil.

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Analysis and Conclusions
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3.0 ANALYSIS AND CONCLUSIONS

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by MTCS (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography and the general topographic variability of the area.

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site location in Ontario. Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect sites locations and types to varying degrees. The MTCS categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks;
- Secondary water sources: intermittent streams and creeks, springs, marshes and swamps;
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

Hickory Creek runs east west through Lots 24 and 25, Concession 15, eventually flowing into Lake Huron. Lake Huron is approximately five kilometres from the corner of Aberarder Line and Oil Heritage Road and four kilometres from the corner of Townsend Line and Uttoxeter Road. It has also been noted that the soils within the region are suitable for pre-contact Aboriginal agriculture.

For historic Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early

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transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* or property that local histories or informants have identified with possible historical events. The *Illustrated Historical Atlas of the County of Lambton, Ont.* (Belden & Co. 1880) demonstrates that the study area and its environs were densely occupied by Euro-Canadian farmers by the later 19th century, including the Aberarder Post Office. Moreover, the study area is in close proximity to early transportation routes, namely the mid-19th century Great Trunk Railway and much of the established road system and agricultural settlement from that time is still visible today.

An examination of the ASDB has shown that there are no registered archaeological sites within one kilometre of the additional study area (Robert von Bitter, personal communication, June 17, 2013; Government of Ontario, n.d), and to the best of our knowledge the only additional archaeological work conducted within 50 metres of the additional study area is related to the Suncor Energy Cedar Point Wind Power Project and is discussed in the reports entitled *Stage 2 Archaeological Assessment, Suncor Cedar Point Wind Power Project, Various Lots and Concessions Municipality of Lambton Shores, Town of Plympton-Wyoming and Township of Warwick, Lambton County, Ontario* (Golder 2012b), submitted under PIF P084-225-2010 and P218-184-2011 and *Stage 2 Archaeological Assessment, Suncor Energy Cedar Point Wind Power Project Various Lots and Concessions Municipality of Lambton Shores Town of Plympton-Wyoming and Township of Warwick Lambton County, Ontario* (Stantec 2013), submitted under PIF P001-680-2012 .

When the above listed criteria are applied to the study area, the archaeological potential for pre-contact Aboriginal, post-contact Aboriginal, and historic Euro-Canadian sites is deemed to be moderate to high. However, extensive land disturbance can eradicate archaeological potential (Wilson and Horne 1995). The Stage 1 property inspection revealed that the entire study area has been subject to extensive land disturbances. As detailed in Section 2.0 modern disturbances include the construction of roads and drainage features.

The previous Stage 2 assessments conducted by Golder (2012b) and Stantec (2013b) have both determined the municipal right-of-ways within the Suncor Energy Cedar Point Wind Power Project assessed at those times were previously disturbed due to road construction.

Thus, based on previous assessments and a property inspection, road construction and drainage features have severely damaged the integrity of archaeological resources within the study area and have removed archaeological potential. As a result, the study area contains no areas of archaeological potential and retains no cultural heritage value or interest.

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Recommendations
May 20, 2014

4.0 RECOMMENDATIONS

An additional Stage 1 archaeological assessment was conducted by Stantec Consulting Ltd. (Stantec) on behalf of Suncor Energy Products Inc. (Suncor) for additional right-of-ways located within the Suncor Energy Cedar Point Wind Power Project.

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that although the study area may have exhibited archaeological potential in the past, extensive construction disturbances and land alterations have removed the potential for the identification and recovery of archaeological resources. Thus, in accordance with Section 1.3.2 and Section 7.7.4 Standard 1b of the MTCS' 2022 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **the Stage 1 archaeological assessment of the additional road right-of-ways has determined that there are no parts of the study area that have archaeological potential and no further archaeological assessment is recommended.**

The Ministry of Tourism, Culture and Sport is asked to review the results presented and to accept this report into the Ontario Public Register of Archaeological Reports.

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Advice on Compliance with Legislation
May 20, 2014

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ontario Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ontario Ministry of Consumer Services.

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Bibliography and Sources
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

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May 20, 2014

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

Images
May 20, 2014

7.0 IMAGES

7.1 PHOTOS

Photo 1 Southwest Corner of Townsend Line and Uttoxeter Road



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT,
ADDITIONAL RIGHT-OF-WAYS**

Images
May 20, 2014

Photo 2 Sewer in Northeast Corner of Uttoxeter Road and Hubbard Line



Photo 3 Southeast Corner of Uttoxeter Road and Douglas Line



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT,
ADDITIONAL RIGHT-OF-WAYS**

Images
May 20, 2014

Photo 4 Southeast Corner of Aberarder Line and Hillsboro Road



Photo 5 North side of Aberarder Road



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT,
ADDITIONAL RIGHT-OF-WAYS**

Images
May 20, 2014

Photo 6 Southeast Corner of Aberarder Line and Oil Heritage Road



STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT, ADDITIONAL RIGHT-OF-WAYS

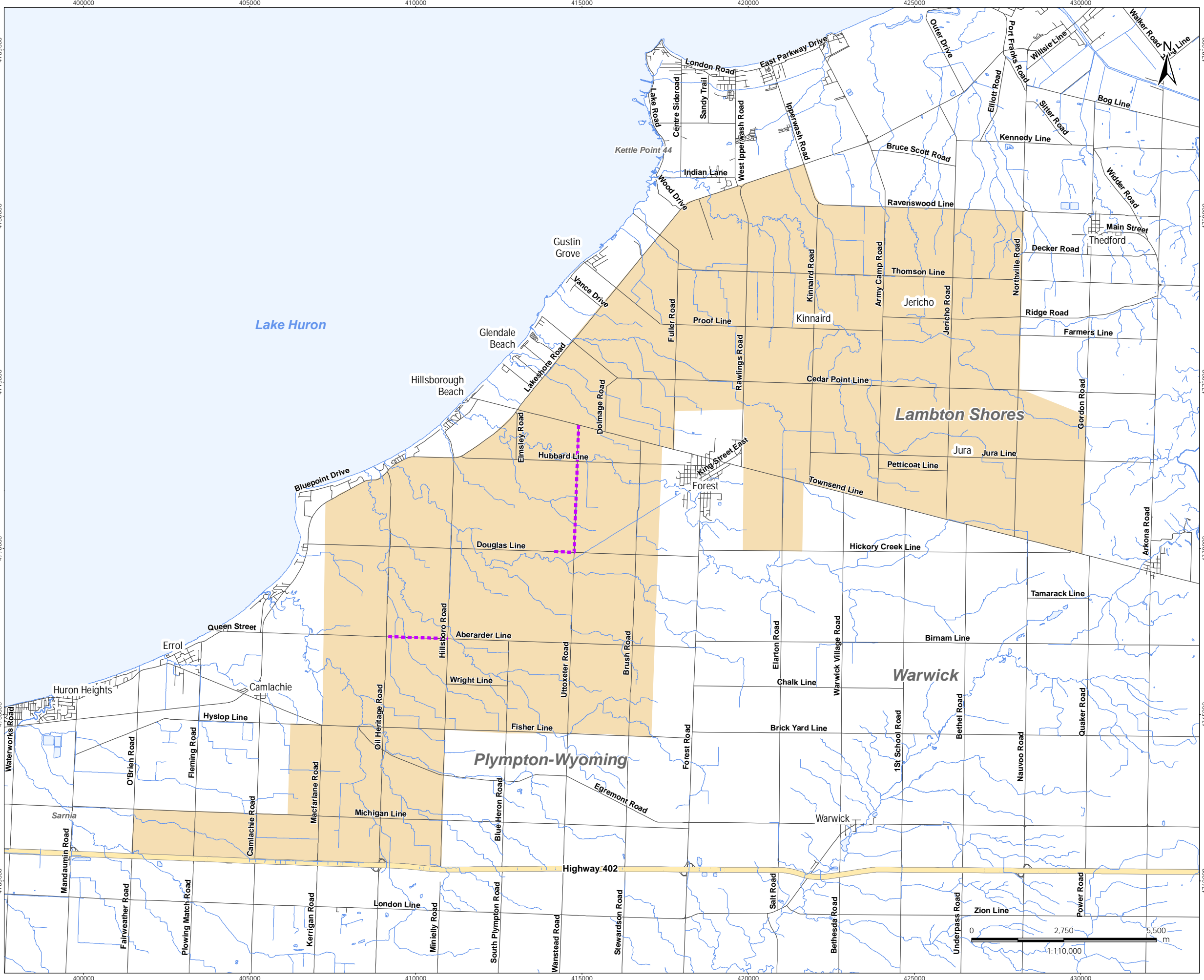
Maps
May 20, 2014

8.0 MAPS

All maps will follow on succeeding pages.



