RENEWABLE ENERGY APPROVAL
MODIFICATION REPORT
SOUTH BRANCH WIND FARM
SBWF GP INC., AS A GENERAL PARTNER FOR AND ON BEHALF OF SOUTH DUNDAS WINDFARM LIMITED PARTNERSHIP

September 2013

REA No. 8279-974KHK

1. PROJECT BACKGROUND

The South Branch Wind Farm is a 30 megawatt (MW) wind energy project near Brinston, Ontario in the United Counties of Stormont, Dundas and Glengarry and the United Counties of Leeds & Grenville. Development of the project began in 2007 and the ownership of the project transitioned from Prowind Canada Inc. to EDP Renewables Canada Ltd. (EDPR) in the summer of 2012.

The Renewable Energy Approval (REA) for the South Branch Wind Farm was posted to the Environmental Registry (EBR) on July 11, 2013 [REA No. 8279-974KHK.]

2. SUMMARY OF PROPOSED MODIFICATIONS

Changes are being proposed (see Attachment A - Current Layout, and Attachment B - Revised Layout) to portions of the collection line, temporary access roads, and temporary turning radii.

2.1 Collection Line Modifications between Turbines 11 and 12 [CL-MOD1, Attachment B – Figure 5]

- Modify the collection line route between Turbines 11 and 12 to reduce length of cable and ground disturbance.

Based on the site plan presented in the current REA documentation, the collection line between Turbines 11 and 12 travels north-northeast from Turbine 11 with two small turns before reaching Turbine 12.

Under the modified collection route, the cable would travel north-northeast from Turbine 11 more directly and eliminate the two small turns before reaching Turbine 12.

The modified collection line route would be located entirely on private land under contract with EDPR and originally included as part of the project location.

2.2 Temporary Access Road Modifications between Turbines 11 and 12 [AR-MOD1, Attachment B – Figure 5]

- Modify the temporary access road between Turbines 11 and 12 to reduce length of road and ground disturbance.

The area of change would be limited to the Township of South Dundas. Based on the original site plan in the current REA documentation, the temporary access road between Turbines 11 and 12 travels north-northeast from Turbine 11 with two small turns before reaching Turbine 12.

Under the modified collection route, the temporary access road would travel north-northeast from Turbine 11 more directly and eliminate the two small turns before reaching Turbine 12.
The modified temporary access road would be located entirely on private land under contract with EDPR and originally included as part of the project location.

2.3 Temporary Access Road Modifications Near Turbine 15 [AR-MOD2, Attachment B – Figure 3]

- Modify the current access road design to include a new temporary section of access road to allow for delivery of turbine components to Turbine 15.

The area of change would be limited to the Township of South Dundas. A section of temporary access road will be added to allow for delivery of turbine components to Turbine 15. The length of this temporary road will be approximately 370 meters.

2.4 Temporary Turning Radius on Participating Land at Intersection of County Road 16 and Snowbird Road [TR-MOD1, Attachment B – Figure 2]

- Add temporary turning radius for delivery of turbine components to Turbines 7 & 8 on Snowbird Rd.

The area of change would be limited to the Township of South Dundas. The temporary turning radii will be added between County Road 16 and Snowbird Road to allow for delivery of turbine components to Turbines 7 & 8. The length of this turning radius will be approximately 110 meters.

2.5 Temporary Turning Radius on Participating Land South of Turbine 10 on Henderson Road [TR-MOD2, Attachment B – Figure 4]

- Add temporary turning radius for delivery of turbine components to Turbines 3, 4, 5 and 6.

The area of change would be limited to the Township of South Dundas. The temporary turning radii will be added off of Henderson Road to allow for delivery of turbine components to Turbines 3, 4, 5 and 6. The length of this turning radius will be approximately 110 meters.

3. RATIONALE FOR CHANGES

All properties included in the revised collection line are used for agricultural production, thus having minimal land use and environmental impacts. The proposed changes would reduce the amount of impact to agricultural drainage tile along with reduction of overall length needed.

The proposed temporary access road modifications and turning radii have been added now that more specific information is available regarding turning radius requirements of the turbine supplier and delivery service. This specific information was not available when the original layout was proposed with the initial REA submission.

4. IMPACT ON STUDIES / REA REPORTS

4.1 Natural Heritage Assessment

The Natural Heritage Assessment (NHA) report (included in the REA submission) identified natural features within 120 m of all project facilities. No natural features identified in the NHA would be impacted by the proposed changes. There are no identified natural features requiring assessment on the lands proposed for the revised collection routes, temporary access roads, or temporary turning radii.

4.2 Archaeological and Heritage Resources Assessment

Archaeological Research Associates Ltd conducted Stage 1 and Stage 2 Archaeological Assessments of the proposed changes. There were no archaeological resources identified in the area of the proposed changes. This report is included as Attachment D, and was submitted to MTCS on July 30, 2013. No archeological resources were discovered during this assessment, and EDPR received a Letter of Concurrence from MTCS on August 12, 2013 (Attachment D).

4.3 Site Plan

The Site Plan has been updated to reflect the proposed changes and is included as Attachment B.

The following REA reports and studies were reviewed as to whether changes were required due to the modifications. Any changes to the reports have been addressed by issuance of this Modification Report.

REA Reports & Studies	Change (Yes/No)	Discussion of change / Justification for 'no' change
REA REPORTS		
Project Description Report	Yes (minor)	The table and figures need to be updated to show the revised collection line, temporary access roads and temporary turning radii location: • Figures – revise layout
Construction Plan Report	Yes (minor)	The figure and section need to be updated to show the revised collection line, temporary access roads and temporary turning radii.

REA Reports & Studies	Change (Yes/No)	Discussion of change / Justification for 'no' change
		• Figure 2 – revise layout
Design & Operations Report	Yes (minor)	The figure and section need to be updated to show the revised collection line, temporary access roads and temporary turning radii. • Figure 2 – revise layout
Decommissioning Plan Report	Yes (minor)	Figure 2 needs to be updated but otherwise there is no specific collection line, temporary access road or temporary turning radius discussions that require updating due to the modifications.
Consultation Report	No	There are no specific descriptions of the collection line, temporary access roads or temporary turning radii locations in the consultation report.
ADDITIONAL REPORTS		
Project Drawings	Yes	Modified to show new layout of the collection line, temporary access roads and temporary turning radii.
Turbine Specifications Report	No	There are no changes proposed to the turbines and this report will not required any modifications.
Natural Heritage Assessment Report Records Review, Site Investigation, Evaluation of Significance and Environmental Impact Study	Yes	Addendum letter to address potential impacts was completed and submitted to MNR for review and is included in Attachment C. The letter of concurrence from MNR is provided in Attachment C.
Water Assessment Report Records Review, Site Investigation and Environmental Impact Study	No	No modifications to the reports since there are no previously unidentified watercourses within 120 m of the proposed modifications to the revised collection line, temporary access road or temporary turning radii.
Archaeology and Natural Heritage Resource Assessment Report	Yes	Addendum report to address potential impacts was completed and is included in Attachment D. The letter of confirmation from MTCS for the modification is included in Attachment D.
Noise Assessment Report	No	No modifications required since the collection line, temporary access road and temporary turning radii are not sources of noise for this project.
Impact Study on CBC Digital TV Broadcasting	No	No modifications required since the collection line, temporary access road and temporary turning radii do not impact broadcasting and were accounted for in the original report.
Radio Communication, Radar and Seismo-acoustic System Impact Assessment	No	No modifications required since the collection line, temporary access road and temporary turning radii do not interfere with these systems for this project.
Abutting Property Assessment Report	No	No modifications required since the collection line, temporary access road and temporary turning radii meet required setbacks.

5. NEW MITIGATION MEASURES

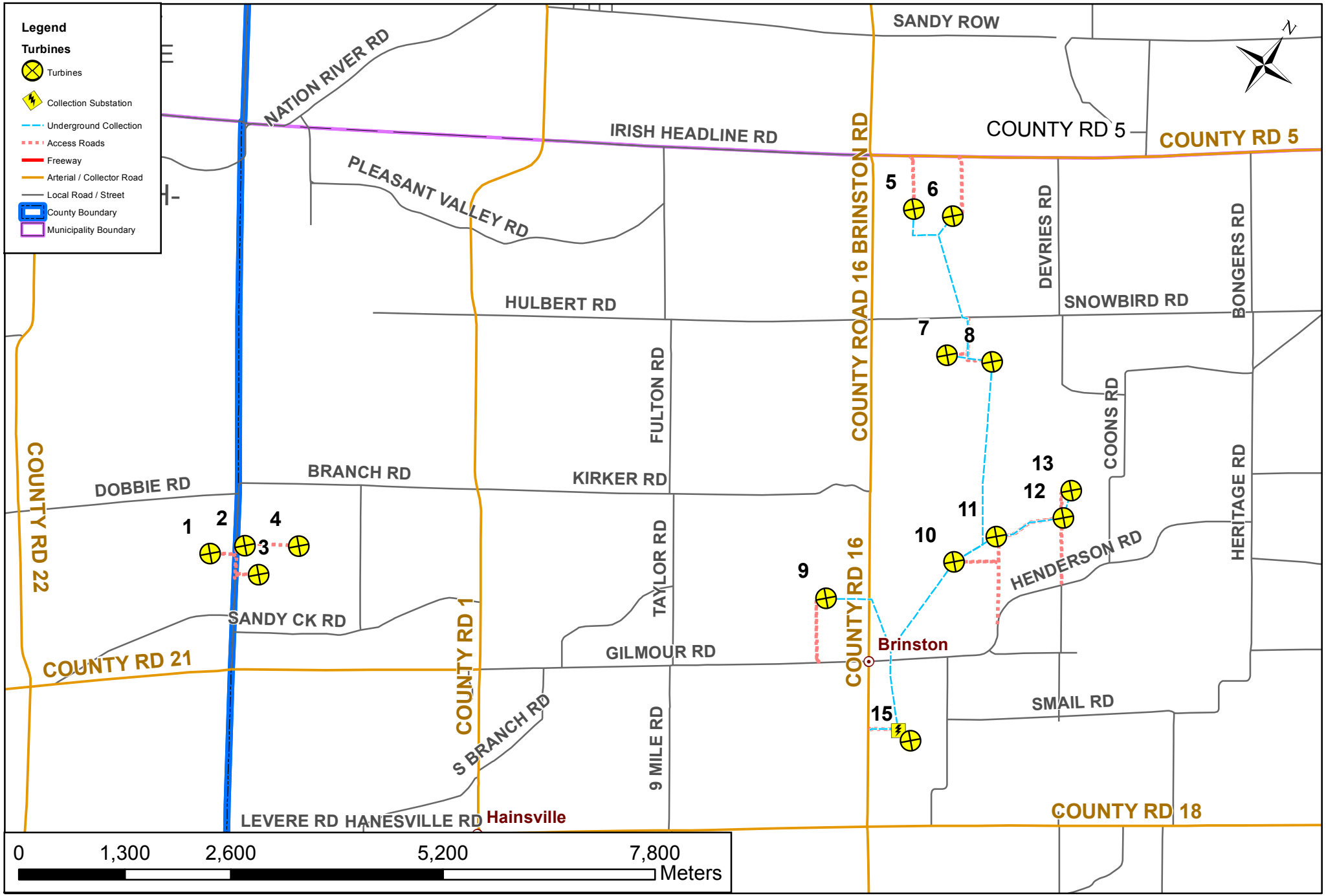
The changes proposed are minor in nature. Provided the mitigation measures in the NHA and Archaeological Reports are followed, there are no negative impacts anticipated and no further mitigation measures needed for the proposed collection line changes, temporary turning radii, or temporary access roads. Based on this, MTCS and MNR have confirmed the modifications would be considered minor updates.

6. SUMMARY AND CONCLUSIONS

The proposed modifications to collection line routing, temporary turning radii, and temporary access roads have been adequately studied. Following the studies and discussions with MTCS and MNR it was determined that the modifications would not result in increased negative environmental effects beyond those identified during the original REA documentation and consultation.

Attachment A
Original Layout in REA

South Branch Wind Farm - Modification Report, September 2013
Current REA Layout



Attachment B
Proposed Layout Modifications

FIGURE 1

South Branch Wind Farm
Addendum Report September 2013

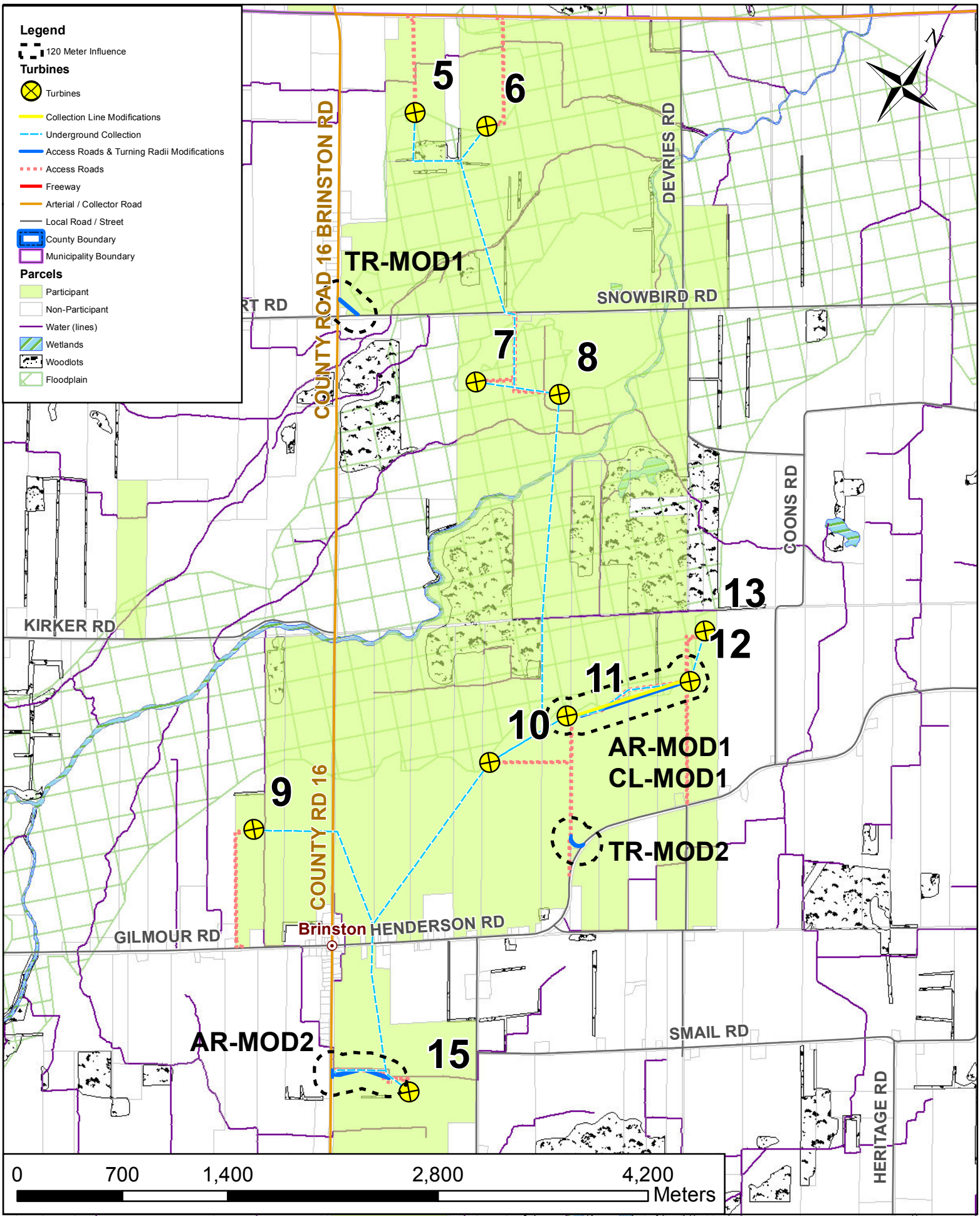


FIGURE 2

South Branch Wind Farm
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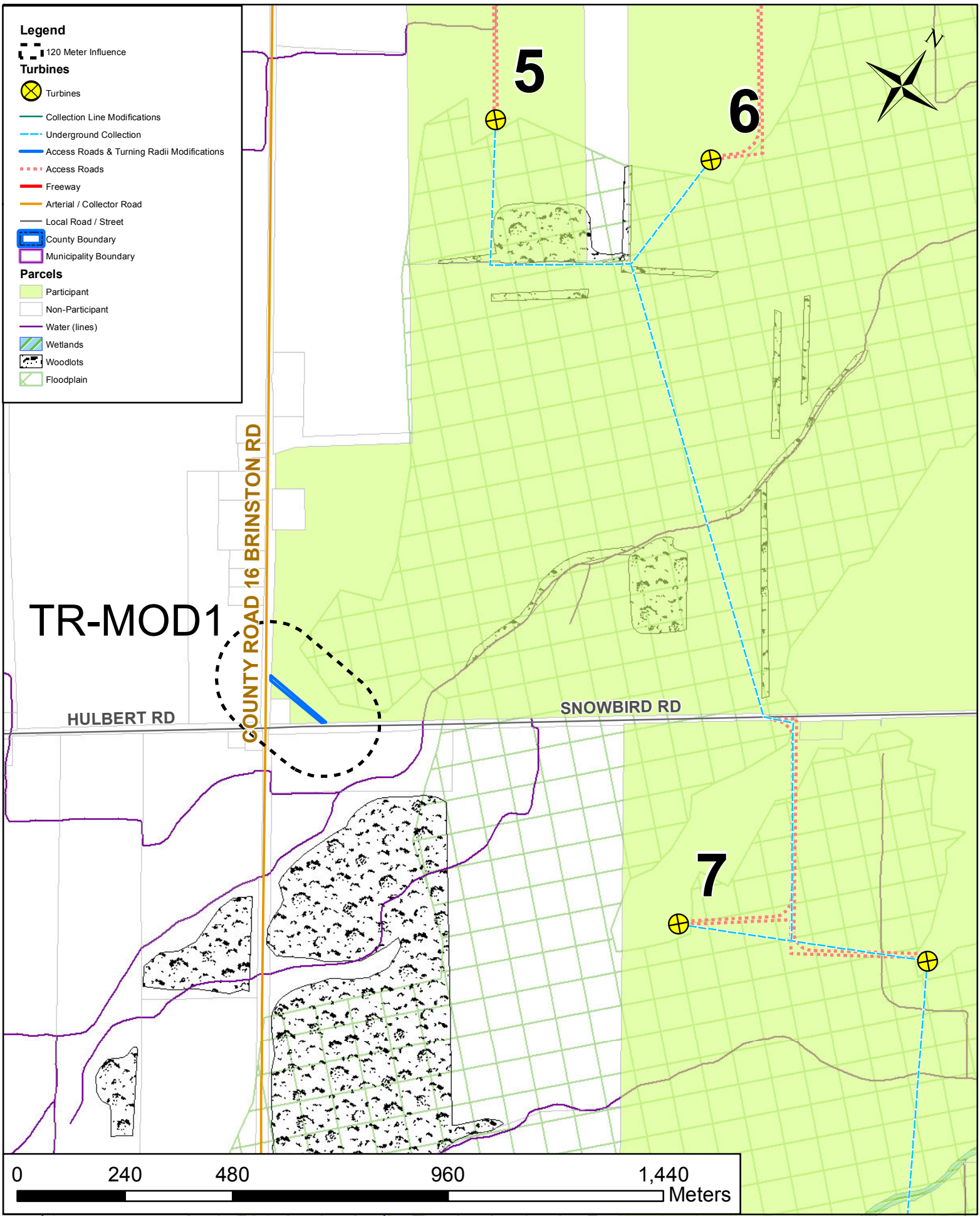