- Legend**
- Project Boundary
 - New- Unassessed Infrastructure
 - Collector Line
 - Existing Features**
 - Expressway / Highway
 - Road
 - Watercourse
 - Waterbody

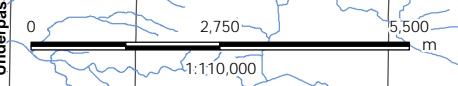


- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Client/Project
 Suncor Energy
 Cedar Point Wind Power Project

Figure No.
 1.0

Title
 Project Location



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 Revised: 2014-05-20 By: dhanvey

Legend

- ★ Study Area
- ▭ Municipal Boundary - Upper Tier
- ▭ Municipal Boundary - Lower or Single Tier
- Watercourse
- Waterbody

- A Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- B Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1 Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2 Crawford's Purchases, 1784, 1787 And 1788 (Mississauga)
- A2 John Collins' Purchase, 1785 (Chippewa)
- C Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
- D Treaty No. 3, December 2nd, 1792 (Mississauga)
- E Haldimand Tract: from the Crown to the Mohawk, 1793
- F Tyendinaga: from the Crown to the Mohawk, 1793
- G Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th, 1795
- H Treaty No. 5, May 22nd, 1798 (Chippewa)
- I Treaty No. 6, September 7th, 1796 (Chippewa)
- J Treaty No. 7, September 7th, 1796 (Chippewa)
- L Treaty No. 13, August 1st, 1805 (Mississauga)
- M Treaty No. 13A, August 2nd, 1805 (Mississauga)
- N Treaty No. 16, November 18th, 1815 (Chippewa)
- O Treaty No. 18, October 17th, 1818 (Chippewa)
- P Treaty No. 19, October 28th 1818 (Chippewa)
- Q Treaty No. 20, November 5th, 1818 (Chippewa)
- R Treaty No. 21, March 9th, 1819 (Chippewa)
- S Treaty No. 27, May 31st, 1819 (Mississauga)
- T Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
- U Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
- V Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
- W Treaty No. 45½, August 9th, 1836 (Saugeen)
- X Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Z Treaty No. 61, September 9th, 1850 (Robinson Treaty: Ojibwa)
- AA Treaty No. 72, October 30th, 1854 (Chippewa)
- AB Treaty No. 82, February 9th, 1857 (Chippewa)
- AF Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- AG Williams Treaty, October 31st, 1923 (Chippewa)

Notes

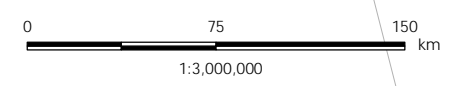
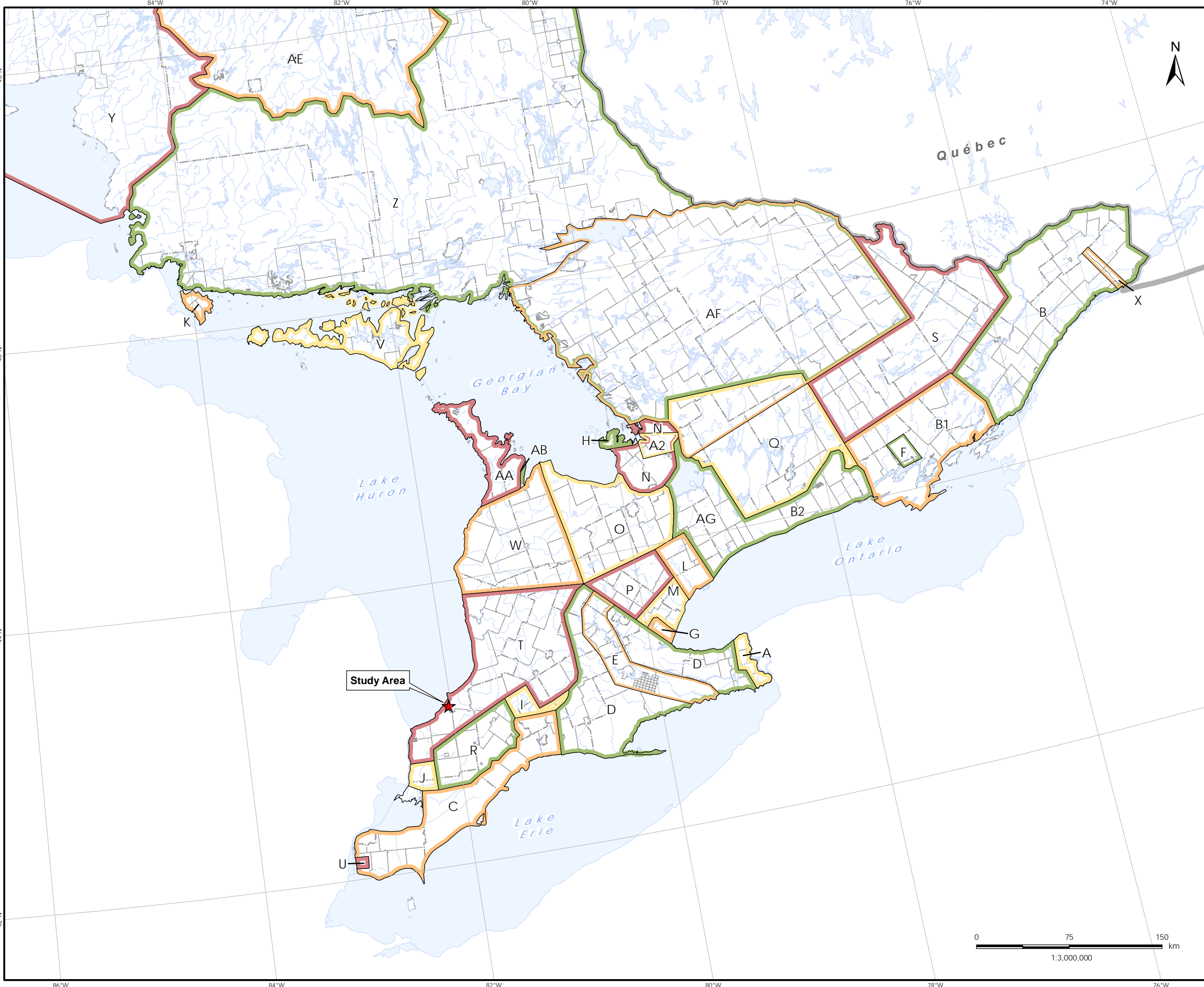
1. Coordinate System: NAD 1983 Statistics Canada Lambert
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.

Client/Project
 Suncor Energy
 Adelaide Wind Power Project

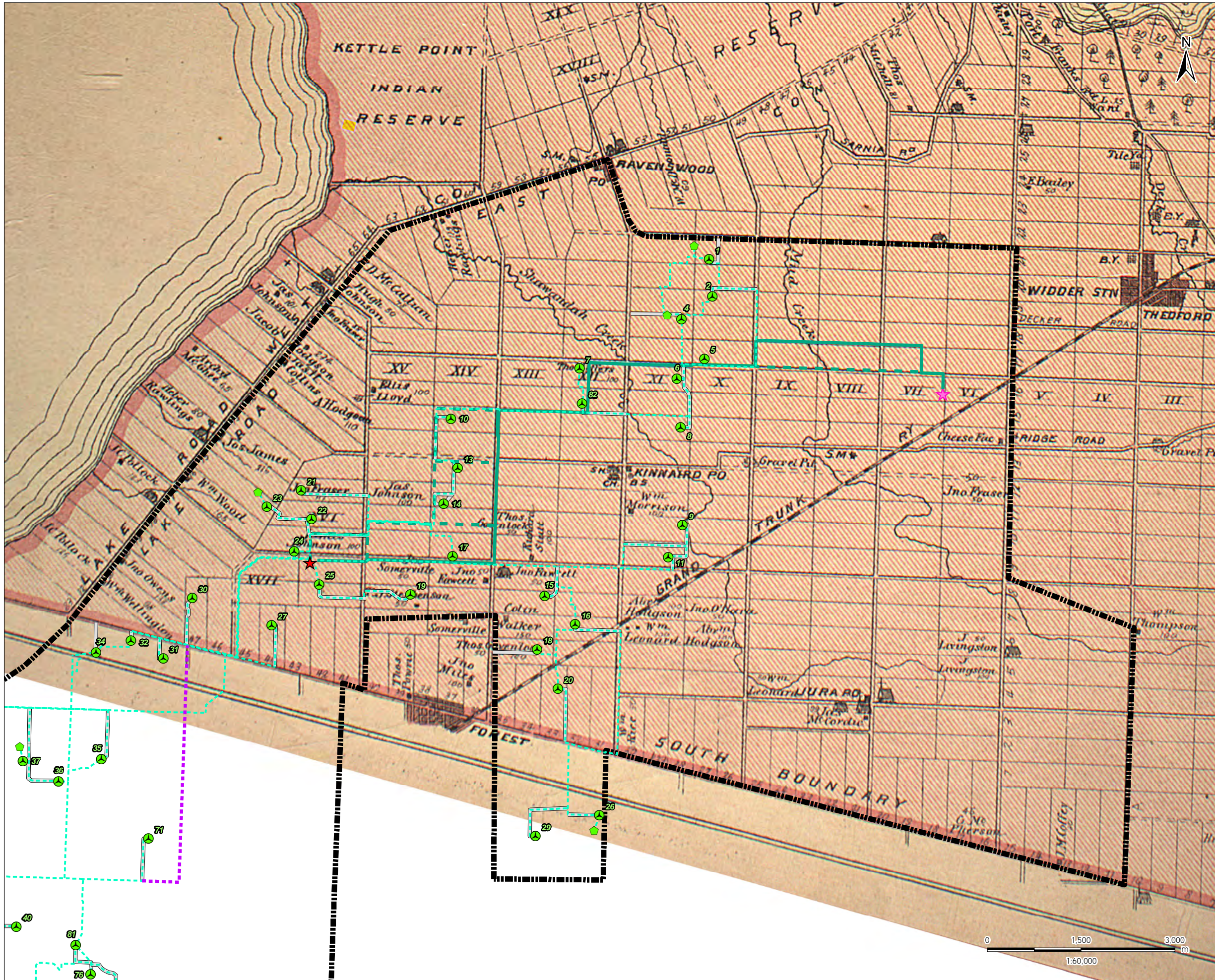
Figure No.
 2.0

Title
 Treaties and Purchases
 (Adapted from Morris 1943)

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 Revised: 2014-05-20 By: dhanvey



- Legend
- Study Area
 - New- Unassessed Infrastructure**
 - Collector Line
 - Previously Assessed Infrastructure**
 - Turbine
 - MET Tower
 - Substation
 - Access Road
 - Collector Line
 - Transmission Line
 - Transmission Line Alternate Route
 - Other Infrastructure**
 - Substation- NextEra Jericho



Notes

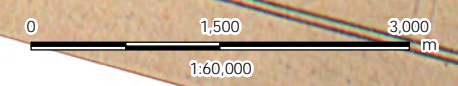
- Historic Map Source: Belden, H. and Company. 1880. *Illustrated Historical Atlas of the County of Lambton*. 1973 reprint. Sarnia: Edward Phelps.

Client/Project

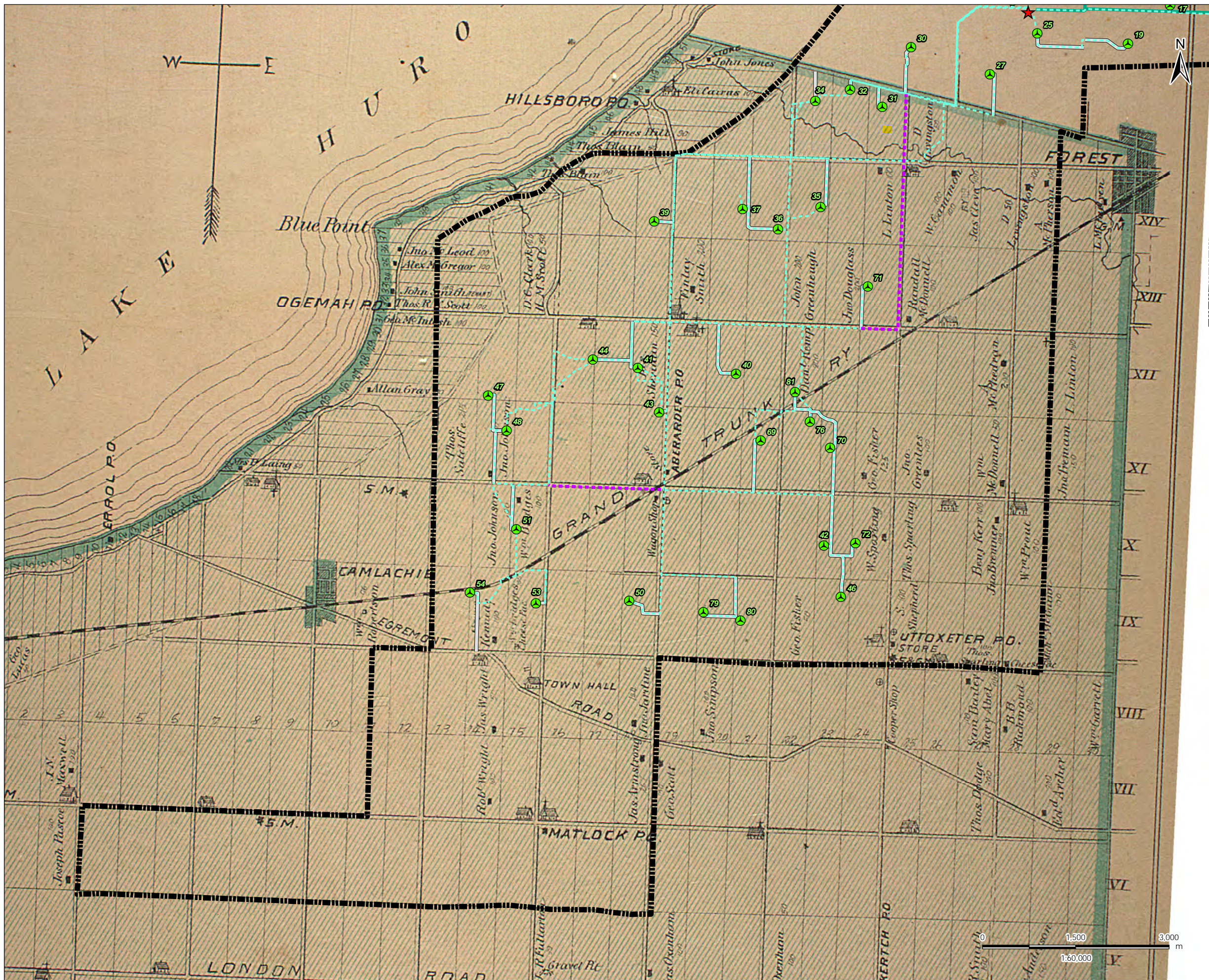
Suncor Energy
Cedar Point Wind Power Project

Figure No.
3.0

Title
A Portion of the 1880 Map of
Bosanquet Township



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 Revised: 2014-05-20 By: dhanvey



- Legend**
- Study Area
 - New- Unassessed Infrastructure
 - Collector Line
 - Previously Assessed Infrastructure
 - Turbine
 - Substation
 - Access Road
 - Collector Line
 - Transmission Line
 - Transmission Line Alternate Route
 - Other Infrastructure
 - Substation- NextEra Jericho



- Notes**
1. Historic Map Source: Belden, H. and Company, 1880. *Illustrated Historical Atlas of the County of Lambton*. 1973 reprint. Sarnia: Edward Phelps.

Client/Project
 Suncor Energy
 Cedar Point Wind Power Project

Figure No.
 4.0

Title
 A Portion of the 1880
 Map of Plympton

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 Revised: 2014-05-20 By: dhanvey

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 Revised: 2014-05-20 By: dhanvey



- Legend
- Study Area
 - New- Unassessed Infrastructure
 - Collector Line
 - Previously Assessed Infrastructure
 - Turbine
 - Substation
 - Access Road
 - Collector Line
 - Transmission Line
 - Transmission Line Alternate Route
 - Other Infrastructure
 - Substation- NextEra Jericho



Notes
 1. Historic Map Source: Belden, H. and Company. 1880. *Illustrated Historical Atlas of the County of Lambton*. 1973 reprint. Sarnia: Edward Phelps.

Client/Project

Suncor Energy
 Cedar Point Wind Power Project

Figure No.
 5.0

Title
 A Portion of the 1880 Map of Warwick Township

May 2014
 160960709

- Legend**
- Project Boundary
 - New- Unassessed Infrastructure
 - Collector Line
 - Previously Assessed Infrastructure
 - Turbine
 - Substation
 - Access Road
 - Collector Line
 - Transmission Line
 - Transmission Line Alternate Route
 - Other Infrastructure**
 - Substation- NextEra Jericho
 - Existing Features**
 - Expressway / Highway
 - Road
 - Wooded Area
 - Watercourse
 - Waterbody
 - Municipal Boundary
 - Surveyed Areas**
 - Golder 2012b
 - Stantec 2013a
 - Stantec 2013b