FIGURE 3

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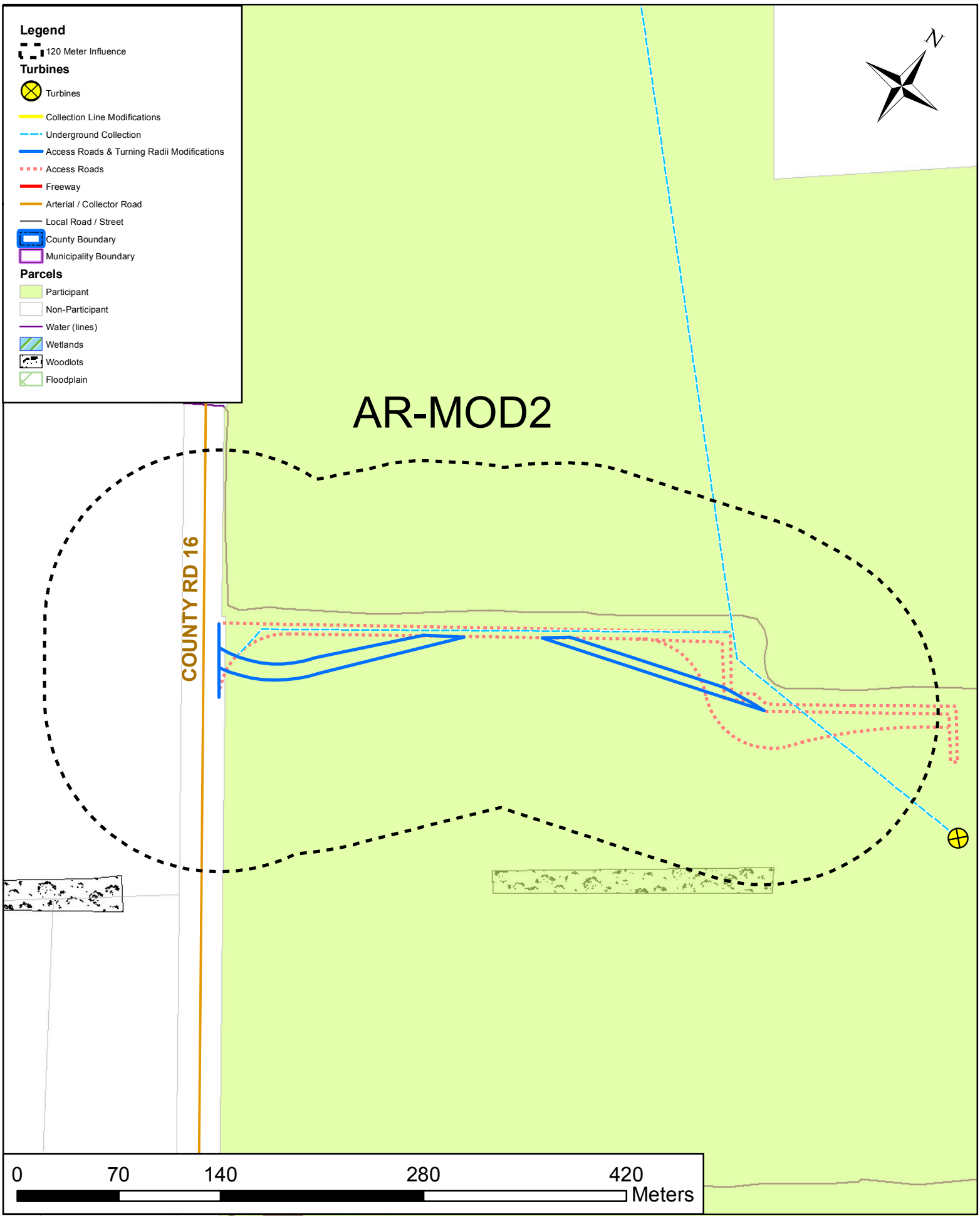

FIGURE 4

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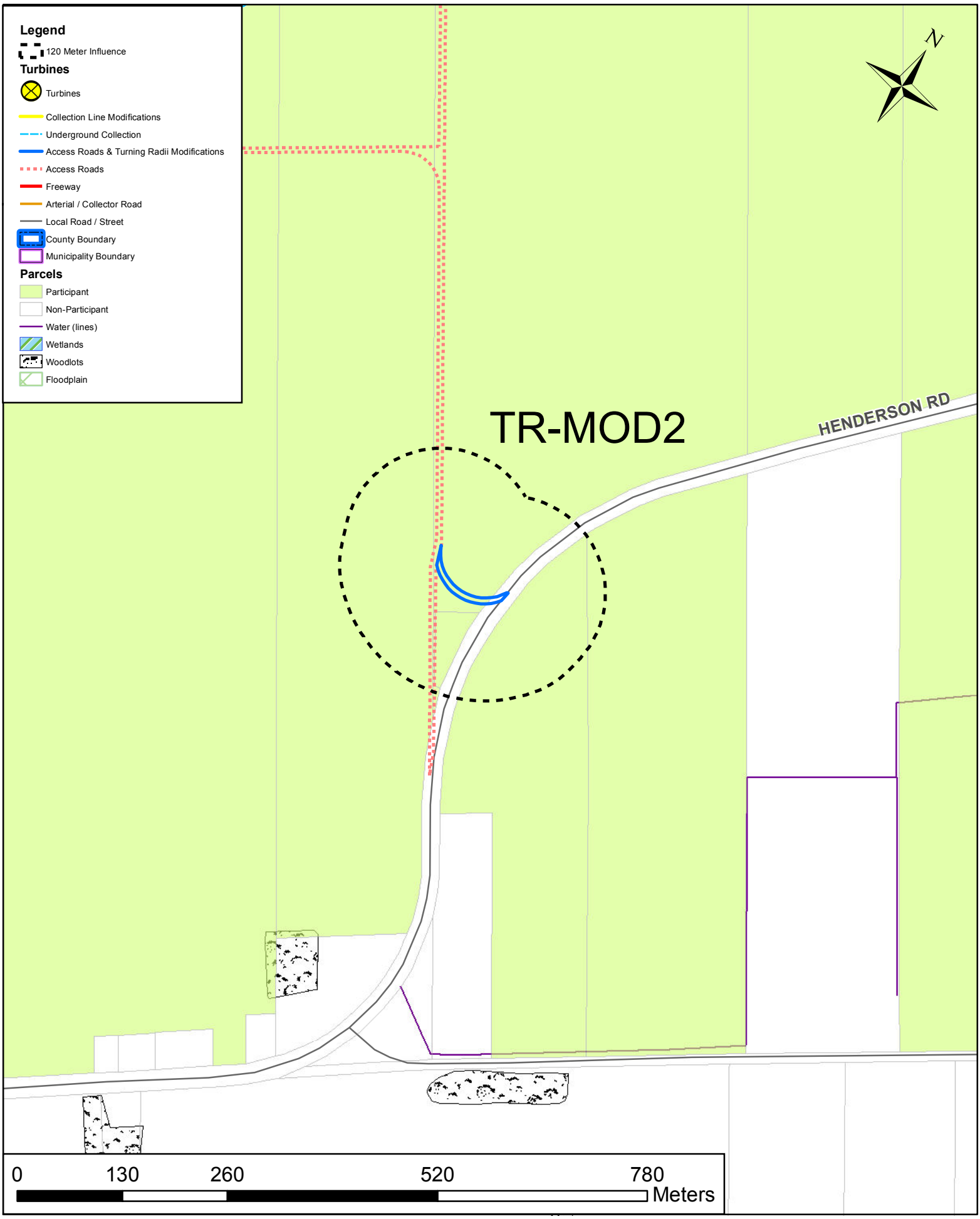

FIGURE 5

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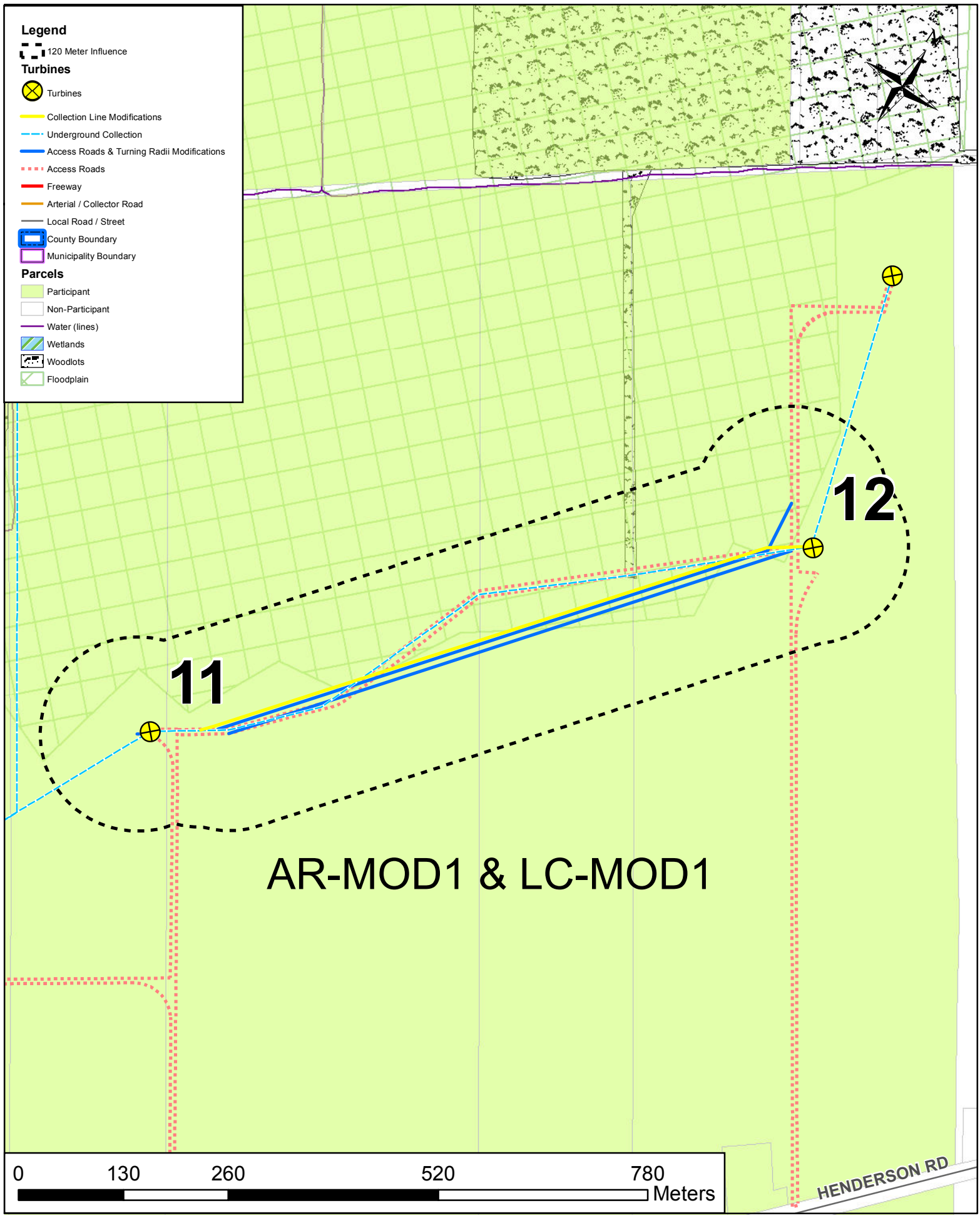

Attachment C
Addendum Letter to MNR for Modifications
MNR Letter of Confirmation for Modifications

Ministry of Natural Resources

Southern Region
P.O Box 7000
300 Water Street
Peterborough, ON
K9J 8M5
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Fax: 705-755-3292

Ministère des Richesses naturelles

Région du Sud
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Téléc.: 705-755-3292

Ontario

September 16, 2013

EDP Renewables Canada Ltd.
110 Spadina Avenue
Suite 609
Toronto, ON, M5V 2K4

RE: Modifications to South Branch Wind Project #2

Dear Ken Little,

The Ministry of Natural Resources (MNR) has received the document dated September 4, 2013 that describes modifications to the South Branch Wind Project made subsequent to MNR's letter confirming the Natural Heritage Assessment in respect of the project.

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 confirmations letter issued October 31, 2011 and February 8, 2013 for the South Branch Wind Project.

If you wish to discuss this matter further, please contact Joe Halloran at joe.halloran@ontario.ca or 705-755-5353.

Sincerely,

Kathy Woeller
Regional Land Use Planning Supervisor
Southern Region MNR

cc Narren Santos, Environmental Approvals Access & Service Integration Branch, MOE
Zeljko Romic, Environmental Approvals Access & Service Integration Branch, MOE

Renewable Energy Approval

Modification Report

South Branch Wind Farm

SBWF GP Inc., as a General Partner for and on Behalf of South Dundas Windfarm Limited Partnership

September 2013

Project No. 121-22956-00

September 4, 2013

Joe Halloran
Southern Region Planning Unit
Ministry of Natural Resources
300 Water Street, P.O. Box 7000
Peterborough, ON, K9J 8M5

Re: Renewable Energy Approval Addendum Report
South Branch Wind Farm
Brinston and surrounding area, Ontario

Dear Mr. Halloran:

We are pleased to submit the following information pertaining to proposed changes to the underground collection system, temporary access roads, and temporary turning radii for the South Branch Wind Farm. Following is a determination of the potential impacts associated with the proposed changes, and strategies to eliminate or mitigate these impacts.

Introduction

South Dundas Windfarm Limited Partnership ("Proponent") is proposing the South Branch Wind Farm, a wind energy generation facility with a nameplate capacity of up to 30 MW. The project is classified as a Class 4 wind facility in Ontario Regulation 359/09 (O.Reg. 359/09), defined as an on-shore wind facility with a nameplate capacity greater than 50 kW, and a sound power level greater than 102 dBA. The South Branch Wind Farm project has addressed the Renewable Energy Approval (REA) requirements, and an REA was issued by the Ministry of Environment (MOE) on July 11, 2013 (Number 8279-974KHK). Relevant approval documents can be found at http://www.edprwindfarms.com/canada/under-dev/south-branch.htm.

The Project Location, herein referred to as 'the Site' is located in Eastern Ontario, approximately 40 km southeast of Ottawa. The project is proposed on privately owned, agricultural land as well as municipal easements surrounding Brinston. The project turbines are located in two main areas; the western area along Byker Road, and the eastern area along County Road 16 (Brinston Road). Refer to Figure 1 and Figure 2 within the Draft South Branch Wind Farm Project Description Report, Version 3.1 (Prowind Canada, 2011a). The four western turbines near Byker Road will not be built as part of this wind farm as only 10 turbines are permitted to be built in the REA approval.

The information presented within this addendum report proposes a different collection route between Turbines 11 and 12; a temporary turning radius between County Road 16 and Snowbird Road within a participating parcel of land included in the REA project description; a temporary turning radius is also proposed within participating parcels on Henderson Road allowing access to turbines 10, 11, 12 and 13; and a temporary access road is also proposed on County Road 16

within participating parcels allowing access to turbine 15. Refer to Figure 1 for Site location details.

The Natural Heritage Features surrounding the Site are detailed in the South Branch Wind Farm Natural Heritage Assessment Report ("NHA Report"; Prowind Canada, 2011b), which included the required Records Review, Site Investigation, Evaluation of Significance, and Environmental Impact Study phases. Changes to the Site plan require a determination of potential impact to any Natural Features found within 120 m of the proposed infrastructure.

Temporary Turning Radii

In order to facilitate turbine delivery to the Site, it was determined that new temporary turning radii would be necessary. These turning radii will be installed on participating parcels previously established within the REA. As such, Proponent is coordinating with the MOE to amend the existing REA for the Project to include this turning radius and appropriate design and construction measures. Each turning radius within the project area has been listed below.

- [TR-MOD1] Temporary turning radius at the intersection of public roads County Road 16 and Snowbird Road. The proposed turning radii will be within 50 meters of a floodplain as defined by the South Nation Conservation Authority. As no direct disturbance of the floodplain will occur, no mitigation measures are required. No topsoil or fill will be stored within the floodplain from construction activities at this turning radius site. The NHA Report determines that no other Natural Heritage Features, as defined by subsection 1 (1) of O.Reg. 359/09 are within 120 meters of the proposed footprint.
- [TR-MOD2] Temporary turning radius along Henderson Road near the permanent access road to Turbines 3 & 4. The NHA Report determines that no Natural Heritage Features, as defined by subsection 1 (1) of O.Reg. 359/09 are within 120 meters of the proposed footprint.

These turning radii, in addition to 5 other turning radii proposed for public roads outside of the Site, have been screened for habitat of Species at Risk. A report of this screening will be provided separately to the MNR. The turning radius was screened for habitat that would accommodate cutlip minnow, chimney swift, barn swallow, bobolink, eastern meadowlark, Henslow's sparrow, loggerhead shrike, and whip-poor-will. Suitable habitat for these species was not found within the turning radii locations. Additionally, no butternut trees were found within 25m of the turning radii locations.

Temporary Access Roads

In order to facilitate turbine delivery to the Site, it was determined that some temporary access road modifications or additions will need to occur. These will occur on parcels of land that were included as participating parcels within the REA Project Description. As such, Proponent is coordinating with the MOE to amend the existing REA for the Project to include this turning radius

and appropriate design and construction measures. Each temporary access road modification or addition has been listed below.

- [AR-MOD1] Temporary access road modification between Turbines 11 and 12 to reduce overall length by straightening the section between the two turbines. The proposed route will be partially within a floodplain as defined by the South Nation Conservation Authority. The length of proposed temporary access road to be within the floodplain is 280 meters; this is reduced from 560 linear meters in the current route contemplated within the REA. The NHA Report determines that no other Natural Heritage Features, as defined by subsection 1 (1) of O.Reg. 359/09 are within 120 meters of the proposed footprint.
- [AR-MOD2] Temporary access road addition at Turbine 15 to allow for delivery of turbine components to site. The NHA Report determines that no Natural Heritage Features, as defined by subsection 1 (1) of O.Reg. 359/09 are within 120 meters of the proposed footprint. This proposed addition will be within 15 meters of Water Body Q as defined in the Water Assessment Report; however, this proposed addition will be no closer to Water Body Q than the current permanent access road design within the REA. If currently proposed mitigation measures are followed within the Water Assessment Report, no negative impact is expected from the addition of this temporary road.

These temporary access road modifications and additions are located within Anthropogenic or Agricultural Land uses. Provided the mitigation measures outlined within the NHA Report are followed, no negative impacts from the proposed changes are anticipated. No further mitigation measures are proposed for these locations.

Collection Line Modifications

Proponent has identified small portions of the collection line route that are unnecessarily long, and is proposing small adjustments to the route previously identified. In no case will the adjustment to this underground collection route deviate more than 60 meters from the originally proposed location. Please refer to Figure 1 for a map of the proposed modifications. The modifications will be located entirely within agricultural land that is currently planted in row crops. No hay fields will be impacted by the proposed revisions.

- [CL-MOD1] Collection line modification between Turbines 11 and 12 to reduce overall length by straightening the section between the two turbines. The proposed route will be partially within a floodplain as defined by the South Nation Conservation Authority. The length of proposed collection line route to be within the floodplain is 280 meters, this is reduced from 560 linear meters in the current route contemplated within the REA. The NHA Report determines that no other Natural Heritage Features, as defined by subsection 1 (1) of O.Reg. 359/09 are within 120 meters of the proposed footprint.

The NHA Report includes mapping of the Site and the 120 m area of influence using the Ecological Land Classification System (Lee et al. 1998). The proposed modifications to the collection line route (Refer to Figure 1) were determined to be entirely within Anthropogenic or Agricultural Land uses. The NHA Report also determines that there are no other Natural Heritage

Features other than the SNC designated floodplain, as defined by subsection 1(1) of O.Reg. 359/09 within 120 m of the proposed collection line modifications. The modified route will not require the crossing of any additional water features. As such, no mitigation measures are proposed for these locations.

Conclusions

As noted, the South Branch Wind Farm is a Class 4 wind facility under Ontario Regulation 359/09 and has received it's REA from the Ministry of Environment as of July 11, 2013. Given the modifications presented herein, the key findings are as follows:

- The proposed temporary turning radii additions are located within Anthropogenic or Agricultural Land uses. Provided the mitigation measures outlined within the NHA Report are followed, no negative impacts from the proposed changes to the collection line route are anticipated. No further mitigation measures are proposed for these locations.
- The proposed temporary access road modifications and additions are located within Anthropogenic or Agricultural Land uses. Provided the mitigation measures outlined within the NHA Report are followed, no negative impacts from the proposed changes to the collection line route are anticipated. No further mitigation measures are proposed for these locations.
- The proposed collection line changes are located within Anthropogenic or Agricultural Land uses. Provided the mitigation measures outlined within the NHA Report are followed, no negative impacts from the proposed changes to the collection line route are anticipated. No further mitigation measures are proposed for these locations.

References

Government of Ontario (Ontario). 2009. Ontario Regulation 359/09. Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act. Available online: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090359_e.htm#BK53. Accessed December 2012.