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

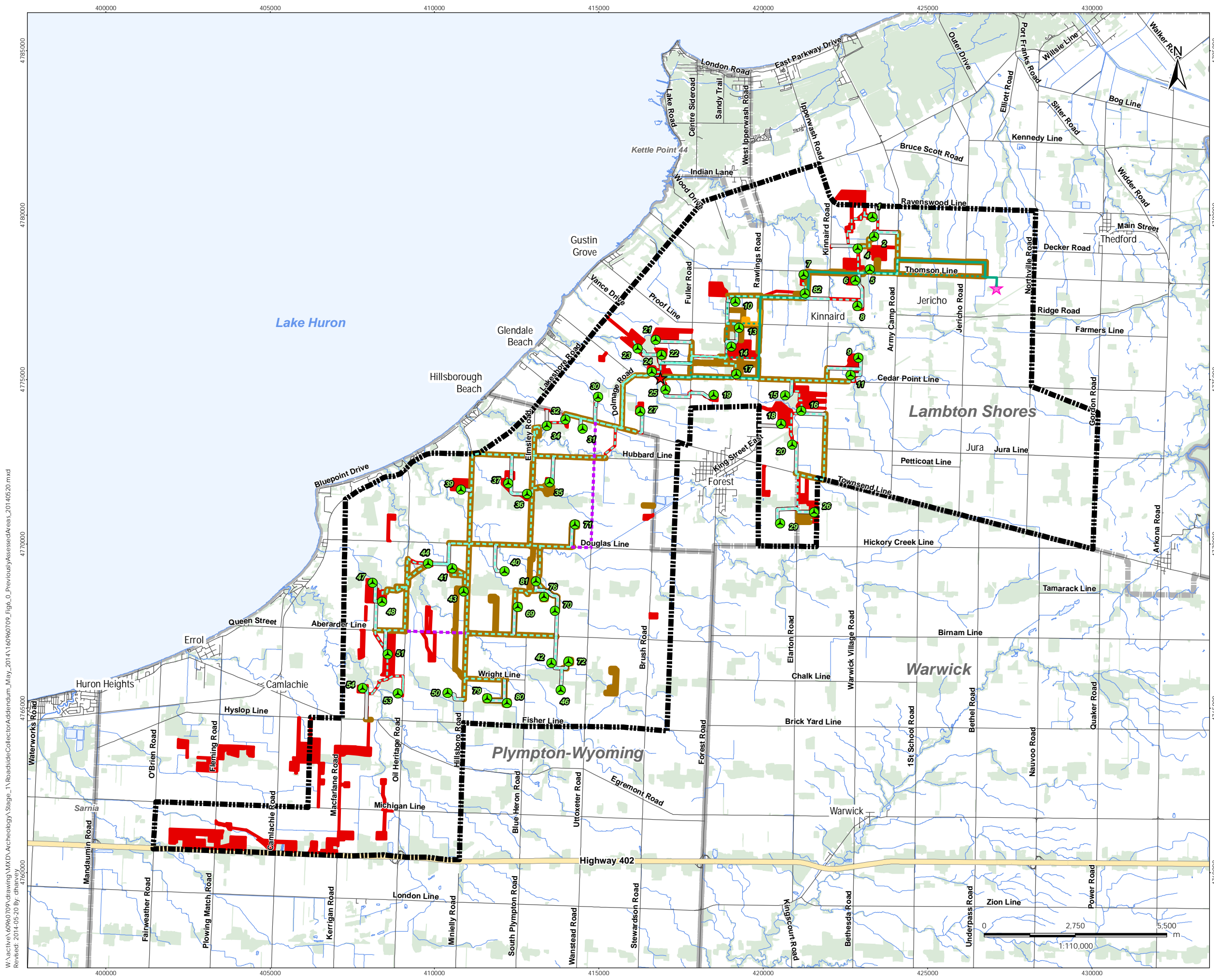
Client/Project

Suncor Energy
Cedar Point Wind Power Project

Figure No.
6.0

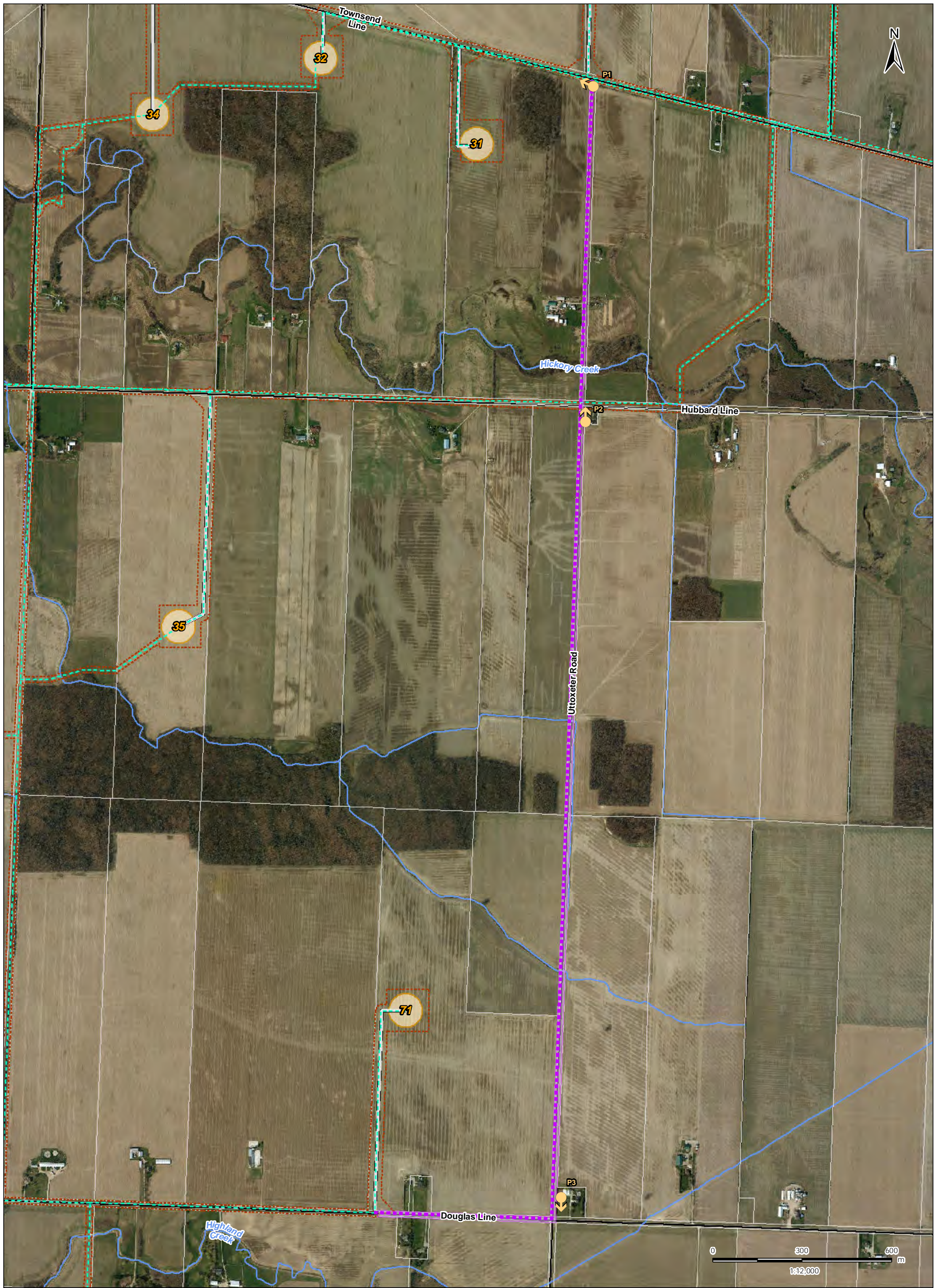
Title

Previously Assessed Areas



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 Revised: 2014-05-20 By: dhanvey

May 2014
160960709



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Legend	
New - Unassessed Infrastructure	--- Collector Line
--- Collector Line	--- Previously Assessed Constructible Area
Previously Assessed Infrastructure	Existing Features
● Proposed Turbine Location	— Road
— Access Road	— Watercourse
	□ Property Boundary
	📍 Photo Location

Client/Project
 Suncor Energy
 Cedar Point Wind Power Project

Figure No.
7.1

Title
Stage 1 Property Inspection Results – Proposed Collector Line: T71 to Townsend Line along Douglas Line and Uttoxeter Road



Legend

New- Unassessed Infrastructure

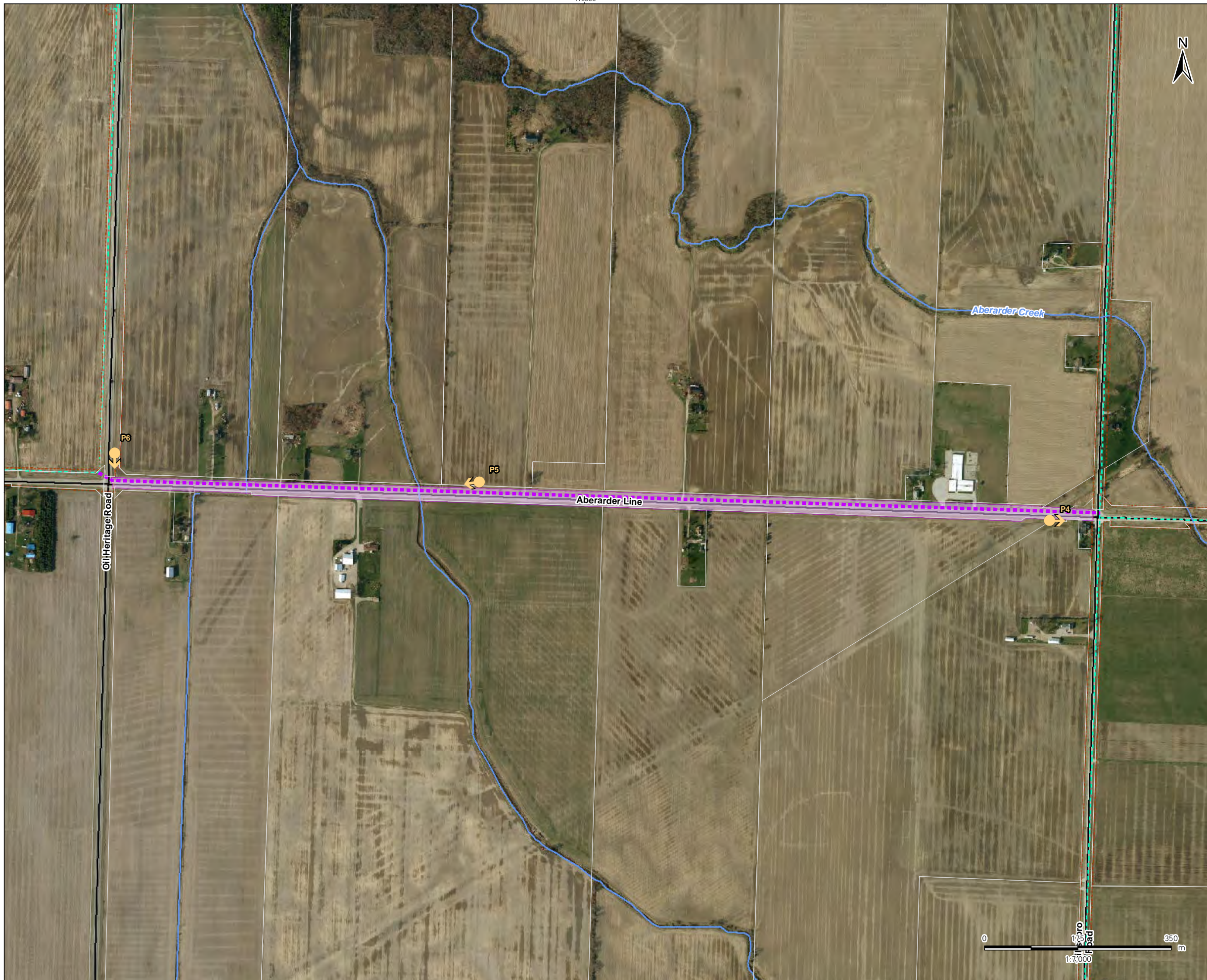
- Collector Line
- Underground Cable Constructible Area (20m)

Previously Assessed Infrastructure

- Proposed Turbine Location
- Collector Line
- Previously Assessed Constructible Area

Existing Features

- Road
- Watercourse
- Property Boundary
- Photo Location



Notes

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160960709

Client/Project

Suncor Energy
Cedar Point Wind Power Project

Figure No.

7.2

Title

**Stage 1 Property Inspection Results
- Proposed Collector Line: Arberarder Line**

**STAGE 1 ARCHAEOLOGICAL ASSESSMENT SUNCOR ENERGY CEDAR POINT WIND POWER PROJECT,
ADDITIONAL RIGHT-OF-WAYS**

Closure
May 20, 2014

9.0 CLOSURE

This report has been prepared for the sole benefit of Suncor Energy Products Inc. and may not be used by any third party without the express written consent of Stantec Consulting Ltd. and Suncor Energy Products Inc.

We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.



Senior Review _____
(signature)

Tracie Carmichael, BA, B.Ed., Senior Associate, Environmental Services, Archaeology



Licensee Review _____
(signature)

Parker Dickson, MA, Project Archaeologist



Appendix E:

Email Addendums: Heritage Assessment, and MTCS Confirmation

Skillen, Kerrie

From: Rivard, Meaghan
Sent: Thursday, May 15, 2014 3:50 PM
To: Laura.E.Hatcher@ontario.ca
Cc: Skillen, Kerrie
Subject: Suncor Energy Cedar Point Wind Energy Facility - Project Modifications (MTCS DPR File No.: PLAN-38EA051)
Attachments: 160960709_AddendumMapbook_20140430.pdf
Importance: High

Good afternoon Laura,

This email is to notify the MTCS that modifications are being proposed for the above referenced project. As a result, we are contacting you to outline the implications for heritage resources.

As depicted in the attached figures, modifications are proposed to a transmission line and the site of three turbines. Modifications involve the movement of a portion of the transmission line from the municipal right-of-way to private properties on the northwest side of the intersection of Rawlings Road and Proof Line, and the relocation of access roads to previously established turbine sites, specifically, Turbines 11, 51, and 23.

Following review of the August 30, 2012, *Heritage Assessment Report* completed by Golder Associates Ltd. (MTCS comments received October 5, 2012), and the April 9, 2013, *Built Heritage Inventory Addendum*, also completed by Golder Associates Ltd. (MTCS comments received April 12, 2013), it was determined that additional assessment was required where transmission line movement was proposed but not where access roads are proposed as each property had been previously assessed.

I undertook a field assessment Thursday, May 15, 2014, to determine the presence of heritage resources at the two additional properties depicted on the first page of the four page PDF of the attached (labelled as Figure 3). The weather conditions were cloudy with occasional rain. Both properties were determined to comprised entirely of crops under cultivation. No additional potential heritage resources were identified.

As a result it was determined that these proposed modifications do not alter the findings of the previously issued reports. **Therefore, it was determined that no further work is required as a result of the proposed modifications.**

At your earliest convenience, may you please offer comments on the above findings.

Thank you in advance for your time!

Best,
Meaghan

Meaghan Rivard, MA, CAHP

Heritage Consultant
Stantec
49 Frederick Street Kitchener ON N2H 6M7
Phone: (519) 575-4114
Fax: (519) 579-4239
Meaghan.Rivard@stantec.com



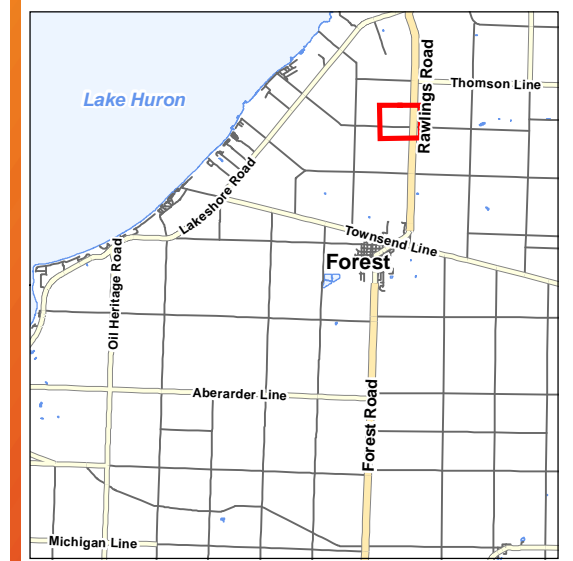
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Please consider the environment before printing this email.



Legend

- Zone of Investigation- (Terrestrial)
- Zone of Investigation- (Aquatic)
- New- Unassessed Infrastructure
- Access Road
- Transmission Line
- Overhead Transmission Line Constructible Area
- Previously Assessed Infrastructure
- Proposed Turbine Location
- Access Road
- Collector Line
- Transmission Line
- Previously Assessed Constructible Area
- Existing Features
- Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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April 2014
160960709