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

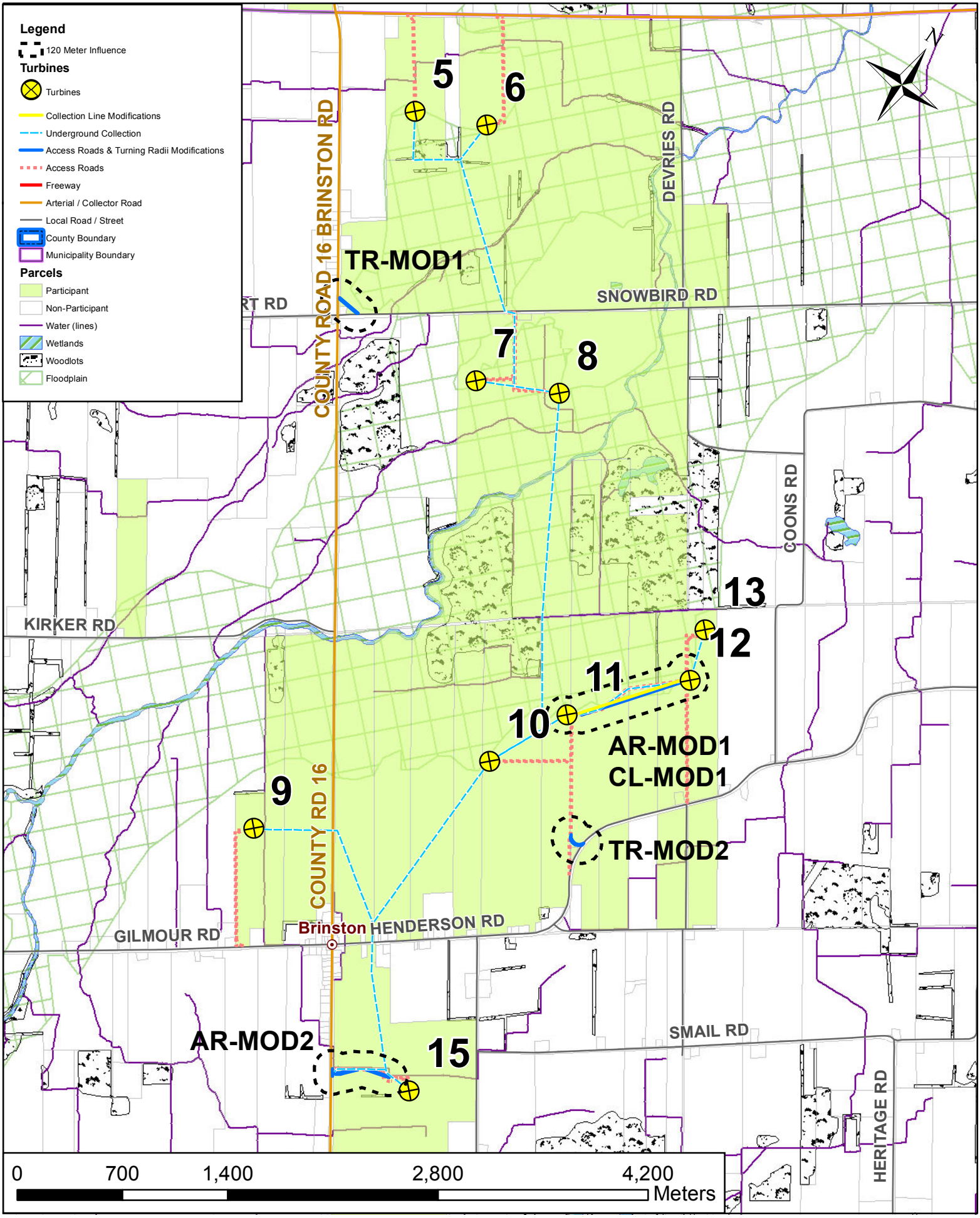
Prowind Canada. 2011a. Draft South Branch Wind Farm Project Description Report, Version 3.1. 35 pp.

Prowind Canada. 2011b. Draft South Branch Wind Farm Natural Heritage Assessment Report. 70 pp.

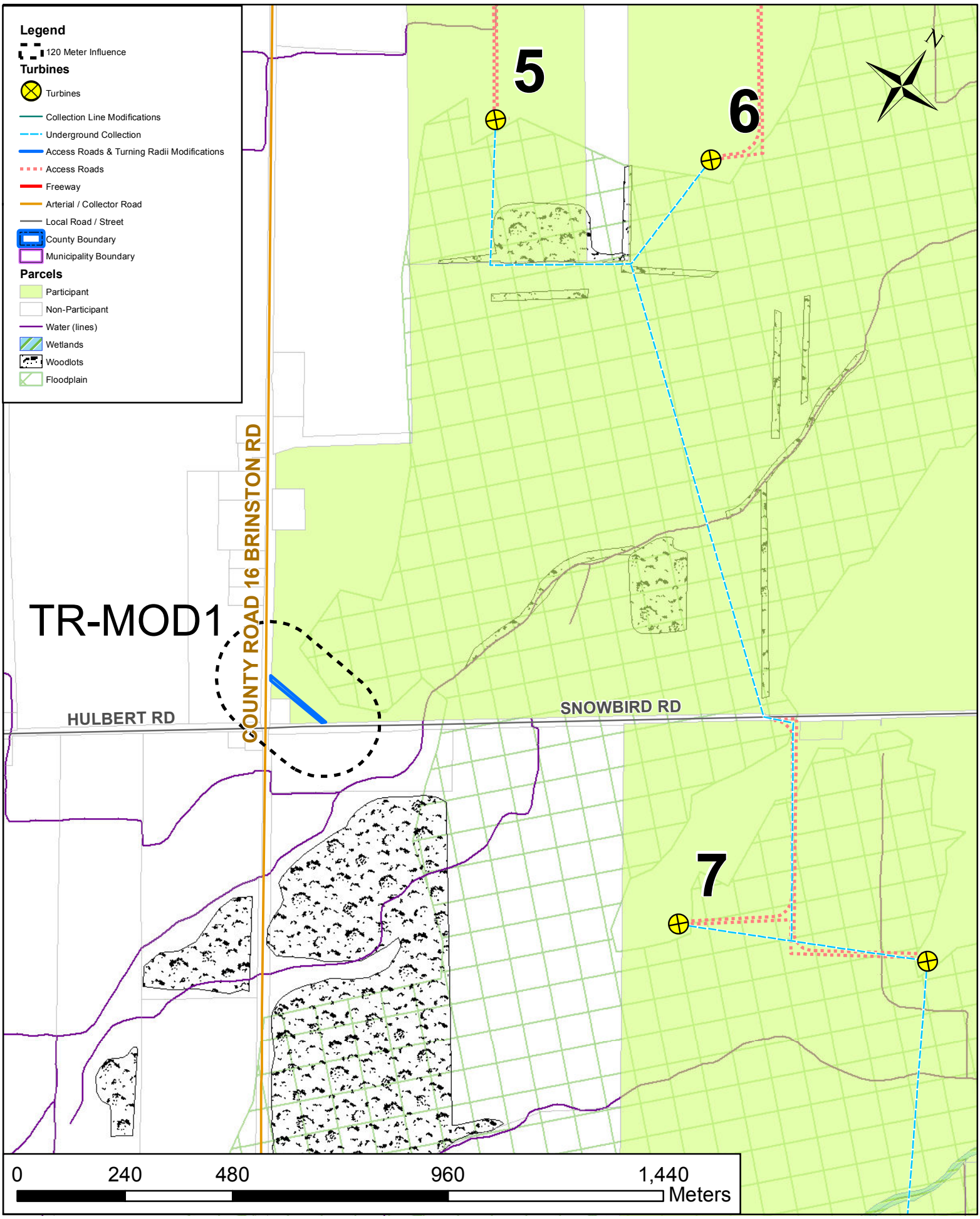
Prowind Canada. 2011c. Draft South Branch Wind Farm Water Assessment Report. 28 pp.

Figure 1

South Branch Wind Farm
Addendum Report September 2013



South Branch Wind Farm
Addendum Report September 2013



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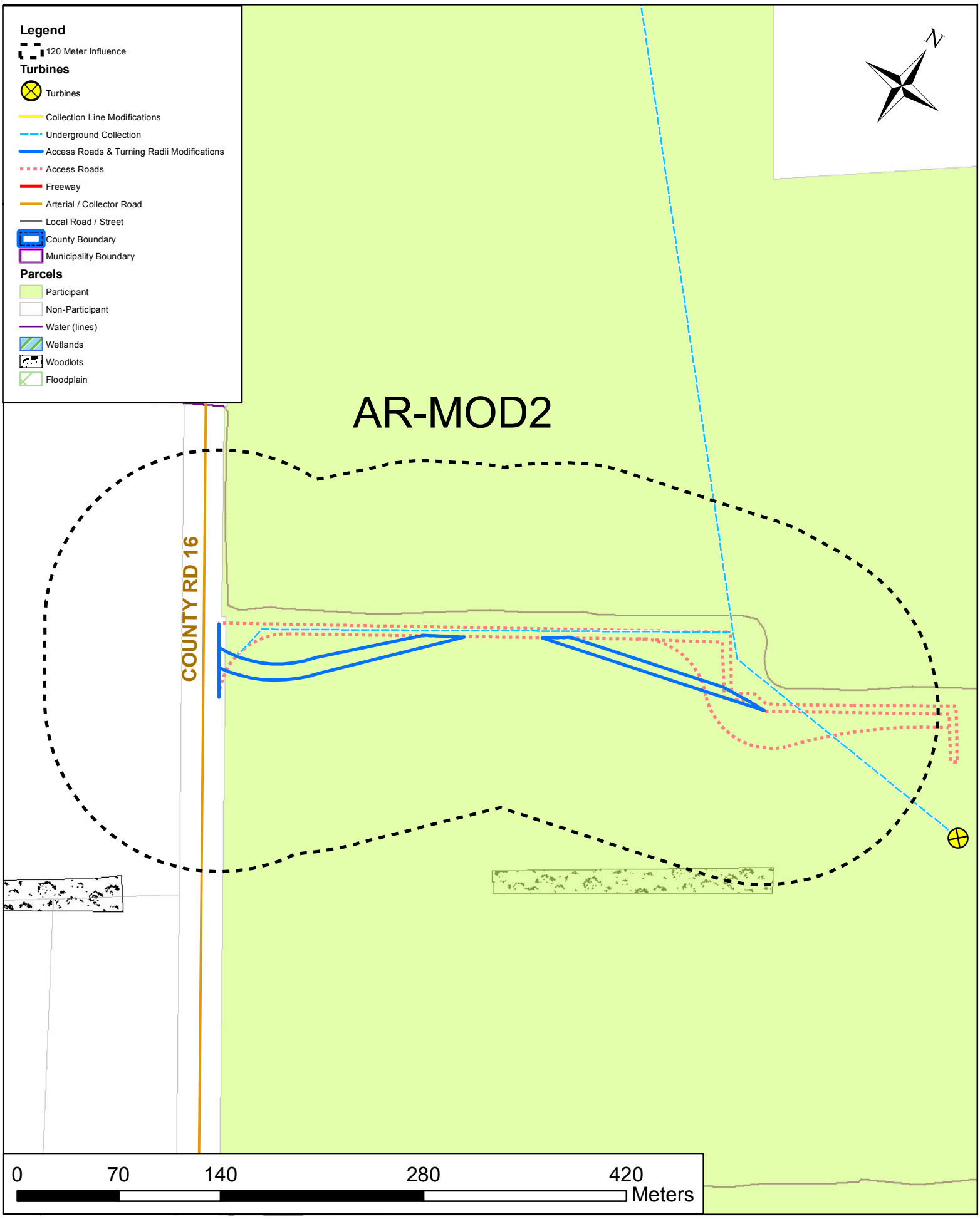

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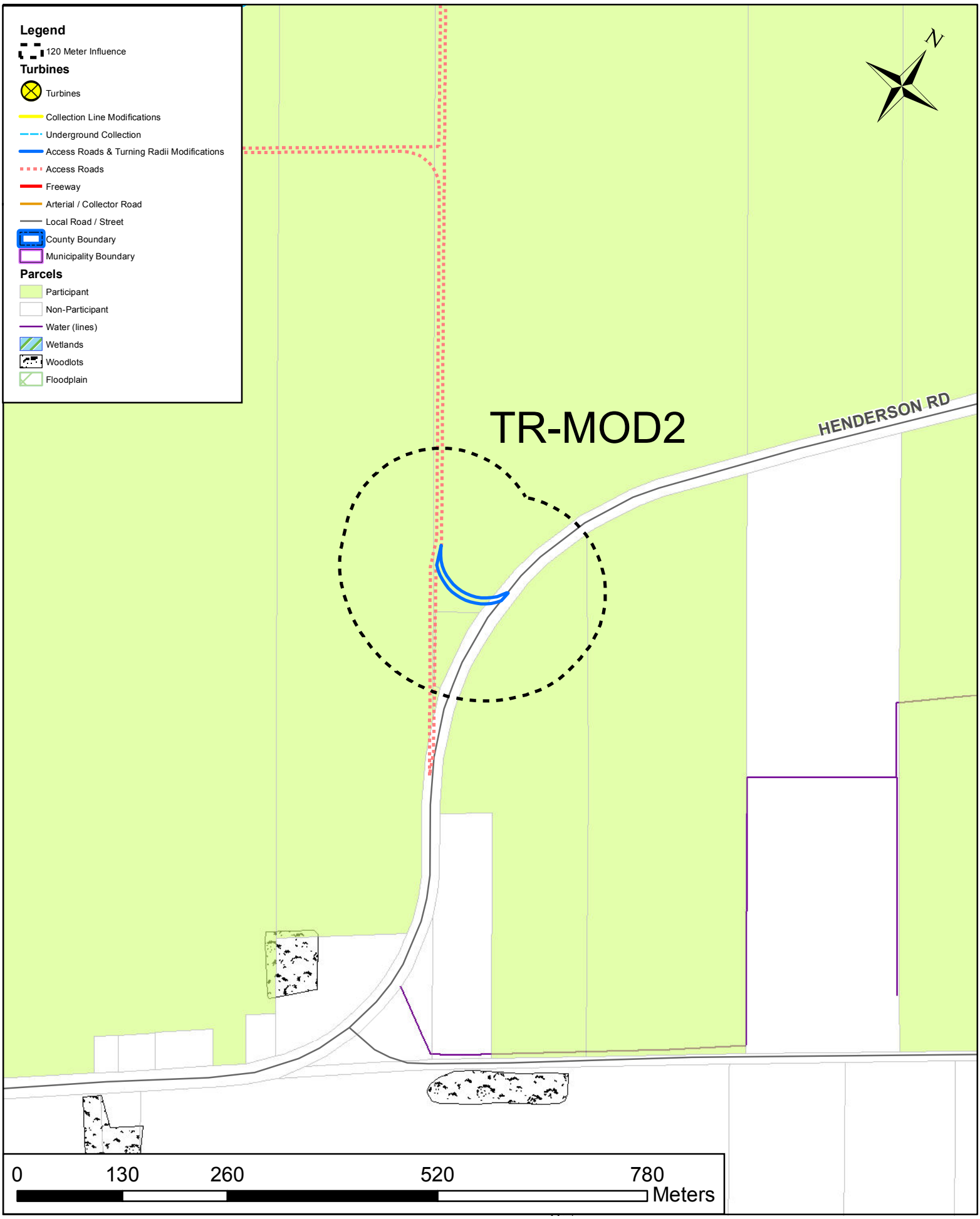
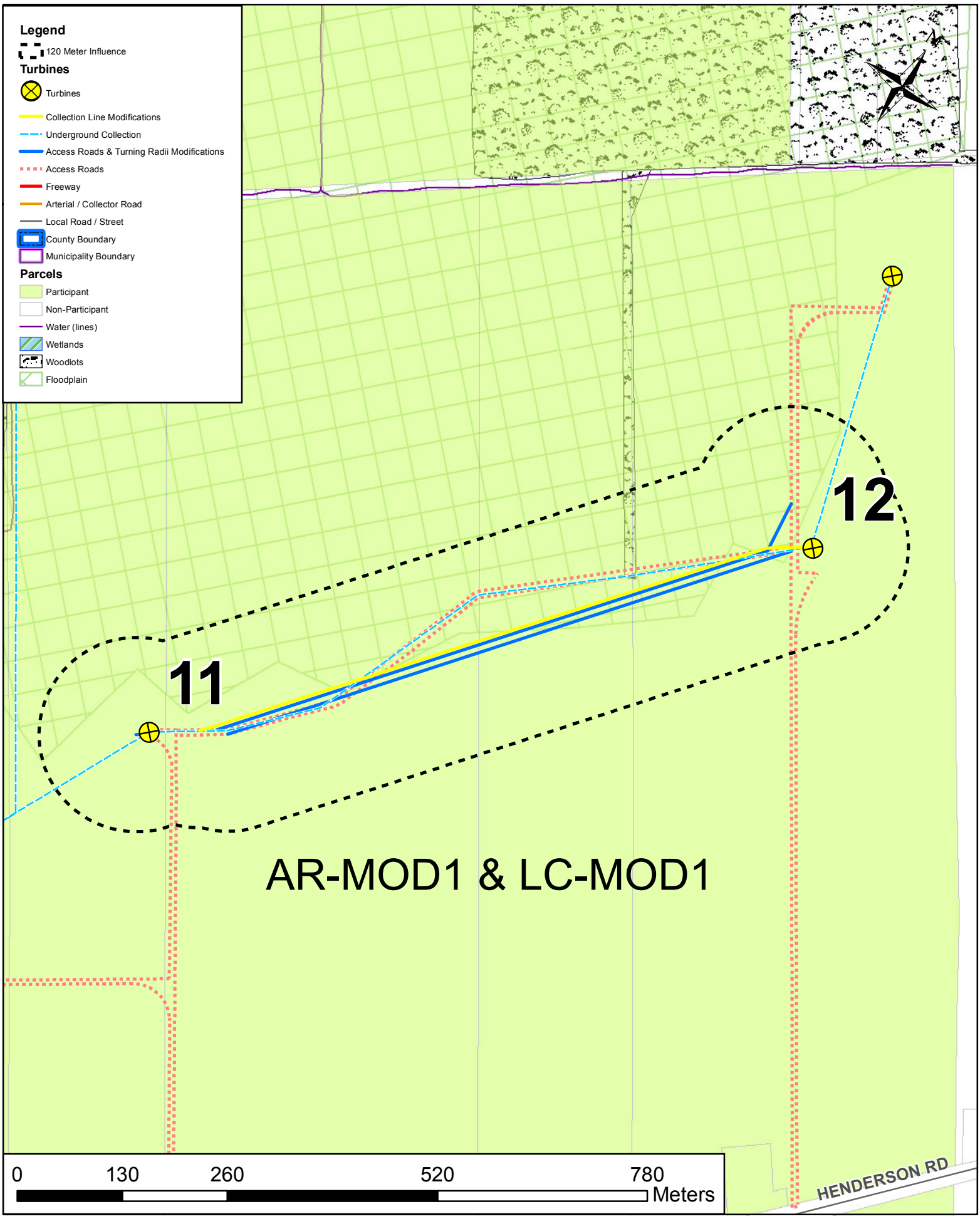


South Branch Wind Farm
Addendum Report September 2013



Attachment D
Stage 1 and 2 Archaeology Assessment for Modifications
MTCS Letter of Concurrence for Modifications

Ministry of Tourism, Culture and Sport

Culture Programs Unit
Programs and Services Branch
Culture Division
401 Bay Street, Suite 1700
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Ministre du Tourisme, de la Culture et du Sport

Unit des programmes culturels
Direction des programmes et des services
Division de culture
401, rue Bay, bureau 1700
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Ontario

Aug 12, 2013

Paul Racher (P007)
Archaeological Research Associates Ltd. - Etobicoke
154 Otonabee Kitchener ON N2C 1L7

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 2 Archaeological Assessment, South Branch Wind Farm – Additional Lands #2 (FIT-FT3B1IC), Multiple Lots and Concessions, Geographic Township of Matilda (Former Dundas County), Township of South Dundas, United Counties of Stormont, Dundas and Glengarry, Ontario", Dated Jul 30, 2013, Filed with MTCS Toronto Office on Aug 2, 2013, MTCS Project Information Form Number P007-546-2013, MTCS File Number HD00375

Dear Mr. Racher:

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 depicted in Map 2 and Maps 16 to 20 of the above titled report and recommends the following:

Judging from the results of the Stage 2 property assessment, the study area appears to be devoid of any significant archaeological remains. Based on these findings, ARA recommends that no further archaeological assessment be required within Areas 1–5.

In the event that the project location is modified in the future (i.e., it is altered to accommodate new proposed infrastructure), further archaeological work may be required. A Letter of Review and Acceptance into the Ontario Public Register of Archaeological Reports is requested, as provided for in Section 65.1 of the Ontario Heritage Act.

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,

Paige Campbell
Archaeology Review Officer

cc. Archaeology Licensing Officer
Jon VanDerZee,EDP Renewables North America LLC
Kristina Rudzki,Ministry of the Environment

[1]In 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.

Archaeological Research Associates Ltd.

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Stage 2 Archaeological Assessment
South Branch Wind Farm – Additional Lands #2 (FIT-FT3B1IC)
Multiple Lots and Concessions, Geographic Township of Matilda (Former Dundas County), Township of South Dundas, United Counties of Stormont, Dundas and Glengarry, Ontario

Prepared for
EDP Renewables North America LLC
110 Spadina Avenue, Suite 609
Toronto, ON M5V 2K4
Tel: (416) 502-9463
&
South Dundas Wind Farm LP
&
The Ministry of Tourism, Culture and Sport

By
Archaeological Research Associates Ltd.
154 Otonabee Drive
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Tel: (519) 804-2291 Fax: (519) 286-0493

Licenced under
P.J. Racher, M.A., CAHP
MTCS Licence #P007
Project #P007-546
PIF #P007-546-2013

30/07/2013

Original Report

EXECUTIVE SUMMARY

Under a contract awarded by EDP Renewables North America LLC in June 2013, Archaeological Research Associates carried out a Stage 2 archaeological assessment of lands with the potential to be impacted by the proposed South Branch Wind Farm in the Township of South Dundas, United Counties of Stormont, Dundas and Glengarry, Ontario. Specifically, the Stage 2 assessment encompassed additional lands (Areas 1–5) required for revised underground collector lines and other project infrastructure in the vicinity of Brinston. This report documents the background research and fieldwork involved in this assessment, and presents conclusions and recommendations pertaining to archaeological concerns within these areas. The assessment was completed as a component of a Renewable Energy Approval application, in compliance with the requirements set out in Section 22 of Ontario Regulation 359/09 made under the *Environmental Protection Act*.

The proponent, South Dundas Wind Farm LP, has secured a 30 MW contract to sell power to the Ontario Power Authority under the Feed-in-Tariff program (FIT-FT3B1IC), and has received their Renewable Energy Approval application in accordance with the requirements set out in Ontario Regulation 359/09 made under Part V.0.1 of the *Environmental Protection Act* (Horizon Wind Farms 2013). Development of the project began in 2007, and South Dundas Wind Farm LP acquired an interest in the project in Summer 2012 and is leading the continued development of the project. The proposed Class 4 wind facility will consist of up to 14 wind turbines, access roads, a substation, an operations and maintenance building (constructed or renovated), a storage shed, a combination of underground and above ground cabling to connect the turbines to the substation, and above ground cabling to connect the substation to the electrical utility line.

The majority of the project location for the South Branch Wind Farm was previously assessed. A Stage 1 assessment encompassing a 353 ha block of lands in the eastern part of the project location was conducted in April 2009 under licence #P058, PIF #P058-452-2009 (AMICK 2009a:5). Another Stage 1 assessment encompassing a 1,342.8 ha block of lands in the western part of the project location was conducted in April 2009 under licence #P058, PIF #P058-440-2009 (AMICK 2009b:6). These assessments identified numerous areas of archaeological potential, and the project location was recommended for Stage 2 assessment.

In December 2010 and from April–June 2011, Archaeological Research Associates Ld. carried out Stage 1 and 2 archaeological assessments of all previously un-assessed lands with the potential to be impacted by the original design of the project. The work was carried out under licence #P007, PIF #P007-264-2010 (Stage 1) and #P007-300-2011 (Stage 2). The results of the Stage 1 assessment indicated that the majority of the study area had clear potential for Pre-Contact and Euro-Canadian archaeological sites. The Stage 2 assessment, completed under optimal conditions, resulted in the identification of two Euro-Canadian findspots (the Doyle site; BfFu-4 and the Shaver Site; BfFu-5). The Shaver site (BfFu-5) was found to be of further cultural heritage value or interest, and was recommended for Stage 3 assessment. In order to avoid impacts to this site or its 20 m protective buffer, however, the proponent modified the project location (a buffer zone of 1.88 km now exists between the site and the project location).

Following the completion of the original investigations, it was determined that additional Stage 1 and 2 assessments were required for revised underground collector lines located in the vicinity of County Road 16 and Henderson Road. The majority of these lands were included in the earlier Stage 1 assessments conducted under licence #P058, PIF #P058-440-2009 and licence #P007, PIF #P007-264-2010, but a small parcel west of County Road 16 was not previously assessed. All of the remaining additional lands also required Stage 2 archaeological assessment. The Stage 1 and 2 archaeological assessments were conducted in December 2012 under licence #P007, PIF #P007-426-2012. The assessments comprised 1) a V-shaped corridor traversing County Road 16 (the 'western parcel'), 2) a rectilinear parcel south of Henderson Road (the 'central parcel'), and 3) a rectilinear corridor north of Henderson Road (the 'eastern parcel'). No archaeological materials were found in these areas, and Archaeological Research Associates Ltd. recommended that no further archaeological assessment be required within these areas.

In June 2013, Archaeological Research Associates Ltd. was informed that another Stage 2 assessment was required for five additional parcels of land located in the vicinity of Brinston (Areas 1–5; see Map 2). These lands were needed for revised underground collector lines and other proposed project infrastructure, and were included in the original Stage 1 assessment under licence #P058, PIF #P058-452-2009 (AMICK 2009a:5).

The Stage 2 archaeological assessment of Areas 1–5 was conducted in July 2013 under licence #P007, PIF #P007-54-2013. Legal permission to enter and conduct all necessary fieldwork activities on project lands was granted by the property owners. The assessment, completed under optimal conditions, did not result in the identification of any archaeological materials.

Based on these findings, Archaeological Research Associates Ltd. recommends that no further archaeological assessment be required within Areas 1–5. In the event that the project location is modified in the future (i.e., it is altered to accommodate new proposed infrastructure), further archaeological work may be required. A *Letter of Review and Acceptance into the Ontario Public Register of Archaeological Reports* is requested, as provided for in Section 65.1 of the *Ontario Heritage Act*.

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GLOSSARY OF ABBREVIATIONS

ARA – Archaeological Research Associates Ltd.
CHVI – Cultural Heritage Value or Interest
FIT – Feed-in Tariff
MTC – (Former) Ministry of Tourism and Culture
MTCS – Ministry of Tourism, Culture and Sport
PIF – Project Information Form
O. Reg. – Ontario Regulation
REA – Renewable Energy Approval
ROW – Right-of-Way

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1.0 PROJECT CONTEXT

1.1 Development Context

Under a contract awarded by EDP Renewables North America LLC in June 2013, ARA carried out a Stage 2 archaeological assessment of lands with the potential to be impacted by the proposed South Branch Wind Farm in the Township of South Dundas, United Counties of Stormont, Dundas and Glengarry, Ontario. Specifically, the Stage 2 assessment encompassed additional lands (Areas 1–5; see Map 2) required for revised underground collector lines and other project infrastructure in the vicinity of Brinston (see Appendix A). This report documents the background research and fieldwork involved in this assessment, and presents conclusions and recommendations pertaining to archaeological concerns within these areas. The assessment was completed as a component of a REA application, in compliance with the requirements set out in Section 22 of O. Reg. 359/09 made under the *Environmental Protection Act*.

The proponent, South Dundas Wind Farm LP, has secured a 30 MW contract to sell power to the Ontario Power Authority under the FIT program (FIT-FT3B1IC), and has received their Renewable Energy Approval application in accordance with the requirements set out in O. Reg. 359/09 made under Part V.0.1 of the *Environmental Protection Act* (Horizon Wind Farms 2013). Development of the project began in 2007, and South Dundas Wind Farm LP acquired an interest in the project in Summer 2012 and is leading the continued development of the project. The proposed Class 4 wind facility will consist of up to 14 wind turbines, access roads, a substation, an operations and maintenance building (constructed or renovated), a storage shed, a combination of underground and above ground cabling to connect the turbines to the substation, and above ground cabling to connect the substation to the electrical utility line.

The majority of the project location for the South Branch Wind Farm was previously assessed (see Section 1.3.1). Following the completion of the original investigations, ARA was informed that another Stage 2 assessment was required for five additional parcels of land located in the vicinity of Brinston (Areas 1–5). These lands were needed for revised underground collector lines and other proposed project infrastructure, and were included in the original Stage 1 assessment under licence #P058, PIF #P058-452-2009 (AMICK 2009a:5).

The study area for this assessment therefore comprises Areas 1–5, which have a total area of 3.99 ha (see Map 1–Map 2). Specifically, these lands include 1) a V-shaped parcel northwest of Henderson Road (Area 1), 2) a trapezoidal parcel north of Henderson Road (Area 2), 3) another trapezoidal parcel north of Henderson Road (Area 3), 4) an oval parcel east of Brinston Road (Area 4), and 5) a rhomboidal parcel north of Snowbird Road (Area 5). All of these parcels comprise portions of recently cultivated agricultural lands, save for a small part of Area 1 which traverses the Henderson Road ROW. In legal terms, the parcels fall on multiple lots and concessions in the Geographic Township of Matilda (former Dundas County) (see Table 1).

Table 1: Locations of Assessed Parcels

Area	Lot	Concession
1	14	6
2	14	6
3	13	6
4	18	5
5	18	8

The Stage 2 archaeological assessment was conducted in July 2013 under licence #P007, PIF #P007-546-2013. Legal permission to enter and conduct all necessary fieldwork activities on project lands was granted by the property owners. In compliance with the objectives set out in Section 2.0 of the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:27–41), this Stage 2 archaeological assessment was carried out in order to:

- Empirically document all archaeological resources on the properties;
- Determine whether the properties contains resources requiring further assessment; and
- Recommend appropriate Stage 3 assessment strategies for identified archaeological sites.

The assessments were conducted in accordance with the provisions of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18. All notes, photographs and records pertaining to the project are currently housed in ARA's processing facility located at 154 Otonabee Drive, Kitchener. Subsequent long-term storage will occur at ARA's head office located at 97 Gatewood Road, Kitchener.

The MTCS is asked to review the results and recommendations presented in this report and provide their endorsement through a *Letter of Review and Acceptance into the Ontario Public Register of Archaeological Reports*.

1.2 Historical Context

After a century of archaeological work in southern Ontario, scholarly understanding of the historic usage of lands along the St. Lawrence River has become very well-developed. What follows is a detailed summary of the archaeological cultures that have settled in the vicinity of the study area over the past 11,000 years; from the earliest Palaeo-Indian hunters to the most recent Euro-Canadian farmers.

1.2.1 Pre-Contact

1.2.1.1 Palaeo-Indian Period

The first documented evidence of occupation in southern Ontario dates to around 9000 BC, after the retreat of the Wisconsinan glaciers and the formation of Lake Algonquin, Early Lake Erie and Early Lake Ontario (Karrow and Warner 1990; Jackson et al. 2000:416–419). At that time small Palaeo-Indian bands moved into the region, leading mobile lives based on the communal hunting of large game and the collection of plant-based food resources (Ellis and Deller 1990:38; MCL 1997:34). Current understanding suggests that Palaeo-Indian peoples ranged over very

wide territories in order to live sustainably in a post-glacial environment with low biotic productivity. This environment changed considerably during this period, developing from a sub-arctic spruce forest to a boreal forest dominated by pine (Ellis and Deller 1990:52–54, 60).

An Early Palaeo-Indian period (ca. 9000–8400 BC) and a Late Palaeo-Indian period (ca. 8400–7500 BC) are discernable amongst the lithic spear and dart points. Early points are characterized by grooves or 'flutes' near the base while the later examples lack such fluting. All types would have been used to hunt caribou and other 'big game'. Archaeological sites from both time-periods typically served as small campsites or 'way-stations' (occasionally with hearths or fire-pits), where tool manufacture/maintenance and hide processing would have taken place. For the most part, these sites tend to be small (less than 200 sq. m) and ephemeral (Ellis and Deller 1990:51–52, 60–62). Many parts of the Palaeo-Indian lifeway remain unknown.

1.2.1.2 Archaic Period

Beginning in the early 8th millennium BC, the biotic productivity of the environment began to increase as the climate warmed and southern Ontario was colonized by deciduous forests. This caused the fauna of the area to change as well, and ancient peoples developed new forms of tools and alternate hunting practices to better exploit both animal and plant-based food sources. These new archaeological cultures are referred to as 'Archaic'. Thousands of years of gradual change in stone tool styles allows for the recognition of Early (7500–6000 BC), Middle (6000–2500 BC) and Late Archaic periods (2500–900 BC) (MCL 1997:34).

The Early and Middle Archaic periods are characterized by substantial increases in the number of archaeological sites and a growing diversity amongst stone tool types and exploited raw materials. Notable changes in Archaic assemblages include a shift to notched or stemmed projectile points, a growing prominence of net-sinkers (notched pebbles) and an increased reliance on artifacts like bone fish hooks and harpoons. In addition to these smaller items, archaeologists also begin to find evidence of more massive wood working tools such as ground stone axes and chisels (Ellis et al. 1990:65–67).

Towards the end of the Middle Archaic (ca. 3500 BC), the archaeological evidence suggests that populations were 1) increasing in size, 2) paying more attention to ritual activities, 3) engaging in long distance exchange (e.g. in items such as copper) and 4) becoming less mobile (Ellis et al. 1990:93; MCL 1997:34). Late Archaic peoples typically made use of shoreline/riverine sites located in rich environmental zones during the spring, summer and early fall, and moved further inland to deer hunting and fruit-gathering sites during late fall and winter (Ellis et al. 1990:114).

During the Late Archaic these developments continued, and new types of projectile points appeared along with the first true cemeteries. Excavations of burials from this time-frame indicate that human remains were often cremated and interred with numerous grave goods, including items such as projectile points, stone tools, red ochre, materials for fire-making kits, copper beads, bracelets, beaver incisors, and bear maxilla masks (Ellis et al. 1990:115–117). Interestingly, these true cemeteries may have been established in an attempt to solidify territorial claims, linking a given band or collection of bands to a specific geographic location.

From the tools unearthed at Archaic period sites it is clear that these people had an encyclopaedic understanding of the environment that they inhabited. The number and density of the sites that have been found suggest that the environment was exploited in a successful and sustainable way over a considerable period of time. The success of Archaic lifeways is attested to by clear evidence of steady population increases over time. Eventually, these increases set the stage for the final period of Pre-Contact occupation—the Woodland Period (Ellis et al. 1990:120).

1.2.1.3 Early and Middle Woodland Periods

The beginning of the Woodland period is primarily distinguished from the earlier Archaic by the widespread appearance of pottery. Although this difference stands out prominently amongst the archaeological remains, it is widely believed that hunting and gathering remained the primary subsistence strategy throughout the Early Woodland period (900–400 BC) and well into the Middle Woodland period (400 BC–AD 600). In addition to adopting ceramics, communities also grew in size during this period and participated in developed and widespread trade relations (Spence et al. 1990; MCL 1997:34).

Two distinct regional traditions developed in the vicinity of the study area during the Early Woodland period: 1) the Meadowood complex, located in southern Ontario, southern Quebec and western New York; and 2) the Middlesex complex, located primarily in New York, New England and along the St. Lawrence River. Peoples associated with both of these archaeological complexes would have made use of this locality during the 1st millennium BC.

The Meadowood archaeological culture (900–400 BC) is characterized by distinctive Meadowood preforms, side-notched Meadowood points and Vinette 1 ceramics (thick and crude handmade pottery with cord-marked decoration). Meadowood peoples are believed to have been organized in bands of roughly 35 people, and some of the best documented sites are fall camps geared towards the hunting of deer and the gathering of nuts (Spence et al. 1990:128–137).

Evidence of the Middlesex archaeological culture (450–50 BC) originates primarily from burial mounds and the associated grave goods found within. The artifactual assemblage is characterized by blocked-end tubes (long and slender tubes made of ground and polished Ohio 'firestone', possibly used as pipes) and a variety of large bifacially worked items (e.g. long leaf-shaped blades, long stemmed blades, etc.). On the whole, Middlesex archaeological remains share many similarities to the Adena and Hopewell complexes from southern Ohio, likely resulting from the exchange of ideas and materials. Scholars believe that as our understanding of Middlesex 'culture' grows, it will become increasingly apparent that the remains represent a mortuary tradition shared by numerous distinct hunter-gatherer groups, rather than any unified cultural group (Spence et al. 1990:138–142).

Ceramic traditions continued to develop during the subsequent Middle Woodland period, and three distinct archaeological cultures emerged in southern Ontario: 'Point Peninsula' north and northeast of Lake Ontario, 'Couture' near Lake St. Clair and 'Saugeen' in the rest of southwestern Ontario (see Map 3). These cultures all shared a similar method of decorating pottery, using either dentate or pseudo-scallop shell stamp impressions, but they differed in terms of preferred vessel shape, zones of decoration and surface finish (Spence et al. 1990:142–43).

The Point Peninsula complex (400 BC–AD 900) extended through south-central and eastern Ontario, southern Quebec, western and northern New York and northwestern Vermont. It is characterized mainly by small camp sites and seasonal village sites that would have been repeatedly used over the years. Point Peninsula material culture is distinguished by the use of Vinette 2 ceramics (coil-built pottery with dentate or pseudo-scallop decoration), a wide variety of chipped stone tools, and influences from northern Ontario and the Hopewell area to the south (Spence et al. 1990:157–158). Hopewellian influence, for example, can be seen in the continued use of burial mounds (e.g. the Serpent Mounds near Peterborough) until ca. AD 400 (Wright 1972:44–51).

During the Middle to Late Woodland transition (AD 600–900), the first rudimentary evidence of maize (corn) horticulture appears in southern Ontario. Based on the available archaeological evidence, which comes primarily from the vicinity of the Grand and Credit Rivers, this pivotal development was not particularly widespread (Fox 1990:171, Figure 6.1). The adoption of maize horticulture instead appears to be linked to the emergence of the Princess Point complex, whose material remains include decorated ceramics (combining cord roughening, impressed lines and punctuate designs), triangular projectile points, T-based drills, steatite and ceramic pipes, and ground stone chisels and adzes (Fox 1990:174-188).

The distinctive artifacts and horticultural practices of Princess Point peoples have led to the suggestion that they were directly ancestral to the later Iroquoian-speaking populations of southern Ontario (Warrick 2000:427). Although Princess Point sites are absent in the immediate vicinity of the study area, a regional variant has been identified near Cornwall at the Ault Park site (see Map 4). Despite the fact that the pottery from Ault Park shares many similarities with Princess Point sites to the west, there are clear differences indicative of a level of continuity with the earlier Point Peninsula complex (Fox 1990:183–186).

1.2.1.4 Late Woodland Period

In the Late Woodland period (ca. AD 900–1600), the practice of maize horticulture spread beyond the western end of Lake Ontario, allowing for population increases which in turn led to larger settlement sizes, higher settlement density and increased social complexity among the peoples involved. These developments are believed to be linked to the spread of Iroquoian-speaking populations in the area; ancestors of the historically-documented Huron, Neutral, St. Lawrence Iroquois and Haudenosaunee Nations. Other parts of southern Ontario, including the Georgian Bay littoral, the Bruce Peninsula and the vicinity of Lake St. Clair, were inhabited by Algonkian-speaking peoples, who were much less agriculturally-oriented. Late Woodland archaeological remains from the greater vicinity of the study area show three major stages of cultural development prior to European contact: 'Early Iroquoian', 'Middle Iroquoian' and 'Late Iroquoian' (Dodd et al. 1990; Lennox and Fitzgerald 1990; Williamson 1990).

Early Iroquoians (AD 900–1300) lived in small villages (ca. 0.4 ha) of between 75 and 200 people, and each settlement consisted of four or five longhouses up to 15 m in length. The houses contained central hearths and pits for storing maize (which made up 20–30% of their diet), and the people produced distinctive pottery with decorative incised rims (Warrick 2000:434–438). The best documented Early Iroquoian culture in the local area is the Glen Meyer complex, which is characterized by well-made and thin-walled pottery, ceramic

pipes, gaming discs, and a variety of stone, bone, shell and copper artifacts (Williamson 1990:295–304).

Over the next century (AD 1300–1400), Middle Iroquoian culture became dominant in southwestern Ontario, and distinct 'Uren' and 'Middleport' stages of development have been identified. Both houses and villages dramatically increased in size during this time: longhouses grew to as much as 33 m in length, settlements expanded to 1.2 ha in size and village populations swelled to as many as 600 people. Middle Iroquoian villages were also better planned, suggesting emerging clan organization, and most seem to have been occupied for perhaps 30 years prior to abandonment (Dodd et al. 1990:356–359; Warrick 2000:439–446).