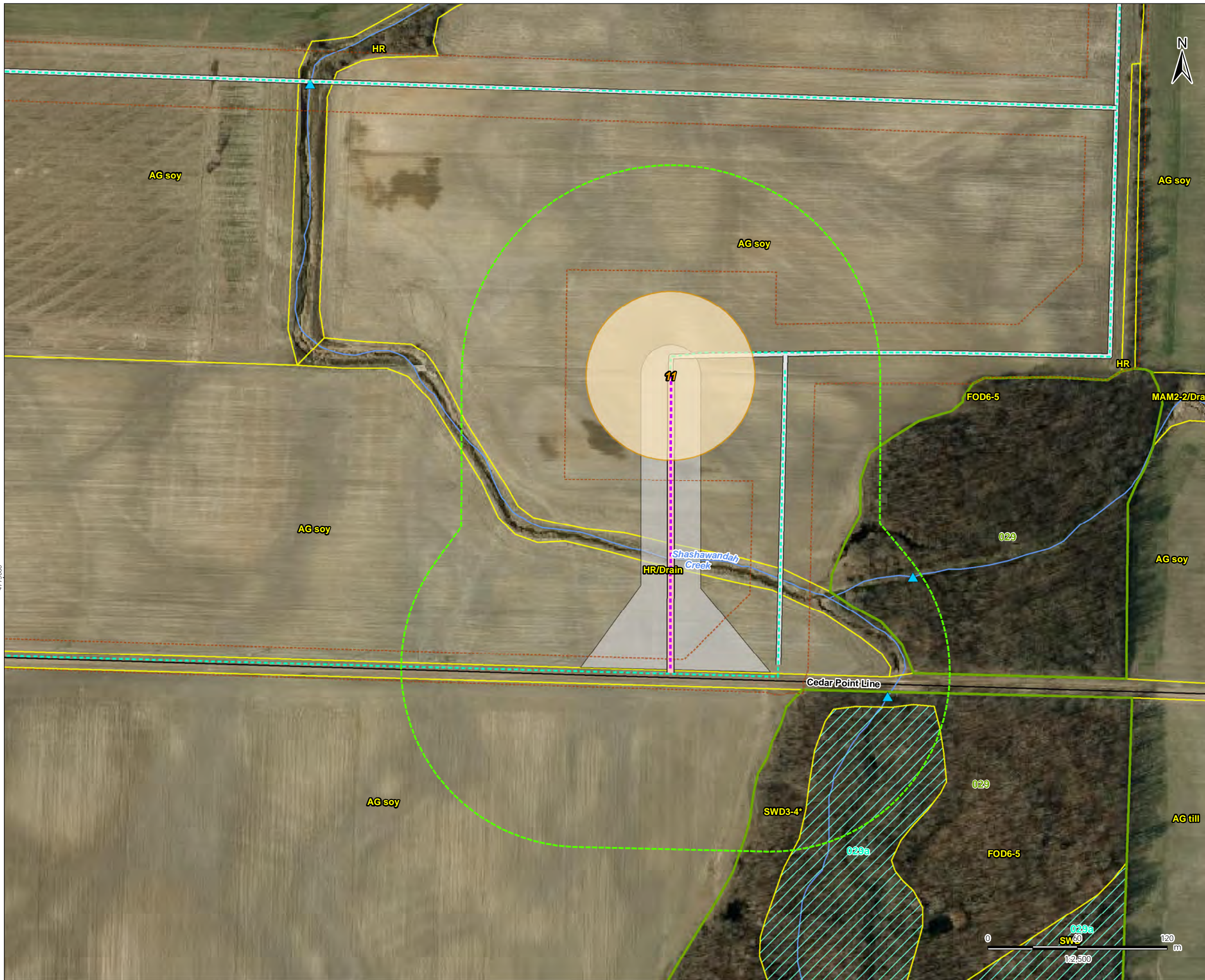
Client/Project

Suncor Energy
Cedar Point Wind Power Project

Figure No.
3

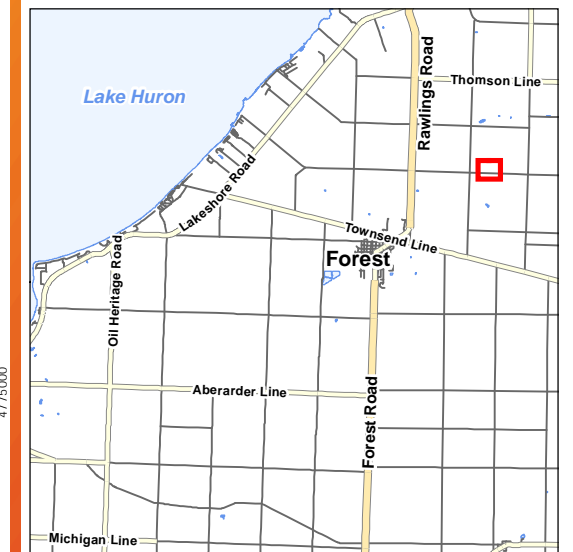
Title
Natural Features- Proposed
Transmission Line

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 Revised: 2014-04-30 By: dhanvey



Legend

- Zone of Investigation- (Terrestrial & Aquatic)
- New- Unassessed Infrastructure**
- Access Road
- Collector Line
- Access Road and Collector Constructible Area (40m)
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road
- Collector Line
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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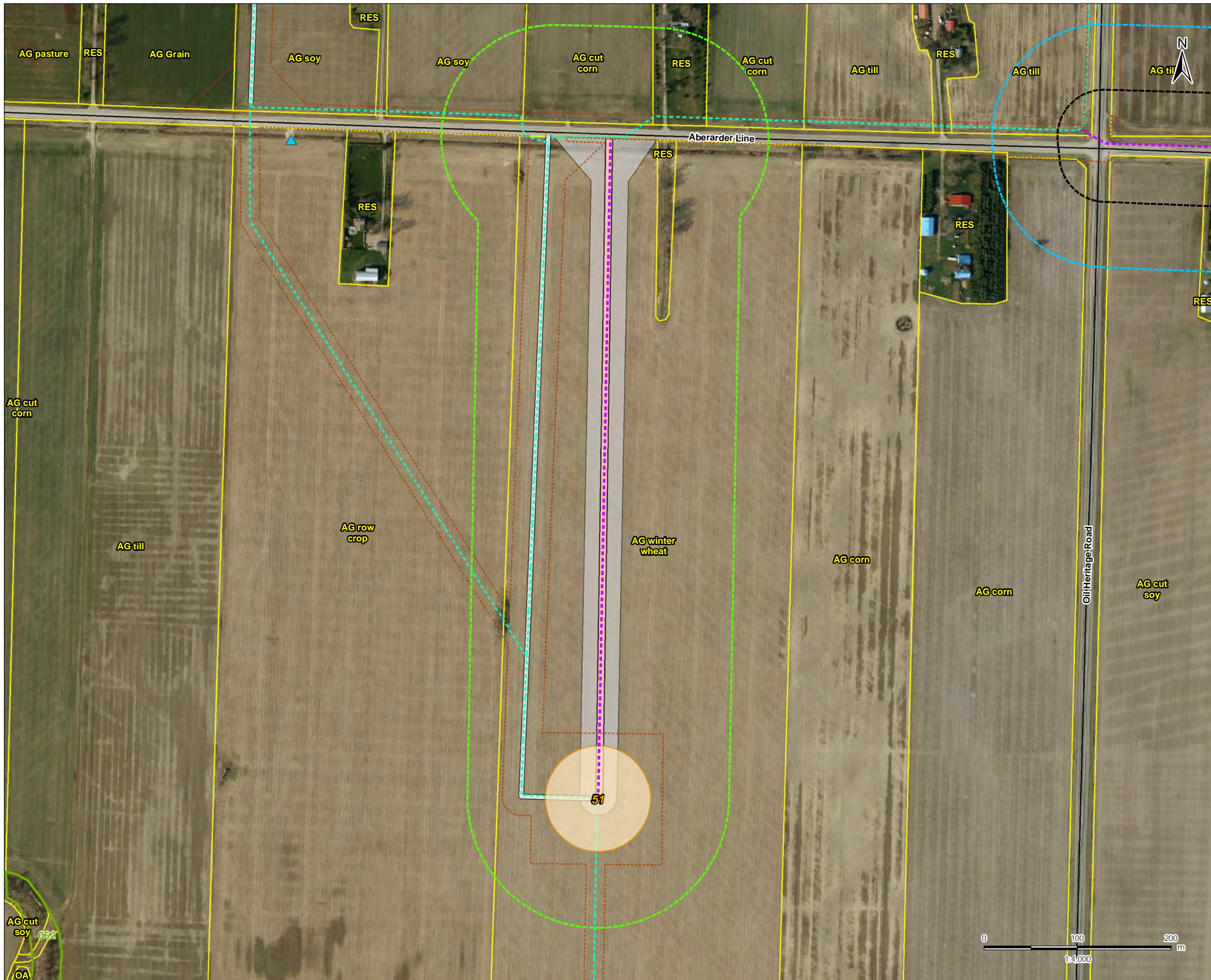
April 2014
160960709

Client/Project

Suncor Energy
Cedar Point Wind Power Project

Figure No.
5

Title
Natural Features- T11- Alternative Access Road and Collector Route



- Legend**
- Zone of Investigation- (Terrestrial & Aquatic)
 - Zone of Investigation- (Terrestrial)
 - Zone of Investigation- (Aquatic)
 - New- Unassessed Infrastructure
 - Access Road
 - Collector Line
 - Access Road and Collector Constructible Area (40m)
 - Previously Assessed Infrastructure
 - Proposed Turbine Location
 - Access Road
 - Collector Line
 - Previously Assessed Constructible Area
 - Existing Features**
 - ▲ Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
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April 2014
160960709

Client/Project
Suncor Energy
Cedar Point Wind Power Project

Figure No.
6

Title
Natural Features- T51- Alternative Access Road and Collector Route

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Revised: 2014-04-30 By: dhanvey

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 Revised: 2014-04-30 By: dhanvey



Legend

- Zone of Investigation- (Terrestrial & Aquatic)
- New- Unassessed Infrastructure**
- Access Road
- Collector Line
- Collector Line
- Access Road and Collector Constructible Area (40m)
- Previously Assessed Infrastructure**
- Proposed Turbine Location
- Access Road
- Collector Line
- Previously Assessed Constructible Area
- Existing Features**
- ▲ Aquatic Sampling Station
- ELC Community Boundary
- Watercourse
- Road
- Wetland
- Woodland



Notes

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April 2014
160960709

Client/Project

Suncor Energy
Cedar Point Wind Power Project

Figure No.
7

Title
Natural Features- T23- Alternative Access Road and Collector Route

Skillen, Kerrie

From: Hatcher, Laura (MTCS) <Laura.E.Hatcher@ontario.ca>
Sent: Wednesday, May 21, 2014 4:08 PM
To: Rivard, Meaghan
Cc: Skillen, Kerrie
Subject: RE: Suncor Energy Cedar Point Wind Energy Facility - Project Modifications (MTCS DPR File No.: PLAN-38EA051)

Good afternoon Meaghan,

The Ministry of Tourism, Culture and Sport has reviewed the documents for the above mentioned project showing the new location of the access roads and collector lines for turbines 11, 51 and 23, and the new location of the transmission line to the properties at the northwest intersection of Rawlings Road and Proof Line. Based on this review and your confirmation that the new location of the transmission will not impact heritage resources, a revised heritage assessment will not need to be submitted, and the recommendations quoted in MTCS's letter of April 12, 2013 remain valid.