During the Late Iroquoian period (AD 1400–1600), the phase just prior to widespread European contact, it becomes possible to differentiate between the archaeologically-represented groups that would become the Huron, Neutral and St. Lawrence Iroquois. The study area itself lies within the territorial boundaries of the St. Lawrence Iroquois, who appear to have been organized into six primary regional groups/clusters. Specifically, the study area falls within the Upper St. Lawrence River cluster near Prescott, Ontario (see Map 5). The sites in this area consist of either large inland villages (1.6 to 3.25 ha in size) or small multi-purpose campsites located along the St. Lawrence River and other waterways (e.g., fishing stations).

Overall, St. Lawrence Iroquois material culture is similar to other Late Woodland Iroquoian groups. It is characterized by finely manufactured and decorated ceramics (with circular punctuates, chevron designs, high collars and pinched bases), a lack of chipped lithic tools and a wide variety of bone and antler artifacts. Many of the village sites also exhibit evidence of expansion associated with a large population increase or influx (Jamieson 1990:385–402).

1.2.2 Early Contact

1.2.2.1 European Explorers

In 1534, Jacques Cartier became the first European to travel the St. Lawrence River. At that time, he encountered 300 St. Lawrence Iroquoians at the tip of the Gaspé Peninsula. Cartier travelled further up the St. Lawrence River the following year, and he found two permanent settlements at the present locations of Quebec City and Montreal. Cartier's accounts of these people are the only records of the St. Lawrence Iroquois at the time of European contact (Jamieson 1990:385).

When Samuel de Champlain came to the St. Lawrence in 1603, the St. Lawrence Iroquois had disappeared and the land was occupied by Algonkian-speaking Anishinabeg peoples. The disappearance of the St. Lawrence Iroquois has been attributed to the introduction of European disease and warfare with other Aboriginal groups. It has also been suggested that the St. Lawrence Iroquois were attacked and dispersed by the Five Nations Iroquois. The St. Lawrence Iroquois refugees proceeded to join with Huron and Anishinabeg populations; a large influx at Huron villages in the Trent Valley is suggested by the prevalence of St. Lawrence Iroquoian pottery in newly-expanded habitation areas (Jamieson 1990:403).

The first European to venture deeper into what would become southern Ontario was Étienne Brûlé, who was sent by Samuel de Champlain in the summer of 1610 to accomplish three goals: 1) to consolidate an emerging friendship between the French and the First Nations, 2) to learn their languages, and 3) to better understand their unfamiliar customs. Other Europeans would subsequently be sent by the French to train as interpreters. These men became c*oureurs de bois*, "living Indian-style ... on the margins of French society" (Gervais 2004:182). Such 'woodsmen' played an essential role in all later communications with the First Nations.

Champlain himself made two trips to Ontario: in 1613, he journeyed up the Ottawa River searching for the North Sea, and in 1615/1616, he travelled up the Mattawa River and descended to Lake Nipissing and Lake Huron to explore Huronia (Gervais 2004:182–185). He learned about many First Nations groups during his travels, including prominent Iroquoian-speaking peoples such as the Wendat (Huron), Petun (Tobacco) and '*la nation neutre*' (the Neutrals), and a variety of Algonkian-speaking Anishinabeg bands.

Champlain's *Carte de la Nouvelle France* (1632) encapsulates his accumulated knowledge of the area (see Map 6). Although the distribution of the Great Lakes is clearly an abstraction in this early map, important details concerning the terminal Late Woodland occupation of southern Ontario are discernable. The lack of settled groups 'north' of the St. Lawrence River is abundantly clear, and it seems likely that Anishinabeg bands moved into the area following the fall of the St. Lawrence Iroquois. Nicholas Sanson's *Le Canada, ou Nouvelle France* (1656) confirms this cultural shift, as Algonquin bands such as the *Tonthataronon* and *Otchiahen* are depicted in the vicinity of the study area at this time (see Map 7).

1.2.2.2 Five Nations Invasion

The first half of the 17th century saw a marked increase in trading contacts between the Aboriginal peoples and European colonists. These trading contacts, however, eventually led to increasing factionalism and tension between the First Nations as different groups vied for control of the lucrative fur trade (itself a subject of competition between the French and British). In what would become Ontario, the Huron, the Petun, and their Anishinabeg trading partners allied themselves with the French. In what would become New York, the League of the Haudenosaunee (the Five Nations Iroquois at that time) allied themselves with the British. The latter alliance may have stemmed from Champlain's involvement in Anishinabeg and Huron attacks against Iroquoian strongholds in 1609 and 1615, which engendered enmity against the French (Lajeunesse 1960:xxix). Interposed between the belligerents, the members of the Neutral Nation refused to become involved in the conflict.

Numerous military engagements occurred between the two opposing groups during the first half of the 17th century, as competition over territories rich in fur-bearing animals increased. These tensions boiled over in the middle of the 17th century, leading to full-scale regional warfare (MNCFN 2010:5). In a situation likely exacerbated by epidemics brought by the Europeans and the decimation of their population, a party of roughly 1,000 Mohawk and Seneca warriors set upon Huronia in March 1649. The Iroquois desired to remove the Huron Nation altogether, as they were a significant obstacle to controlling the northern fur trade (Hunt 1940:91–92).

The Huron met their defeat in towns such as Saint Ignace and Saint Louis (Sainte-Marie was abandoned and burned by the Jesuits in the spring of 1649). Those that were not killed were either adopted in the Five Nations as captives or dispersed to neighbouring regions and groups (Ramsden 1990:384). The Petun shared a similar fate, and the remnants of the affected groups formed new communities outside of the disputed area, settling in Quebec (modern-day Wendake), in the area of Michilimackinac and near Lake St. Clair (where they were known as the Wyandot).

Anishinabeg populations from southern Ontario, including the Ojibway, Odawa, and Pottawatomi, fled westward to escape the Iroquois (Schmalz 1977:2). The Neutral were targeted in 1650 and 1651, and the Iroquois took multiple frontier villages (one with over 1,600 men) and numerous captives (Coyne 1895:18). The advance of the Iroquois led to demise of the Neutral Nation as a distinct cultural entity (Lennox and Fitzgerald 1990:456).

For the next four decades, southern Ontario remained an underpopulated wilderness (Coyne 1895:20). This rich hunting ground was exploited by the Haudenosaunee to secure furs for trade with the Dutch and the English, and settlements were established along the north shore of Lake Ontario at places like Teiaiagon on the Humber River and Ganatswekwyagon on the Rouge River (Williamson 2008:51). The Haudenosaunee are also known to have traded with the northern Anishinabeg during the second half of the 17th century (Smith 1987:19).

Due to their mutually violent history, the Haudenosaunee did not permit French explorers and missionaries to travel directly into southern Ontario for much of the 17th century. Instead, they had to journey up the Ottawa River to Lake Nipissing and then paddle down the French River into Georgian Bay (Lajeunesse 1960:xxix). New France was consequently slow to develop in southern Ontario, at least until the fall of several Iroquoian strongholds in 1666 and the opening of the St. Lawrence and Lake Ontario route to the interior (Lajeunesse 1960:xxxii).

1.2.2.3 Anishinabeg Influx

The fortunes of the Five Nations began to change in the 1690s, as disease and casualties from battles with the French took a toll on the formerly-robust group (Smith 1987:19). On July 19, 1701, the Haudenosaunee ceded lands in southern Ontario to King William III with the provision that they could still hunt freely in their former territory (Coyne 1895:28). However, this agreement appears to have lacked any sort of binding formality.

According to the traditions of the Algonkian-speaking Anishinabeg, Ojibway, Odawa and Potawatomi bands began to mount an organized counter-offensive against the Iroquois in the late 17th century (MNCFN 2010:5). Around the turn of the 18th century, the Anishinabeg of the Great Lakes expanded into Haudenosaunee lands, and attempted to trade directly with the French and the English (Smith 1987:19). This led to a series of battles between the opposing groups, in which the Anishinabeg were more successful (Coyne 1895:28).

Haudenosaunee populations subsequently withdrew into New York State, and Anishinabeg bands established themselves in southern Ontario. Many of these bands were mistakenly grouped together by the immigrating Europeans under the generalized designations of ‘Chippewa/ Ojibway’ and ‘Mississauga’. ‘Mississauga’, for example, quickly became a term applied to many

Algonkian-speaking groups around Lake Erie and Lake Ontario (Smith 1987:19), despite the fact that the Mississaugas were but one part of the larger Ojibway Nation (MNCFN 2010:3).

The Anishinabeg are known to have taken advantage of the competition between the English and French over the fur trade, and they were consequently well-supplied with European goods. The Mississaugas, for example, traded primarily with the French and received "everything from buttons, shirts, ribbons to combs, knives, looking glasses, and axes" (Smith 1987:22). The British, on the other hand, were well-rooted in New York State and enjoyed mutually beneficial relations with the Haudenosaunee.

As part of this influx, many members of the Algonkian-speaking Ojibway, Potawatomi and Odawa First Nations came back to Lake Huron littoral. Collectively, these people came to be known as the Chippewas of Saugeen Ojibway Territory (also Saugeen Ojibway Nation). These Algonkian-speakers established themselves in the Bruce Peninsula, all of Bruce and Grey Counties, and parts of Huron, Dufferin, Wellington, and Simcoe Counties (Schmalz 1977:233).

Throughout the 1700s and into the 1800s, Anishinabeg populations hunted, fished, gardened and camped along the rivers, floodplains and forests of southern Ontario (Warrick 2005:2). However, their 'footprint' was exceedingly light, and associated archaeological sites are both rare and difficult to detect. Historical records often play a pivotal role in reconstructing Anishinabeg lifeways during the timeframe, as the first European colonists often wrote about the locations of Aboriginal camps and hunting grounds.

Historical maps from the 18th century shed valuable light on the cultural landscape of the Early Contact period. H. Popple's *A Map of the British Empire in America* (1733), for example, does not show any prominent settlements in the vicinity of the study area, which is a result of the ephemeral environmental impact of the mobile Ojibway (see Map 8).

1.2.2.4 Relations and Ambitions

The late 17th and early 18th centuries bore witness to the continued growth and spread of the fur trade across all of what would become the Province of Ontario. The French, for example, established and maintained trading posts along the Upper Great Lakes, offering enticements to attract fur traders from the First Nations. Even further north, Britain's Hudson Bay Company dominated the fur trade. Violence was common between the two parties, and peace was only achieved with the Treaty of Utrecht in 1713 (Ray 2013). Developments such as these resulted in an ever-increasing level of contact between European traders and local Aboriginal communities.

As the number of European men living in Ontario increased, so too did the frequency of their relations with Aboriginal women. Male employees and former employees of French and British companies began to establish families with these women, a process which resulted in the ethnogenesis of a distinct Aboriginal people: the Métis. Comprised of the descendants of those born from such relations (and subsequent intermarriage), the Métis emerged as a distinct Aboriginal people during the 1700s (MNO 2011).

Métis settlements developed along freighting waterways and watersheds, and were tightly linked to the spread and growth of the fur trade. These settlements were part of larger regional communities, connected by "the highly mobile lifestyle of the Métis, the fur trade network, seasonal rounds, extensive kinship connections and a shared collective history and identity" (MNO 2011).

In 1754, hostilities over trade and the territorial ambitions of the French and the British led to the Seven Years' War (often called the French and Indian War in North America), in which many Anishinabeg bands fought on behalf of the French. After the French surrender in 1760, these bands adapted their trading relationships accordingly, and formed a new alliance with the British (Smith 1987:22). In addition to cementing British control over the Province of Quebec, the Crown's victory over the French also proved pivotal in catalyzing the Euro-Canadian settlement process. The resulting population influx caused the demographics of many areas to change considerably.

R. Sayer and J. Bennett's *General Map of the Middle British Colonies in America* (1776) provides an excellent view of the ethnic landscape of southern Ontario prior to the widespread arrival of European settlers. This map clearly depicts the St. Lawrence River, the South Branch River, and virtually untouched lands of southeastern Ontario (see Map 9).

1.2.3 The Euro-Canadian Era

1.2.3.1 British Colonialism

With the establishment of absolute British control came a new era of land acquisition and organized settlement. In the *Royal Proclamation* of 1763, which followed the Treaty of Paris, the British government recognized the title of the First Nations to the land they occupied. In essence, the 'right of soil' had to be purchased by the Crown prior to European settlement (Lajeunesse 1960:cix). Numerous treaties and land surrenders were accordingly arranged by the Crown, and great swaths of territory were acquired from the Ojibway and other First Nations. These first purchases established a pattern "for the subsequent extinction of Indian title" (Gentilcore and Head 1984:78).

The first land purchases in Ontario took place along the shores of Lake Ontario and Lake Erie, as well as in the immediate 'back country'. Such acquisitions began in August 1764, when a strip of land along the Niagara River was surrendered by Six Nations, Chippewa and Mississauga chiefs (NRC 2010a). Although many similar territories were purchased by the Crown in subsequent years, it was only with the conclusion of the American Revolutionary War (1775–1783) that the British began to feel a pressing need for additional land. In the aftermath of the conflict, waves of United Empire Loyalists came to settle in the Province of Quebec, driving the Crown to seek out property for those who had been displaced. This influx had the devastating side effect of sparking the slow death of the fur trade, which was a primary source of income for many First Nations groups.

By the mid-1780s, the British recognized the need to 1) secure a military communication route from Lake Ontario to Lake Huron other than the vulnerable passage through Niagara, Lake Erie and Lake St. Clair; 2) acquire additional land for the United Empire Loyalists; and 3) modify the

administrative structure of the Province of Quebec to accommodate future growth. The first two concerns were addressed through the negotiation of numerous 'land surrenders' with Anishinabeg groups north and west of Lake Ontario, and the third concern was mitigated by the establishment of the first administrative districts in the Province of Quebec.

In response to the second need, Governor Frederick Haldimand sent Captain William Crawford to the Bay of Quinte and the St. Lawrence River to obtain legal titles to areas that the Crown wanted to open for settlement. On October 9, 1783, Crawford finalized the negotiations with several Mississauga chiefs, and lands from "Toniato or Onagara River (on the St. Lawrence River) to a river in the Bay of Quinte within eight leagues of the bottom of the Bay including all the islands, extending back from the lake so far as a man can travel in a day" were exchanged for guns, gunpowder, twelve laced hats and red cloth (NRC 2010a). These 'Crawford Purchases' set the stage for European settlement along the north shore of the St. Lawrence River.

Major Holland began surveying these lands in 1784, and due to the urgency of settlement for those "strong in British principles," the newly established townships were not even named, but were assigned numbers instead (Leavitt 1879:17). The westernmost surveyed territory was originally called Township No. 8 (Elizabethtown), while the easternmost was designated as Township No. 1 (Charlottenburg). This numbering system was somewhat erroneous, as the easternmost Township of Lancaster (the Sunken Township) was also part of the original survey but was otherwise omitted due to the fact that its lands had "no value" (Leavitt 1879:17).

These new lands were granted to Loyalists "in partial recompense for the losses sustained in adhering to the old flag" and to provide a "bulwark against the spread of republicanism in North America" for the Crown (Leavitt 1879:17). The extent of the grants varied according to rank: field-officers received 5,000 acres; captains, 3,000 acres; junior officers (subalterns), 2,000 acres; and privates, 200 acres.

For the most part, the precise location of the granted land was determined by chance. Lots were numbered on small slips of paper and placed in a hat, and each soldier made his draw and claimed his new land (Carter 1905:37–38; McKenzie 1967:9). Every private, in addition to receiving 200 acres, was also granted 50 additional acres for his wife and each child. The children, in turn, were each entitled to a grant of 200 acres when they turned 21. Through this arrangement, the majority of the inland townships (e.g. Mountain and Winchester) ended up in the possession of the descendants of the United Empire Loyalists (Carter 1905:38).

The initial settlement of the St. Lawrence River took place under the direction of Sir John Johnson, whose regiment (the King's Royal Rangers) was granted land in the first five townships west of Montreal. The next three townships, including the Township of Matilda, were set aside for Major Edward Jessup's regiment (the Loyal Rangers), while a third group went farther west (McKenzie 1967:7). The study area itself falls within the boundaries of Township No. 5 (later the Township of Matilda in Dundas County). The survey of Dundas County, initiated by Major Holland, was later continued by Steichmann and Tewit (Croil 1972:128).

On July 24, 1788, Sir Guy Carleton, Baron of Dorchester and Governor-General of British North America, divided the Province of Quebec into the administrative districts of Hesse, Nassau, Mecklenburg and Lunenburg (Archives of Ontario 2009). The vicinity of the study area fell within the Lunenburg District at this time, which comprised the easternmost part of what would become southern Ontario. According to early historians, "this division was purely conventional and nominal, as the country was sparsely inhabited … the necessity for minute and accurate boundary lines had not become pressing" (Mulvany et al. 1885:13).

Further change came in December 1791, when the Parliament of Great Britain's *Constitutional Act* created the Provinces of Upper Canada and Lower Canada from the former Province of Quebec. Colonel John Graves Simcoe was appointed as Lieutenant-Governor of Upper Canada, and he became responsible for governing the new province, directing its settlement and establishing a constitutional government modelled after that of Britain (Coyne 1895:33).

Simcoe initiated several schemes to populate and protect the newly-created province, employing a settlement strategy that relied on the creation of shoreline communities with effective transportation links between them. These communities, inevitably, would be composed of lands obtained from the First Nations, and many more purchases were subsequently arranged. In July 1792, Simcoe divided the province into 19 counties consisting of previously-settled lands, new lands open for settlement and lands not yet acquired by the Crown. These new counties stretched from Essex in the west to Glengarry in the east. Three months later, in October 1792, an Act of Parliament was passed whereby the four districts established by Lord Dorchester were renamed as the Western, Home, Midland and Eastern Districts (Archives of Ontario 2009).

The vicinity of the study area became part of the newly incorporated Dundas County in the Eastern District at this time (Archives of Ontario 2009). The county was named in honour of Henry Dundas, the Lord Advocate of Scotland (Carter 1905:39). D.W. Smyth's *A Map of the Province of Upper Canada* (1800) clearly shows the layout of the earliest townships along the St. Lawrence River, and demonstrates that the vicinity of the study area was already integrated into the British colonial system by the turn of the 19th century (see Map 10).

1.2.3.2 Dundas County

Shortly after the creation of Upper Canada, the original arrangement of the province's districts and counties was deemed inadequate. As population levels increased, smaller administrative bodies became desirable, resulting in the division of the largest units into more 'manageable' component parts. The first major changes in the vicinity of the study area took place in 1798, when an Act of Parliament called for the realignment of the Midland and Eastern Districts and the formation of the Johnstown District. Many new counties and townships were subsequently created (Archives of Ontario 2009).

The vicinity of the study area remained part of Dundas County in the Eastern District at this time (Archives of Ontario 2009). J. Purdy's *A Map of Cabotia* (1814) provides an excellent view of the St. Lawrence River region during these early years (see Map 12). In 1816, the northern part of the Eastern District was reincorporated as the Ottawa District, but Dundas County continued to exist in the south, comprising the Townships of Matilda and Williamsburg along the river and

the Townships of Mountain and Winchester in the back country. In February 1841, Dundas County became part of Canada West in the new United Province of Canada.

Following the abolition of the district system in 1849, the counties of Canada West were reconfigured once again. At this time, Dundas County became part of the new United Counties of Stormont, Dundas and Glengarry for judicial and municipal purposes (see Map 12–Map 13). In 1852, Dundas County had a population of 13,811, and by 1859, it boasted seventy-two shops and stores, eight flour mills, twenty-six saw mills, four carding mills, eight tanneries, four carriage factories, one foundry, three chair factories, two stove factories, one lock-gate factory, and one fanning mill factory. By 1861, the population of the county had increased to 18,824, consisting primarily of those of Canadian, Irish, American, Scottish, English, German, Prussian and East Indian descent (Croil 1972:127, 239–244).

Although the earliest settlers tended to build log homes, several United Empire Loyalists constructed stately houses along the St. Lawrence, similar to their former dwellings. In the early 20th century, many of the original log structures still stood due to the 'superior' quality of the local timber (Carter 1905:39–40). The St. Lawrence Seaway and Power Project was launched in 1954, and subsequent flooding in 1958 forced those along the shoreline to either abandon or relocate their homes. Many of the historic buildings and artifacts of the affected area were moved to the area which would become the Upper Canada Village and Crysler Memorial Battlefield in 1961 (Bowering 2005:10–11).

1.2.3.3 Township of Matilda (Township No. 5)

In historic times, the Township of Matilda was bordered by the Township of Williamsburg to the northeast, the Township of Mountain to the northwest, the Township of Edwardsburg to the southwest, and the St. Lawrence River to the southeast. The township was named after Princess Royal, Charlotte Augusta Matilda, eldest daughter of King George III in 1787 (Carter 1905:318).