Sincerely,
Laura

Laura Hatcher, MCIP, RPP

Team Lead (A) – Heritage Land Use Planning
Culture Services Unit | Programs and Services Branch | Ministry of Tourism, Culture and Sport
401 Bay Street Suite 1700 Toronto ON M7A 0A7
Tel. 416.314.3108 | email: laura.e.hatcher@ontario.ca

From: Rivard, Meaghan [<mailto:Meaghan.Rivard@stantec.com>]
Sent: May 15, 2014 3:50 PM
To: Hatcher, Laura (MTCS)
Cc: Skillen, Kerrie
Subject: Suncor Energy Cedar Point Wind Energy Facility - Project Modifications (MTCS DPR File No.: PLAN-38EA051)
Importance: High

Good afternoon Laura,

This email is to notify the MTCS that modifications are being proposed for the above referenced project. As a result, we are contacting you to outline the implications for heritage resources.

As depicted in the attached figures, modifications are proposed to a transmission line and the site of three turbines. Modifications involve the movement of a portion of the transmission line from the municipal right-of-way to private properties on the northwest side of the intersection of Rawlings Road and Proof Line, and the relocation of access roads to previously established turbine sites, specifically, Turbines 11, 51, and 23.

Following review of the August 30, 2012, *Heritage Assessment Report* completed by Golder Associates Ltd. (MTCS comments received October 5, 2012), and the April 9, 2013, *Built Heritage Inventory Addendum*, also completed by Golder Associates Ltd. (MTCS comments received April 12, 2013), it was determined that additional assessment was required where transmission line movement was proposed but not where access roads are proposed as each property had been previously assessed.

I undertook a field assessment Thursday, May 15, 2014, to determine the presence of heritage resources at the two additional properties depicted on the first page of the four page PDF of the attached (labelled as Figure 3). The weather conditions were cloudy with occasional rain. Both properties were determined to comprised entirely of crops under cultivation. No additional potential heritage resources were identified.

As a result it was determined that these proposed modifications do not alter the findings of the previously issued reports. **Therefore, it was determined that no further work is required as a result of the proposed modifications.**

At your earliest convenience, may you please offer comments on the above findings.

Thank you in advance for your time!

Best,
Meaghan

Meaghan Rivard, MA, CAHP

Heritage Consultant

Stantec

49 Frederick Street Kitchener ON N2H 6M7

Phone: (519) 575-4114

Fax: (519) 579-4239

Meaghan.Rivard@stantec.com



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Skillen, Kerrie

From: Rivard, Meaghan
Sent: Friday, May 23, 2014 3:26 PM
To: Laura.E.Hatcher@ontario.ca
Cc: Skillen, Kerrie; Kozak, Mark (makozak@suncor.com)
Subject: Suncor Energy Cedar Point Wind Energy Facility - Project Modifications (MTCS DPR File No.: PLAN-38EA051)
Attachments: 160960709_FigXXX_TLine_WetlandAddendumMapbook_20140523.pdf
Importance: High

Good afternoon Laura,

This email is to notify the MTCS that modifications are being proposed for the above referenced project. As a result, we are contacting you to outline the implications for heritage resources.

Two additional modifications have been proposed to the above referenced project relating to transmission lines on private properties. Please find attached two maps depicting the modifications proposed. Modifications have been proposed in response to natural heritage considerations on each property. Following review of the August 30, 2012, *Heritage Assessment Report* completed by Golder Associates Ltd. (MTCS comments received October 5, 2012), and the April 9, 2013, *Built Heritage Inventory Addendum*, also completed by Golder Associates Ltd. (MTCS comments received April 12, 2013), it was determined that all properties where modifications are proposed have been previously assessed and impacts as a result of these modifications are not anticipated.

When reviewing recommendations contained within both reports it was determined that the proposed modifications will not alter the findings of the previously issued reports. **Therefore, it was determined that no further work is required as a result of the proposed modifications.**

The proponent is currently in discussions with the Ministry of the Environment regarding these changes. At your earliest convenience, may you please offer comments on the above determination.

Thank you in advance for your time and assistance.

Best,
Meaghan

Meaghan Rivard, MA, CAHP

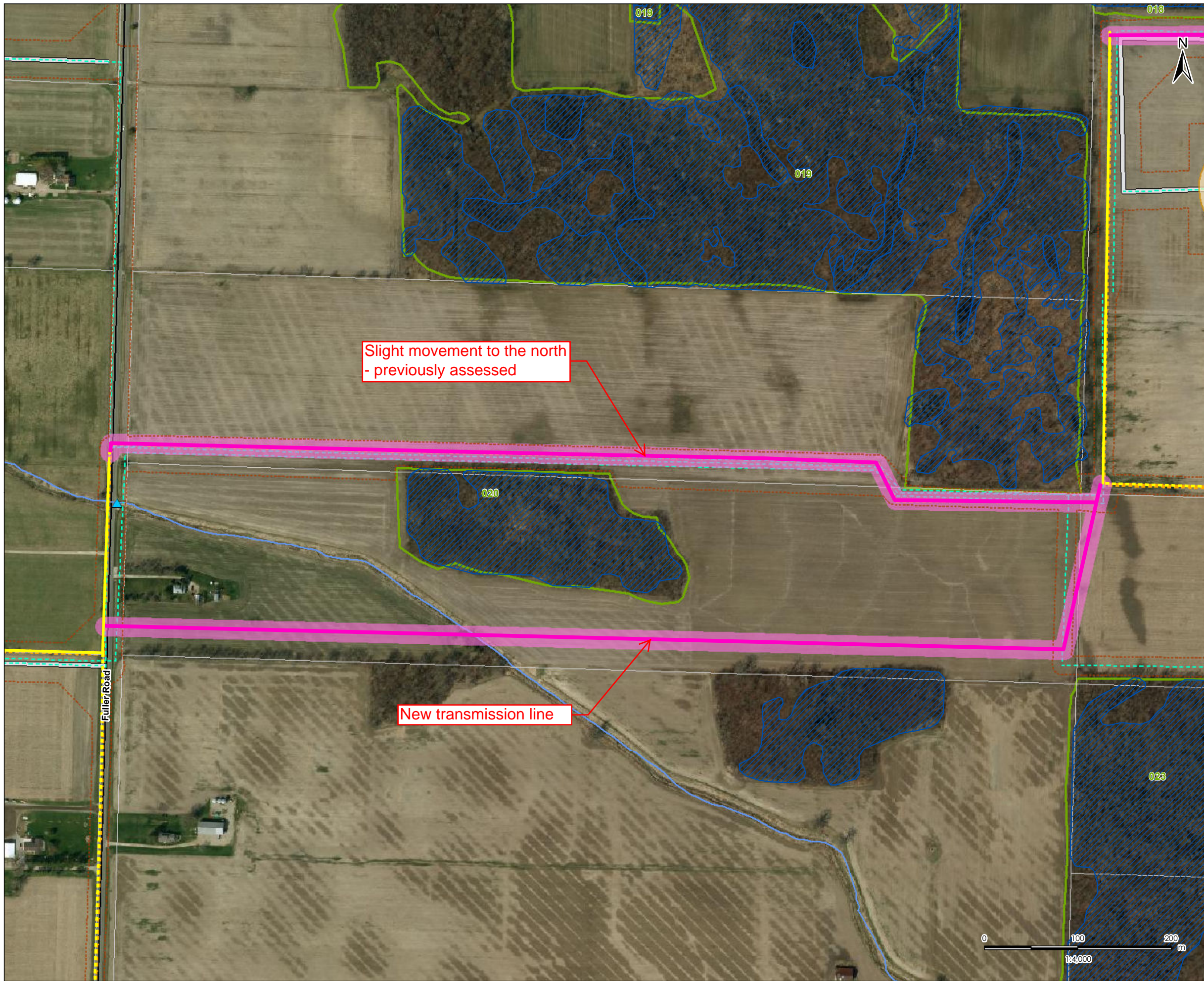
Heritage Consultant
Stantec
49 Frederick Street Kitchener ON N2H 6M7
Phone: (519) 575-4114
Fax: (519) 579-4239
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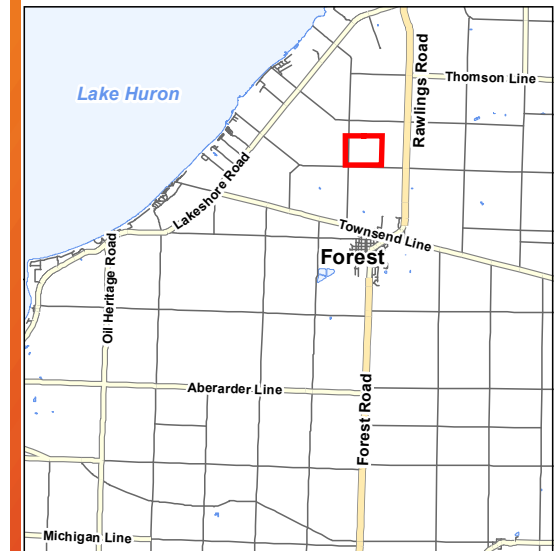
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 Revised: 20140523 By: dhaney