The South Branch South Nation River and its tributaries defined the northern portion of the Township of Matilda, and the St. Lawrence River was a major contributing factor to settlement in the south. The township was particularly blessed with very fertile agricultural land, and J.S. Carter noted that "fine, cultivated farms, well-constructed, comfortable buildings, modern rural conveniences of every character, and behind all this a soil noted for its fertility, have made this historic township a desirable place of residence, and caused a marked stability in the values of farm property" (1905:321).

In June 1784, United Empire Loyalist settlers first arrived in the township, many of which came from Mohawk Valley in New York State (Belden & Co. 1879:viii). As mentioned above, these lands had been set aside for Major Edward Jessup's regiment, and the former Loyal Rangers drew random lots (McKenzie 1967:7). These Loyalists settled along the north shore of the St. Lawrence River, an area also known as the "the Front" (Bowering 2005:6). The first Loyalists were German-speaking Lutherans, including the Carmans, Jacob Coons, Captain Ault, the Dorans, the Brouses the Shavers, the Merckleys, and the Casselmans (Belden & Co 1879: viii; Bowering 2005:6). In 1788, the first school house in the Eastern District was built in the township (Bowering 2005:9).

The first non-Loyalist settlers arrived in the mid-19th century to populate the remainder of the township. John Rylance, the Vancamps, the Wallaces, Robert Wright, John Savor, Andrew Sipes, Zopher Skinner and William Smith were among the earliest of these pioneers (Carter 1905:441, 445). At this time, over 6,500 acres within the township were under cultivation, and Matilda contained three saw mills, eighteen schools, and a population of 2,535 (Smith 1846:51,113). By 1861, the population had risen to 5,473 (Croil 1972:240). In addition to successful farms, the people of the Township of Matilda experienced great success in the manufacture of dairy products. In 1903, the sale of cheese exceeded $250,000, the majority of which passed through Matilda/Iroquois in the south (Carter 1905:321).

The township's major road was the Matilda Road, which ran north from Matilda/Iroquois along the St. Lawrence River and was graded and planked by 1852. Unfortunately, it decayed rapidly and quickly became a gravel road of unsatisfactory quality. This road was not wholly reliable until 1875, when a crusher was purchased to properly maintain it (Carter 1905:67–68). The major railways built in the second half of the 19th century (e.g. the Grand Trunk Railway and the Canadian Pacific Railway) bypassed the majority of the Township of Matilda. The Grand Trunk Railway, however, did serve the principal settlement of Matilda/Iroquois.

The principal inland settlements within the Township of Matilda included Brinston's Corners, Dixon's Corners and Dundela. Other less prominent communities developed around local post offices, including Glen Stewart (1874), Haddo (1894), Hainsville (1887), Hulbert (1888), Irena (1877), New Ross (1867), Pleasant Valley (1877), Rowena (1880) and Toye's Hill (1882) (Carter 1905:325–326). The township was densely settled by the late 19th century, and many of original 200-acre lots appear to have been subdivided between family members (see Map 14).

Brinston's Corners began with the erection of a sawmill intended to provide wood for the thoroughfare. Shops and residences soon sprang up as well, and the 'Corners' became a commercial centre with a post office (1873), a carriage shop, a blacksmith shop, medical services, merchants, a barber, a cheese factory and a telegraph office (Carter 1905:322). The community was named after the first postmaster, Thomas Brinston. By 1905, the population of Brinston's Corners was approximately 125, with an agricultural implements business, two blacksmiths, a carriage maker, a flour mill, a furniture maker, two general stores and a millinery (Bowering 2005:13).

Dixon's Corners began as a favourite local meeting-place and quickly grew into a small community with a hotel, a post office (1852) and a cheese factory (Carter 1905:322). Like Brinston's Corners, Dixon's Corners was named after its first postmaster, John Dixon. In 1905, the community had a population of 50 and contained a blacksmith, a butcher, a cheese maker, a contractor, a general store, and a livestock agent (Bowering 2005:15–16).

Dundela's origins can be traced back to the first store of Everet Barclay, which was quickly joined by a post office (1865), a hotel and numerous other businesses (Carter 1905:322–325). The McIntosh apple was first harvested in Dundela by John McIntosh in 1830; however, despite the fruit's immediate popularity, it was his son, Allen, who first marketed it for mass consumption (Bowering 2005:9). The village was originally named McIntosh's Corners, and it was only with the arrival of the post office that it was renamed after Delia Dillabough, the

daughter of long-time resident James Dillabough. In 1905, Dundela had a population of 450 and boasted a barrister, a blacksmith, a carpenter, a carriage maker, a cheese maker, a contractor, a dentist, a dry goods store, a flour mill, two livestock agents and a veterinary surgeon (Bowering 2005:17).

1.2.3.4 The Study Area

As discussed in Section 1.1, the study area for this assessment comprises five parcels (Areas 1–5) falling on multiple lots and concessions in the Geographic Township of Matilda (see Table 1). The lots in this area were laid out during the initial survey of the township in the late 18th century, and the vicinity of the study area was very well-settled for the remainder of the Euro-Canadian period.

In an attempt to reconstruct the historic land use of the study area, ARA examined a historical map that documented past residents, structures (e.g., homes, businesses and public buildings) and features during the late 19th century. This map, published in Belden & Co.'s *Illustrated Historical Atlas of the Counties of Stormont, Dundas and Glengarry, Ontario* (1879), was of the most detailed scale available (50 chains to 1 inch). A georeferenced version of this historical map, showing the study area, appears in Map 15.

According to the *Illustrated Historical Atlas*, all of the subject lots were occupied during the late 19th century. The names of the historically-attested residents of these lots are summarized in Table 2, as are any additional relevant details associated with their specific biographical entries.

Table 2: Local Euro-Canadian Residents according to Belden & Co.'s *Illustrated Historical Atlas of the Counties of Stormont, Dundas and Glengarry, Ontario* (1879) (McGill University 2001)

Area	Lot	Concession	Property Owner	Lot Size (acres)	Post Office	Biographic Details	Visible Features or Structures
1	14	6	James Strader	100	N/A	N/A	Structure northeast of parcel, outside of study area
2	14	6	James Strader	100	N/A	N/A	Structure southeast of parcel, outside of study area
3	13	6	M. Houlahan	100	N/A	N/A	Structure south of parcel, outside of study area
4	18	5	F. Barriger	50	N/A	N/A	Structure northwest of parcel, outside of study area
5	18	8	R. Watt	50	N/A	N/A	School southwest of parcel, structure north of parcel, both outside of the study area

1.2.4 Summary of Past and Present Land Use

During Pre-Contact times, the vicinity of the study area would have comprised a mixture of coniferous trees, deciduous trees, wetlands and open areas. It seems clear that the First Nations managed the landscape to some degree, but the extent of such management is unknown. During the late 18th century, Euro-Canadian settlers arrived in the area and began to clear the forests for agricultural purposes. Over the course of the Euro-Canadian era, the study area would

have comprised agricultural lands in the vicinity of the historic communities of Brinston's Corners and Dixon's Corners. Presently, all of the subject parcels (Areas 1–5) comprise portions of recently-cultivated agricultural lands, save for a small part of Area 1 which traverses the Henderson Road ROW.

1.2.5 Additional Background Information

In the course of the previous archaeological assessments conducted for the project, additional research concerning the settlement history and land use of the study area was carried out. In accordance with the requirements set out in Section 7.5.7 of the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:125), the title, author and PIF number(s) of the related works appear below:

- Title: *Report on the 2009 Stage 1 Archaeological Background Research and Reconnaissance of Boundary Wind Farm, Part of Lot 36, Concession 5, Part of Lots 35-37, Concession 6, and Part of Lot 36, Concession 7, (Geographic Township of Matilda), Township of South Dundas, County of Dundas.* Author: AMICK Consultants Ltd. PIF #P058-452-2009.
- Title: *Report on the 2009 Stage 1 Archaeological Background Research and Reconnaissance of Brinston/South Branch Wind Farms, Part of Lots 16-18, Concession 6, Part of Lots 12-18, Concessions 7 & 8, and Part of Lots 12-15, Concession 9, Township of South Dundas, County of Dundas*. Author: AMICK Consultants Ltd. PIF #P058-440-2009.
- Title: *Stage 1 and 2 Archaeological Assessments, South Branch Wind Farm (FIT-FT3BIIC) Townships of South Dundas and Edwardsburgh/Cardinal, Geo. Townships of Matilda and Edwardsburgh, United Counties of Stormont, Dundas and Glengarry, and United Counties of Leeds and Grenville, Ontario.* Author: Archaeological Research Associates Ltd. PIF #P007-264-2010 and #P007-300-2011.
- Title: *Stage 1 and 2 Archaeological Assessments, South Branch Wind Farm – Additional Lands (FIT-FT3B1IC), Parts of Lot 18, Concession 5 and Lots A, 15, 18–20, Concession 6, Geographic Township of Matilda (Former Dundas County), Township of South Dundas, United Counties of Stormont, Dundas and Glengarry, Ontario*. Author: Archaeological Research Associates Ltd. PIF #P007-426-2012.

The additional information included in these reports was considered during the formulation of fieldwork strategies and recommendations pertaining to archaeological concerns within the study area (see Section 2.0).

1.3 Archaeological Context

1.3.1 Previous Archaeological Work

The current South Branch Wind Farm originally consisted of three different REA projects: 1) the South Branch Wind Farm, 2) the Brinston Wind Farm and 3) the Boundary Wind Farm. In April 2009, the project lands for these three wind farms were subjected to Stage 1 archaeological assessments by AMICK Consulting Ltd. (2009a; 2009b). These assessments, conducted under

licence #P058, PIF #P058-440-2009 and #P058-452-2009, resulted in the identification of numerous areas of archaeological potential and isolated areas of no archaeological potential.

Within both the Brinston/South Branch Wind Farms and Boundary Wind Farm study areas, AMICK identified areas of no archaeological potential within the building footprints of residential and agricultural complexes (i.e. existing structures and disturbed areas), in lands with high tension towers and in lands previously disturbed by infrastructure-related development activities (2009a:Figure 3; 2009b:Figure 3). All other lands were recommended for Stage 2 high intensity pedestrian survey or test pit survey, as the study areas were found to have "a high potential for significant archaeological resources" (AMICK 2009a:8; 2009b:10). Following these archaeological assessments, the separate projects were united as the South Branch Wind Farm and the project lands were partially redefined.

In December 2010 and from April–June 2011, ARA carried out Stage 1 and 2 archaeological assessments of all previously un-assessed lands with the potential to be impacted by the original design of the South Branch Wind Farm (ARA 2011). The work was carried out under licence #P007, PIF #P007-264-2010 (Stage 1) and #P007-300-2011 (Stage 2). The results of the Stage 1 assessment indicated that the majority of the study area had clear potential for Pre-Contact and Euro-Canadian archaeological sites. The Stage 2 assessment, completed under optimal conditions, resulted in the identification of two Euro-Canadian findspots (the Doyle site; BfFu-4 and the Shaver Site; BfFu-5). The Shaver site (BfFu-5) was found to be of further CHVI, and was recommended for Stage 3 assessment. In order to avoid impacts to this site or its 20 m protective buffer, however, the proponent modified the project location (a buffer zone of 1.88 km now exists between the site and the project location). The Doyle site (BfFu-4), on the other hand, was found to be of no further CHVI and was not recommended for further assessment (ARA 2011:29).

Following the completion of the original investigations, it was determined that additional Stage 1 and 2 assessments were required for revised underground collector lines located in the vicinity of County Road 16 and Henderson Road. The majority of these lands were included in the earlier Stage 1 assessments conducted under licence #P058, PIF #P058-440-2009 and licence #P007, PIF #P007-264-2010, but a small parcel west of County Road 16 was not previously assessed. All of the remaining additional lands also required Stage 2 archaeological assessment. The Stage 1 and 2 archaeological assessments were conducted in December 2012 under licence #P007, PIF #P007-426-2012. The assessments comprised 1) a V-shaped corridor traversing County Road 16 (the 'western parcel'), 2) a rectilinear parcel south of Henderson Road (the 'central parcel'), and 3) a rectilinear corridor north of Henderson Road (the 'eastern parcel'). No archaeological materials were found in these areas, and ARA recommended that no further archaeological assessment be required within these areas (ARA 2013:27).

1.3.2 Summary of Registered Archaeological Sites

An archival search was conducted using the MTCS's Ontario Archaeological Sites Database in order to determine the presence of any registered archaeological resources which might be located within a 1 km radius of the project location (MTCS 2012). Only one previously-identified site was found within these limits, and the excavation results from this site are summarized in Table 3.

Table 3: Registered Archaeological Sites within 1 km of the Study Area

Borden No.	Site Name	Year Assessed	Cultural Affiliation	Site Type	Comments
BfFu-5	Shaver	2011	Euro-Canadian	Homestead	103 Euro-Canadian artifacts, stone wall foundation and a stone well

The Shaver site (BfFu-5) was identified during ARA's Stage 2 assessment of the original project location (PIF #P007-300-2011), and is located roughly 2.0 km southwest of Area 5. During the same assessment, another site was identified approximately 1.1 km east of Area 5 (the Doyle site), but this site did not appear in the results of the database search. The Doyle site (BfFu-4) was a Euro-Canadian artifact scatter dating between the mid-19th and late 20th centuries (ARA 2011:28).

The presence of two Euro-Canadian sites within 1 km of the project location demonstrates the desirability of this locality for early settlement and resource exploitation. The lack of documented Pre-Contact archaeological sites in the vicinity of the study area should not be taken as an indicator that the area was unattractive or undesirable. Instead, this absence of sites is likely related to a lack of local archaeological exploration.

1.3.3 Natural Environment

Environmental factors played a substantial role in shaping early land-use and site selection processes, particularly in small Pre-Contact societies with non-complex, subsistence-oriented economies. Euro-Canadian settlers also gravitated towards favourable environments, particularly those with agriculturally-suitable soils and a moderate climate. In order to fully comprehend the archaeological context of the study area, the following five features of the local natural environment must be considered: 1) forests; 2) drainage systems; 3) climatic conditions; 4) physiography; and 5) soil types.

The study area lies within the Great Lakes-St. Lawrence forest, which is a transitional zone between the southern deciduous forest and the northern boreal forest covering approximately 20,000,000 ha. Vegetation here consists of a mixture of coniferous trees and deciduous trees, as well as many species of ferns, fungi, shrubs and mosses. The most prominent conifers are eastern white pine, red pine, eastern hemlock and white cedar, while deciduous trees are best represented by yellow birch, sugar and red maple, basswood and red oak. Other species more commonly occurring in the north are also present, including white and black spruce, jack pine, aspen and white birch (MNR 2013).

Only part of the original forest cover remains standing today, however, as early Euro-Canadian agriculturalists conducted large-scale clearing operations to prepare the land for cultivation. In Pre-Contact times, however, this dense forest would have been particularly bountiful. It is believed that the First Nations of the Great Lakes region exploited close to 500 plant species for food, beverages, food flavourings, medicines, smoking, building materials, fibres, dyes and basketry (Mason 1981:59–60). Furthermore, this diverse vegetation would have served as both home and food for a wide range of game animals, including white tailed deer, turkey, passenger pigeon, cottontail rabbit, elk, muskrat and beaver (Mason 1981:60).

In terms of the local drainage system, the study area lies entirely within the South Nation Watershed. Although the study area is not traversed by any primary of secondary water sources, several of these sources are located in close proximity to the additional lands. The South Branch South Nation River, for example, passes roughly 1.1 km northwest of Area 2.

The study area is located within the 'Eastern Counties' climatic region of southern Ontario, which is moderated by proximity to the St. Lawrence River. The mean annual temperature is 5.8 ºC in this area, and the annual precipitation level ranges between 715 and 980 mm (Matthews and Richards 1952:24–25). On the whole, this climate would have been well suited for the common grain and forage crops grown during the Euro-Canadian period.

Physiographically, the subject lands are located in the region known as the Winchester Clay Plain, which is an area of low relief located almost entirely within the South Nation River Watershed. The area is dominated by clay plains, although there are several exposed pockets of underlying till and bedrock (Chapman and Putnam 1984:203). These physiographic elements have accumulated over sandstone and dolostone bedrock belonging to the Lower Ordovician March and Oxford formations (Davidson 1989:42).

The soils within the study area consist entirely of North Gower clays, which are stone-free, have a level to slightly undulating topography, and are characterized by poor drainage qualities. North Gower clays belong to the Dark Grey Gleisolic soil group (Matthews and Richards 1952:Soil Map).

In summary, the study area possesses a number of environmental characteristics which would have made it attractive to both Pre-Contact and Euro-Canadian populations. The rich Great Lakes-St. Lawrence forest and the nearby water sources would have attracted a wide variety of game animals, and consequently, early hunters. Although the poorly drained soils were not suitable for sustained crop production unless some type of drainage system was installed, such systems were quickly established during the Euro-Canadian period. Finally, the proximity of the study area to the St. Lawrence River would also have influenced its settlement and land-use history. Such major waterways functioned as principal transportation routes in both Pre- and Post-Contact times

1.3.4 Archaeological Fieldwork and Property Conditions

The Stage 2 property assessment was carried out on July 9, 2013 under MTCS licence #P007, PIF #P007-546-2013. The assessment encompassed 1) a V-shaped parcel northwest of Henderson Road (Area 1), 2) a trapezoidal parcel north of Henderson Road (Area 2), 3) another trapezoidal parcel north of Henderson Road (Area 3), 4) an oval parcel east of Brinston Road (Area 4), and 5) a rhomboidal parcel north of Snowbird Road (Area 5), and involved the pedestrian survey of all agricultural lands and the visual inspection of the Henderson Road ROW. Legal permission to enter and conduct all necessary fieldwork activities on project lands was granted by the property owners. Key personnel involved during the assessment were P.J. Racher, Project Director; C.J. Gohm, Deliverables Manager; and N. Adams, Field Director and Field Cartographer (GPS).

As discussed in Section 1.2.4, all of the subject parcels (Areas 1–5) comprise portions of recently cultivated agricultural lands, save for a small part of Area 1 which traverses the Henderson Road ROW. Field conditions were ideal during the assessment, with high ground surface visibility and well-weathered soils in the ploughed lands. The specific weather and lighting conditions for the day of assessment are discussed in Section 2.1.

No unusual physical features were encountered during the assessments that affected fieldwork strategy decisions or the identification of artifacts or cultural features (e.g. dense root mats, boulders, rubble, etc.).

2.0 STAGE 2 PROPERTY ASSESSMENT

2.1 Field Methods

Given that the areas of archaeological potential within Areas 1–5 consisted of recently cultivated fields, the pedestrian survey method was utilized to complete the Stage 2 property assessment. The Henderson Road ROW portion of Area 1 comprised Henderson Road and its associated shoulders and ditches; this area was not plough-accessible, has not been actively or recently cultivated, and was therefore not ploughed. Weather and lighting conditions were ideal during the assessment on July 9, 2013, with cloudy skies, a high of 30 °C and excellent visibility. ARA therefore confirms that fieldwork was carried out under weather and lighting conditions that met the requirements set out in Section 2.1 Standard 3 of the *Standards and Guidelines for Consultant Archeologists* (MTC 2011:29).

Section 2.1.1 of the *Standards and Guidelines for Consultant Archaeologists* provides clear requirements for the condition of agricultural lands prior to the commencement of fieldwork: all fields must be recently ploughed; all soils must be well-weathered; and at least 80% of the ploughed ground surface must be visible (MTC 2011:30). These conditions were met during the Stage 2 assessment (see Image 1–Image 10).

Following the standard strategy for pedestrian survey outlined in Section 2.1.1 of the *Standards and Guidelines for Consultant Archaeologists*, an ARA crewmember traversed the study area along parallel transects established at a maximum interval of 5 m, yielding at least 20 survey transects per hectare. If archaeological materials were encountered in the course of the pedestrian survey, the transect interval would be closed to 1 m and a close inspection of the ground would be conducted for 20 m in all directions. For sites with potential for further CHVI, all diagnostic artifacts and a representative sample of non-diagnostic artifacts would then be collected for analysis. All remaining artifacts would be left *in situ* until a proper Stage 3 Controlled Surface Pickup could be carried out. For small sites with no potential for further CHVI, all artifacts would be collected in order to fully document the deposit.

Artifacts that may indicate the presence of significant cultural deposits include bone, charcoal, lithics (stone tools and refuse generated by their production and use), ceramics, glass and metal. Archaeological features such as pits, foundations and other non-portable remains may also be detected during a Stage 2 property assessment. All archaeological materials with potential CHVI are documented, whether associated with Pre-Contact Aboriginal groups or Post-Contact First Nations, Métis and Euro-Canadian populations. Artifact locations are recorded on topographic maps, in field notes and on a GPS handheld unit. Specifically, ARA employs a Garmin eTrex Legend, WAAS-enabled, GPS handheld unit capable of +/- 2 m accuracy (using the UTM17 NAD83 coordinate system).

All parts of the study area were assessed according to these methods, save for those that clearly did not have archaeological potential. Section 2.1 of the *Standards and Guidelines for Consultant Archaeologists* states that only those areas that have steep slopes greater than 20°, are permanently wet or consist of exposed bedrock, or have been subjected to deep land alterations that have severely damaged the integrity of archaeological resources can be considered exempt from requiring Stage 2 assessment (MTC 2011:28). These areas were subject to a property

inspection in accordance the requirements set out in Section 1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:15–16). Specifically, the visually inspected areas were examined systematically (at a 5 m interval) under ideal weather and lighting conditions with excellent ground surface visibility. The portion of Area 1 falling within the Henderson Road ROW was identified as disturbed during the visual inspection (see Image 11).

The results of the Stage 2 assessment are summarized in Map 16–Map 20. In fulfillment of the requirements set out in Section 7.8 of the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:137), the field methods utilized during the assessment are summarized in Table 4.

Table 4: Summary of Utilized Field Methods

Category	Study Area
Property assessed by test pit survey at a maximum interval of 5 m	0.00% (0.00 ha)
Property assessed by pedestrian survey at a maximum interval of 5 m	97.99% (3.91 ha)
Property assessed by test pit survey and visual inspection to confirm disturbance	0.00% (0.00 ha)
Property not assessed because of disturbed areas	2.01% (0.08 ha)
Property not assessed because of permanently wet areas	0.00% (0.00 ha)
Property not assessed because of sloped areas	0.00% (0.00 ha)
Property assessed where standard survey intervals could not be maintained	0.00% (0.00 ha)
Total	100% (3.99 ha)

In keeping with the requirements set out in Section 2.1 Standard 4 of the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:29), GPS coordinates were recorded for a fixed reference landmark (e.g., Ontario Land Surveyor benchmark, Hydro pole, standard iron bar, etc.) located in the vicinity of the study area. The GPS co-ordinates for a telephone pole appear in Table 5, and the location of this fixed reference landmark appears in Map 21.

Table 5: GPS Co-ordinates for the Fixed Reference Landmark

Location	UTM Zone	Easting (m)	Northing (m)
Permanent Fixed Reference (Telephone Pole 1)	18	470,737	4,977,858

2.2 Record of Finds

The assessment, conducted under optimal conditions, did not result in the discovery of any archaeological materials. The inventory of the documentary record for the assessment is summarized in Table 6. This inventory includes a quantitative summary of the field notes, photographs and mapping materials involved in the project, all of which are stored at ARA's processing facility located at 154 Otonabee Drive, Kitchener, Ontario.

Table 6: Inventory of the Documentary Record

Field Documents	Total	Nature	Location
Photographs	43	Digital	On server at 154 Otonabee Drive, Kitchener; Folder P007-546-2013
Field Notes	1	Digital and hard copy	Filed and on server at 154 Otonabee Drive, Kitchener; P007-546-2013
Field Maps	5	Digital and hard copy	Filed and on server at 154 Otonabee Drive, Kitchener; P007-546-2013

2.3 Analysis and Conclusions

No archaeological sites were identified within any of the additional lands (i.e., Areas 1–5).

2.4 Recommendations

Judging from the results of the Stage 2 property assessment, the study area appears to be devoid of any significant archaeological remains. Based on these findings, ARA recommends that no further archaeological assessment be required within Areas 1–5.

In the event that the project location is modified in the future (i.e., it is altered to accommodate new proposed infrastructure), further archaeological work may be required. A *Letter of Review and Acceptance into the Ontario Public Register of Archaeological Reports* is requested, as provided for in Section 65.1 of the *Ontario Heritage Act*.

3.0 ADVICE ON COMPLIANCE WITH LEGISLATION

Section 7.5.9 of the *Standards and Guidelines for Consultant Archaeologists* requires that the following information be provided for the benefit of the proponent and approval authority in the land use planning and development process (MTC 2011:126–127):

- This report is submitted to the 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 archaeological 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 Ministry of Consumer Services.

4.0 IMAGES

Image 1: View of Field Conditions at Time of Pedestrian Survey – Area 1
(Photo Taken on July 9, 2013)

Image 2: View of Field Conditions at Time of Pedestrian Survey – Area 1
(Photo Taken on July 9, 2013)

Image 3: View of Field Conditions at Time of Pedestrian Survey – Area 2
(Photo Taken on July 9, 2013; Facing Northwest)

Image 4: View of Field Conditions at Time of Pedestrian Survey – Area 2
(Photo Taken on July 9, 2013; Facing Northwest)

Image 5: View of Field Conditions at Time of Pedestrian Survey – Area 3
(Photo Taken on July 9, 2013; Facing Northwest)

Image 6: View of Field Conditions at Time of Pedestrian Survey – Area 3
(Photo Taken on July 9, 2013; Facing Northwest)

Image 7: View of Field Conditions at Time of Pedestrian Survey – Area 4
(Photo Taken on July 9, 2013; Facing West)

Image 8: View of Field Conditions at Time of Pedestrian Survey – Area 4
(Photo Taken on July 9, 2013)

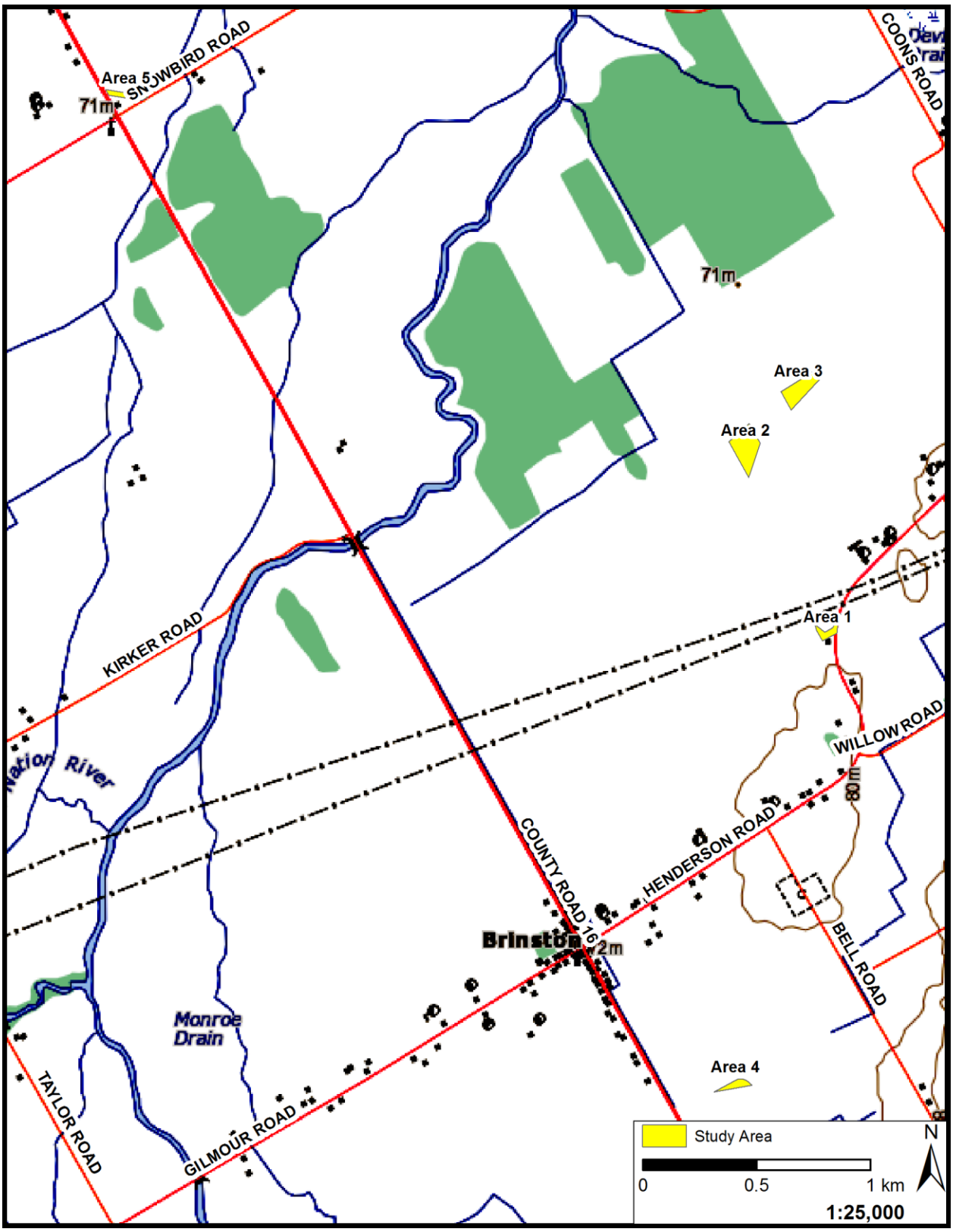
Image 9: View of Field Conditions at Time of Pedestrian Survey – Area 5
(Photo Taken on July 9, 2013; Facing Southeast)

Image 10: View of Field Conditions at Time of Pedestrian Survey – Area 5
(Photo Taken on July 9, 2013; Facing Southwest)

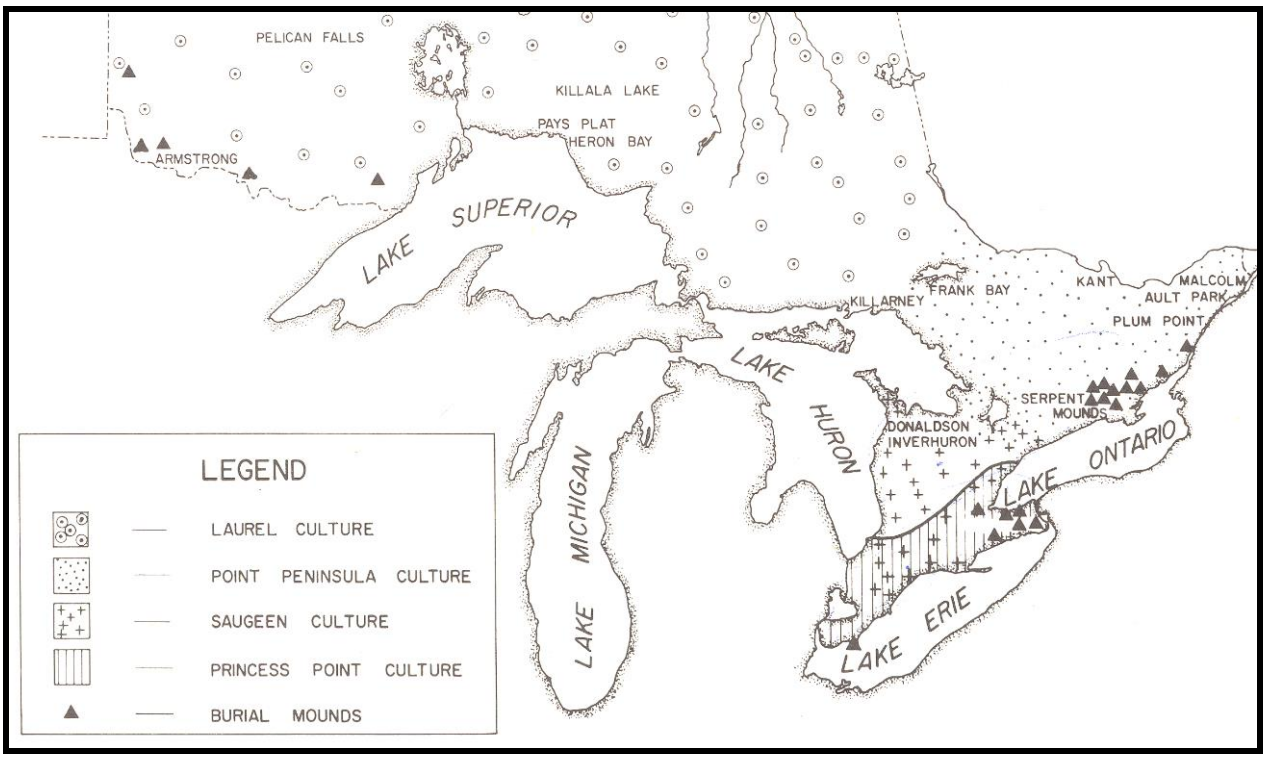
Image 11: Area of No Archaeological Potential – Disturbed Lands at Area 1
(Photo Taken on July 9, 2013; Facing North)

5.0 MAPS

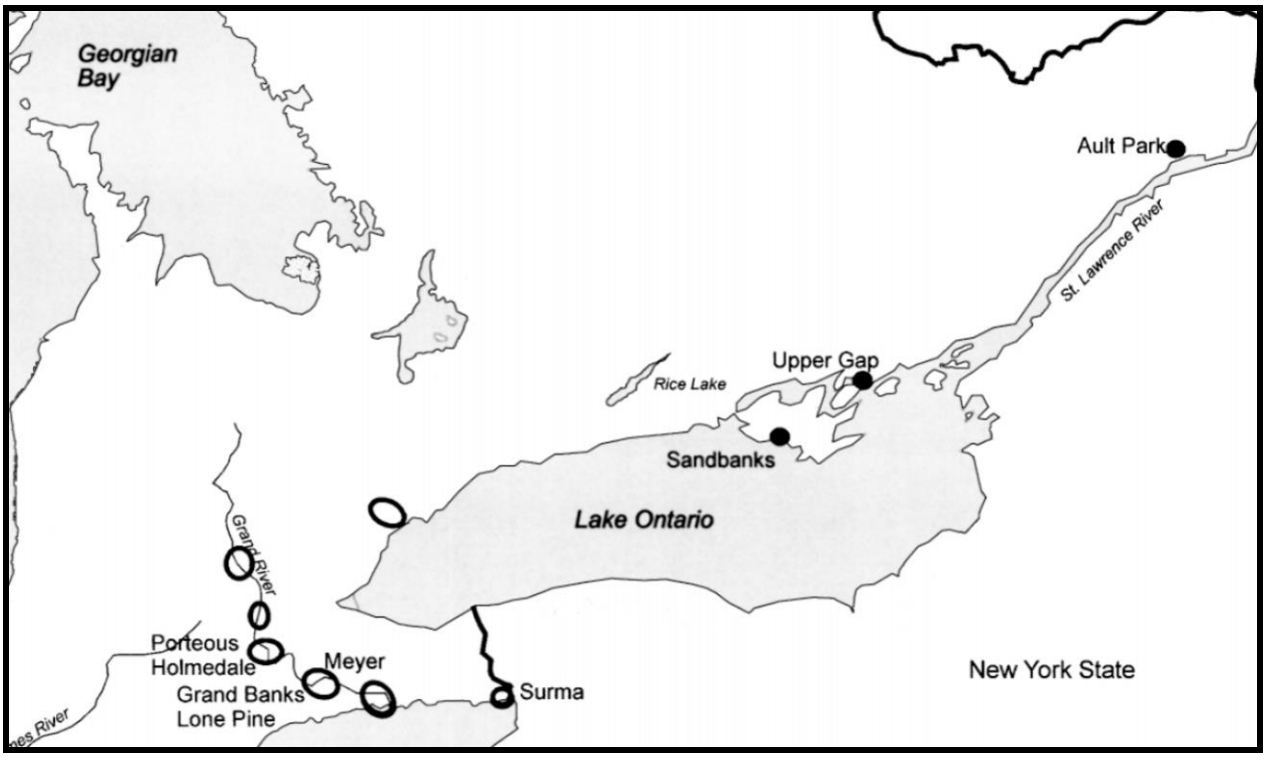
Map 1: Location of the Study Area in the Province of Ontario
(NRC 2004)



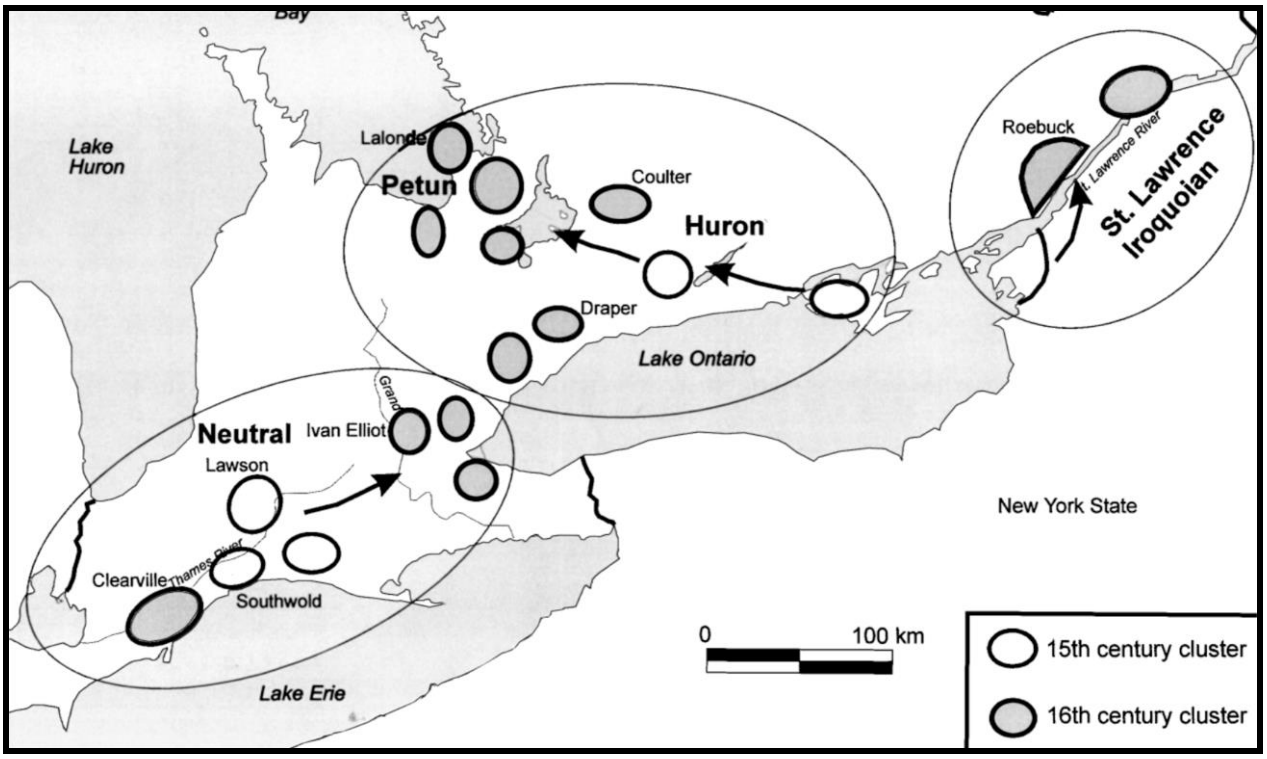
Map 2: Location of the Study Area (Areas 1–5) in the United Counties of Stormont, Dundas and Glengarry
(NRC 2010b)



Map 3: Middle Woodland Period Complexes
(Wright 1972: Map 4)



Map 4: Princess Point Site Clusters in Southern Ontario
(Warrick 2000:Fig. 3)