Legend

- New/ Modified Infrastructure**
- Amended Transmission Line Route Option to Avoid New PSW
 - Overhead Transmission Line Constructible Area
- Previously Assessed Infrastructure**
- Proposed Turbine Location
 - Access Road
 - Collector Line
 - Transmission Line- Preferred Route
 - Transmission Line- Other Route Option
 - Previously Assessed Constructible Area
- Existing Features**
- Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland
 - Property Boundary
- Wetland- MNR**
- Evaluated-Provincial



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Imagery Source - Suncor Energy. Includes material © 2012 of the Queen's printer for Ontario. All rights reserved. Imagery Date: 2010

May 2014
160960709

Client/Project

Suncor Energy
Cedar Point Wind Power Project

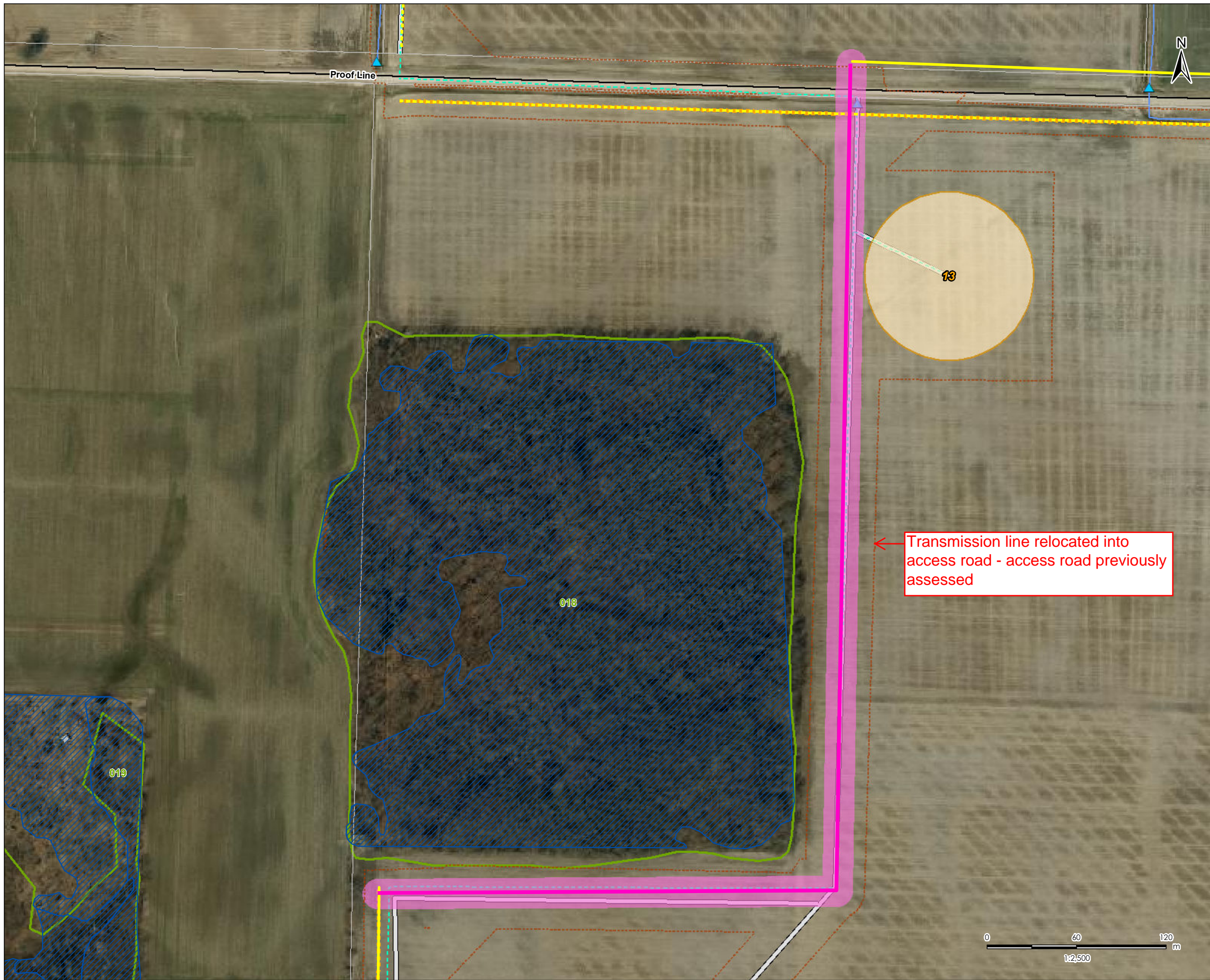
Figure No.

8

Title

Natural Features- Proposed Transmission Line Revision 1

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 Revised: 20140523 By: dhaney



Legend

- New/ Modified Infrastructure**
- Amended Transmission Line Route Option to Avoid New PSW
 - Overhead Transmission Line Constructible Area
- Previously Assessed Infrastructure**
- Proposed Turbine Location
 - Access Road
 - Collector Line
 - Transmission Line- Preferred Route
 - Transmission Line- Other Route Option
 - Previously Assessed Constructible Area
- Existing Features**
- Aquatic Sampling Station
 - ELC Community Boundary
 - Watercourse
 - Road
 - Woodland
 - Property Boundary
- Wetland- MNR**
- Evaluated-Provincial



Transmission line relocated into access road - access road previously assessed

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Imagery Source - Suncor Energy. Includes material © 2012 of the Queen's printer for Ontario. All rights reserved. Imagery Date: 2010

May 2014
160960709

Client/Project

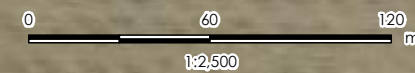
Suncor Energy
Cedar Point Wind Power Project

Figure No.

9

Title

Natural Features- Proposed Transmission Line Revision 2



Skillen, Kerrie

From: Hatcher, Laura (MTCS) <Laura.E.Hatcher@ontario.ca>
Sent: Tuesday, May 27, 2014 10:36 AM
To: Rivard, Meaghan
Cc: Skillen, Kerrie; Kozak, Mark (makozak@suncor.com)
Subject: RE: Suncor Energy Cedar Point Wind Energy Facility - Project Modifications (MTCS DPR File No.: PLAN-38EA051)

Good morning Meaghan,

The Ministry of Tourism, Culture and Sport has reviewed the documents “Proposed Transmission Line 1” and “Proposed Transmission Line 2” showing the new location of transmission lines for the above mentioned project. Based on this review and your confirmation that the new location of the transmission will not impact heritage resources, a revised heritage assessment will not need to be submitted, and the recommendations quoted in MTCS’s letter of April 12, 2013 remain valid.

Sincerely,
Laura

Laura Hatcher, MCIP, RPP

Team Lead (A) – Heritage Land Use Planning
Culture Services Unit | Programs and Services Branch | Ministry of Tourism, Culture and Sport
401 Bay Street Suite 1700 Toronto ON M7A 0A7
Tel. 416.314.3108 | email: laura.e.hatcher@ontario.ca

From: Rivard, Meaghan [<mailto:Meaghan.Rivard@stantec.com>]
Sent: May 23, 2014 3:26 PM
To: Hatcher, Laura (MTCS)
Cc: Skillen, Kerrie; Kozak, Mark (makozak@suncor.com)
Subject: Suncor Energy Cedar Point Wind Energy Facility - Project Modifications (MTCS DPR File No.: PLAN-38EA051)
Importance: High

Good afternoon Laura,

This email is to notify the MTCS that modifications are being proposed for the above referenced project. As a result, we are contacting you to outline the implications for heritage resources.

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When reviewing recommendations contained within both reports it was determined that the proposed modifications will not alter the findings of the previously issued reports. **Therefore, it was determined that no further work is required as a result of the proposed modifications.**

The proponent is currently in discussions with the Ministry of the Environment regarding these changes. At your earliest convenience, may you please offer comments on the above determination.

Thank you in advance for your time and assistance.

Best,
Meaghan

Meaghan Rivard, MA, CAHP

Heritage Consultant

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49 Frederick Street Kitchener ON N2H 6M7

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