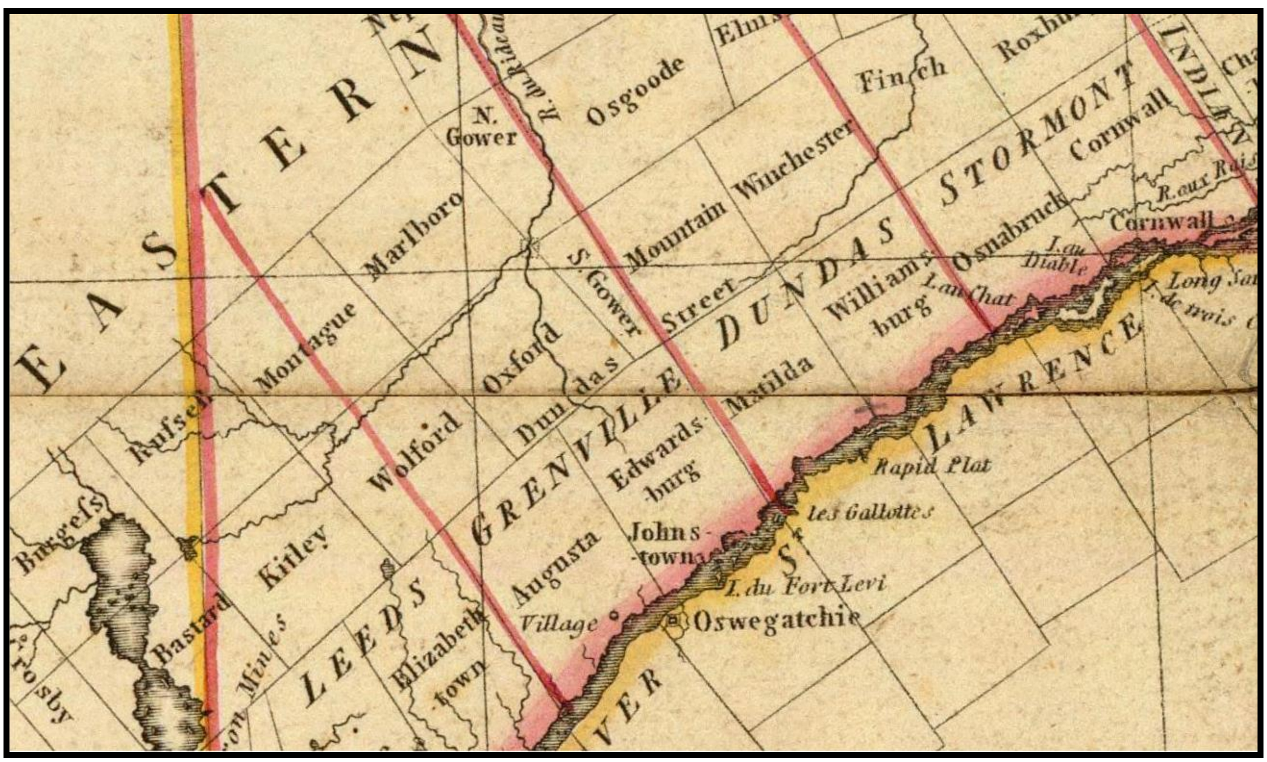
Map 5: Pre-Contact Iroquoian Site Clusters
(Warrick 2000: Figure 10)

Map 6: Detail from S. de Champlain's *Carte de la Nouvelle France* (1632)
(Gentilcore and Head 1984: Map 1.2)

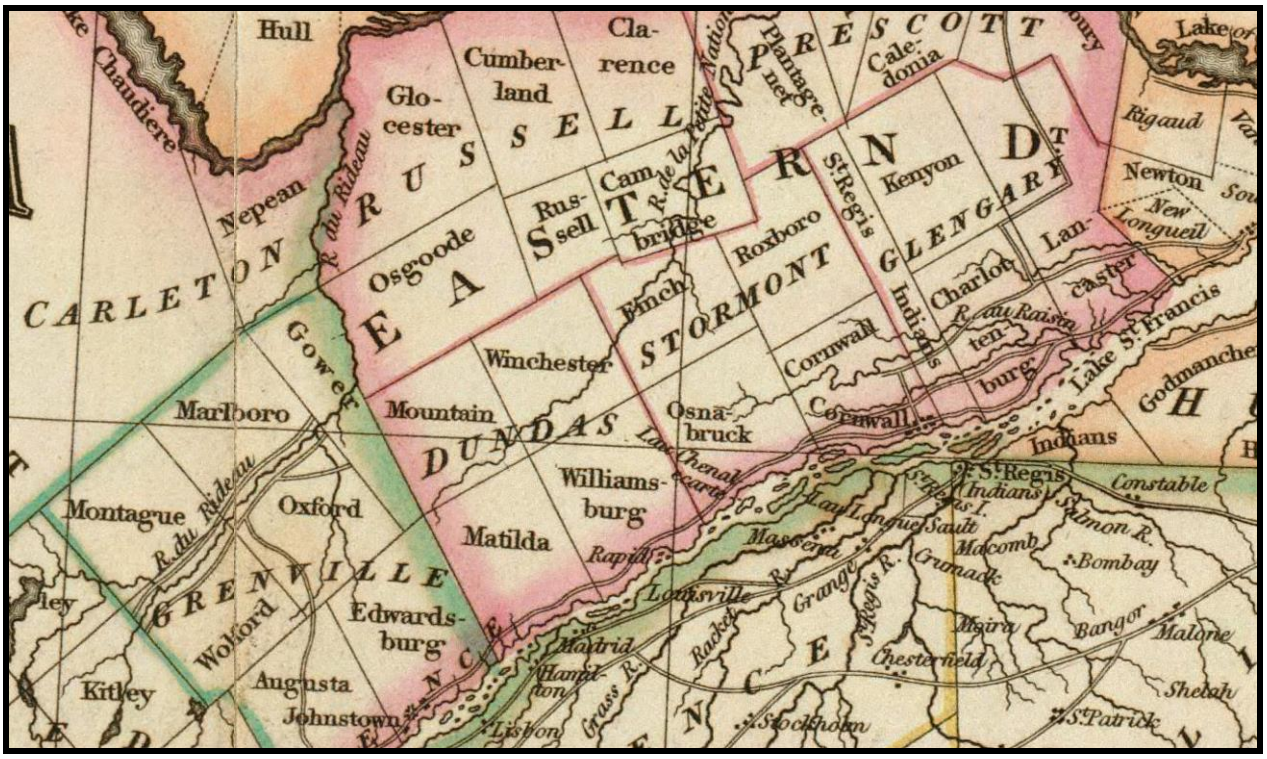
Map 7: Detail from N. Sanson's *Le Canada, ou Nouvelle France* (1656)
(Gentilcore and Head 1984: Map 1.10)

Map 8: Detail from H. Popple's *A Map of the British Empire in America* (1733)
(Cartography Associates 2009)

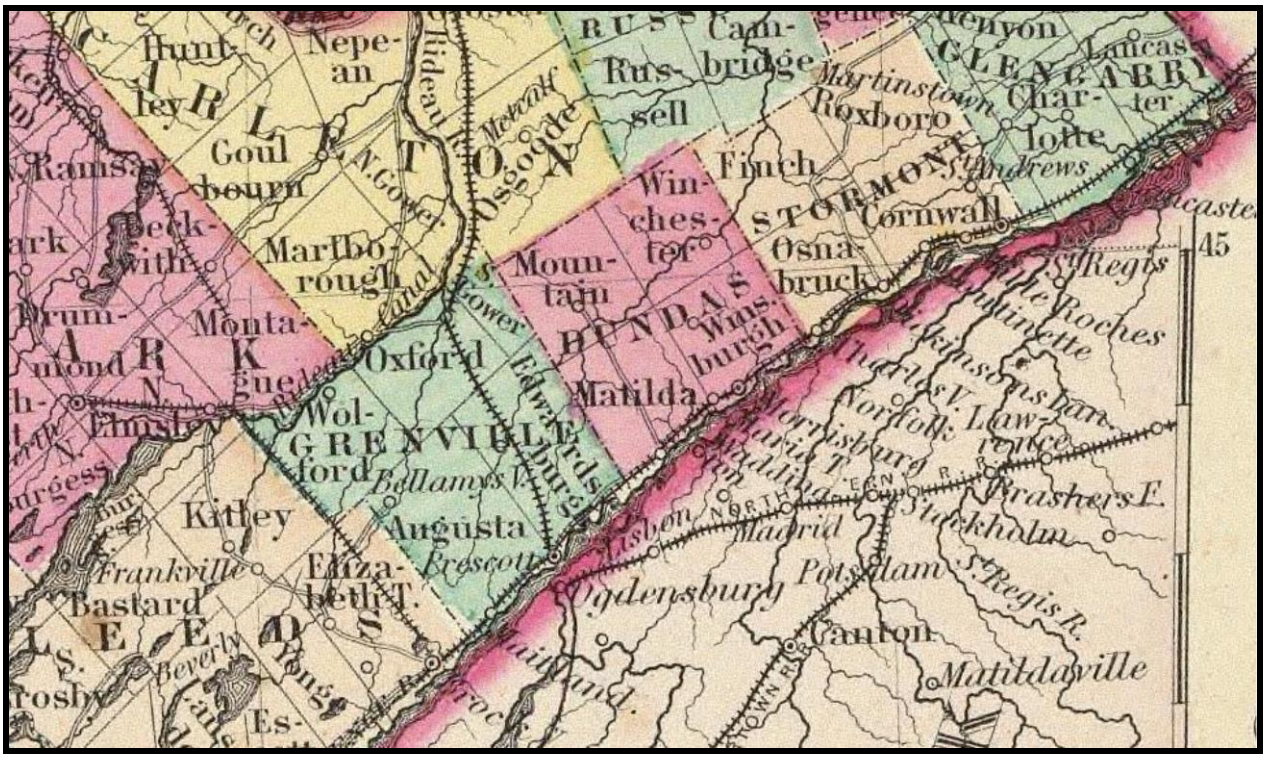
Map 9: Detail from R. Sayer and J. Bennett's *General Map of the Middle British Colonies in America* (1776)
(Cartography Associates 2009)



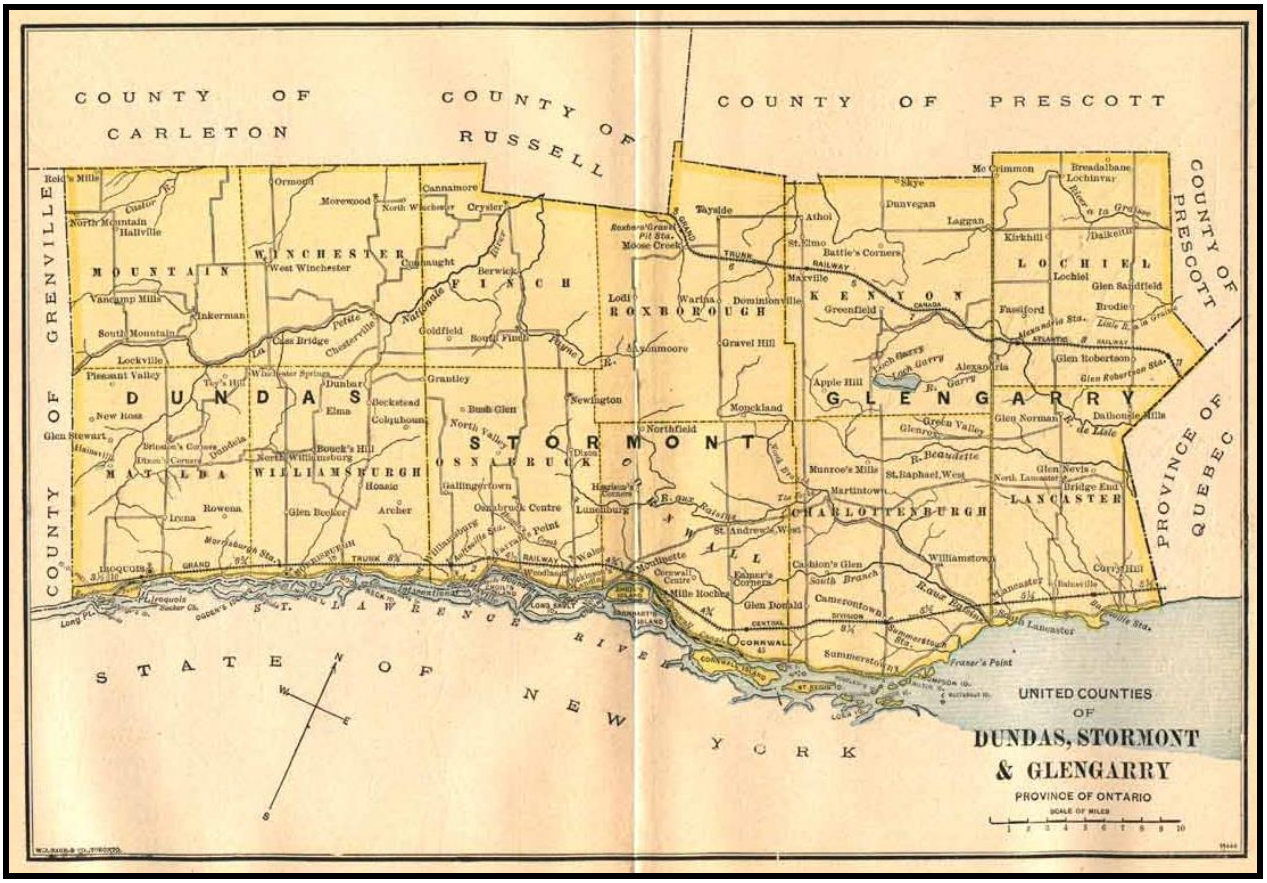
Map 10: Detail from D.W. Smyth's A Map of the Province of Upper Canada (1800)
(Cartography Associates 2009)



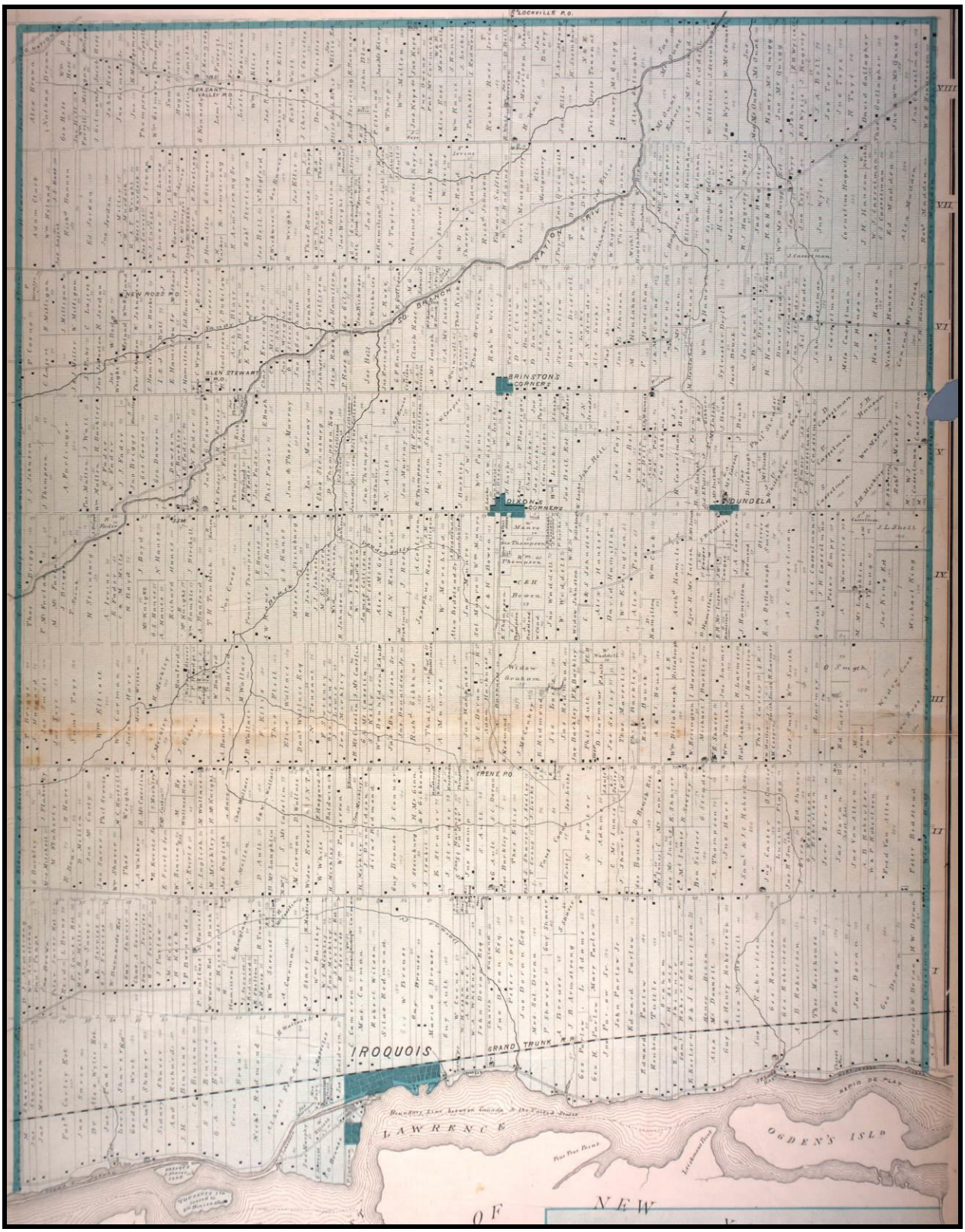
Map 11: Detail from J. Purdy's *A Map of Cabotia* (1814)
(Cartography Associates 2009)



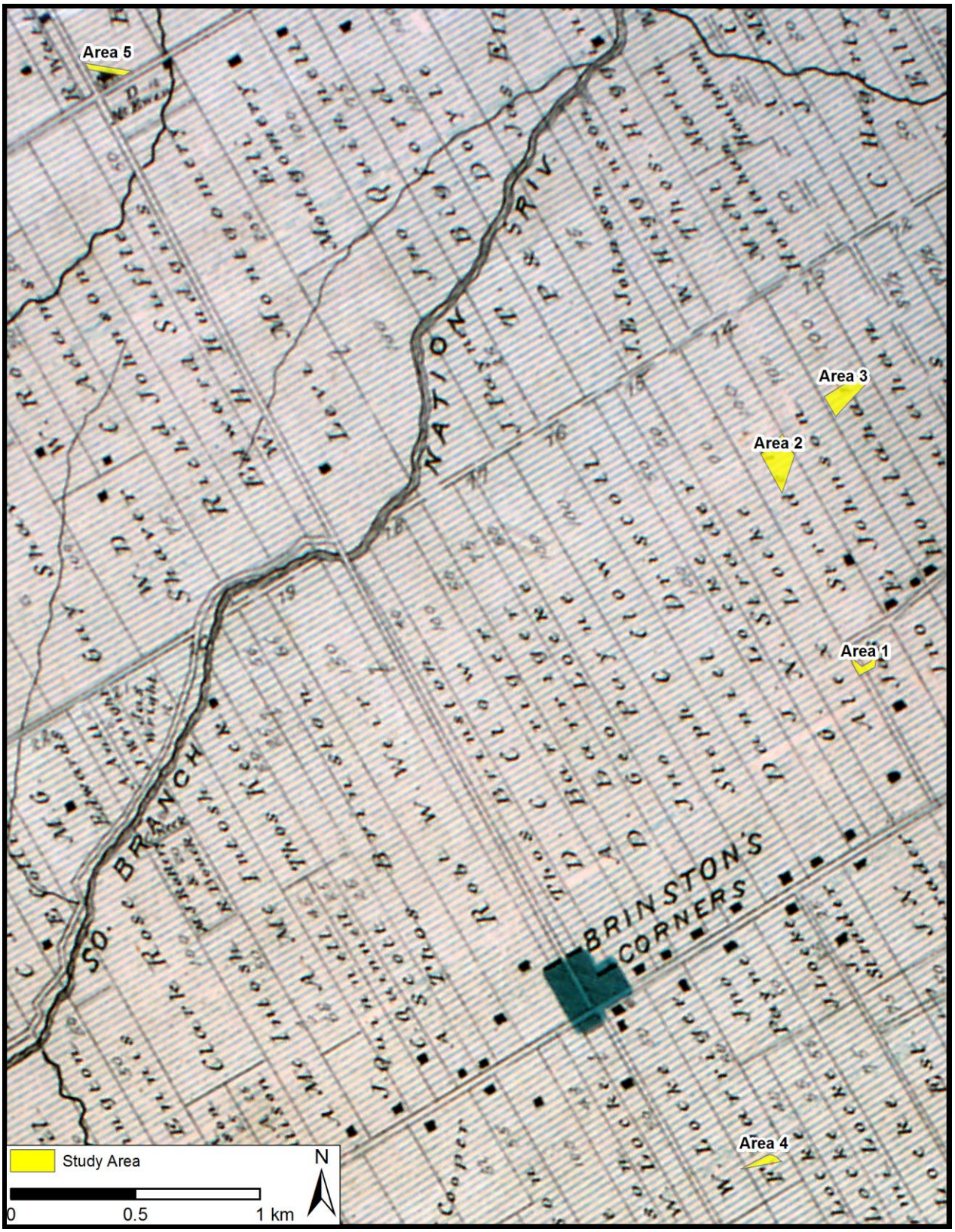
Map 12: Detail from G.W. Colton's Canada West or Upper Canada (1856)
(Cartography Associates 2009)



Map 13: The United Counties of Dundas, Stormont & Glengarry from W.J. Gage and Co.'s *Gage's County Atlas* (1886)
(W.J. Gage and Co. 1886)

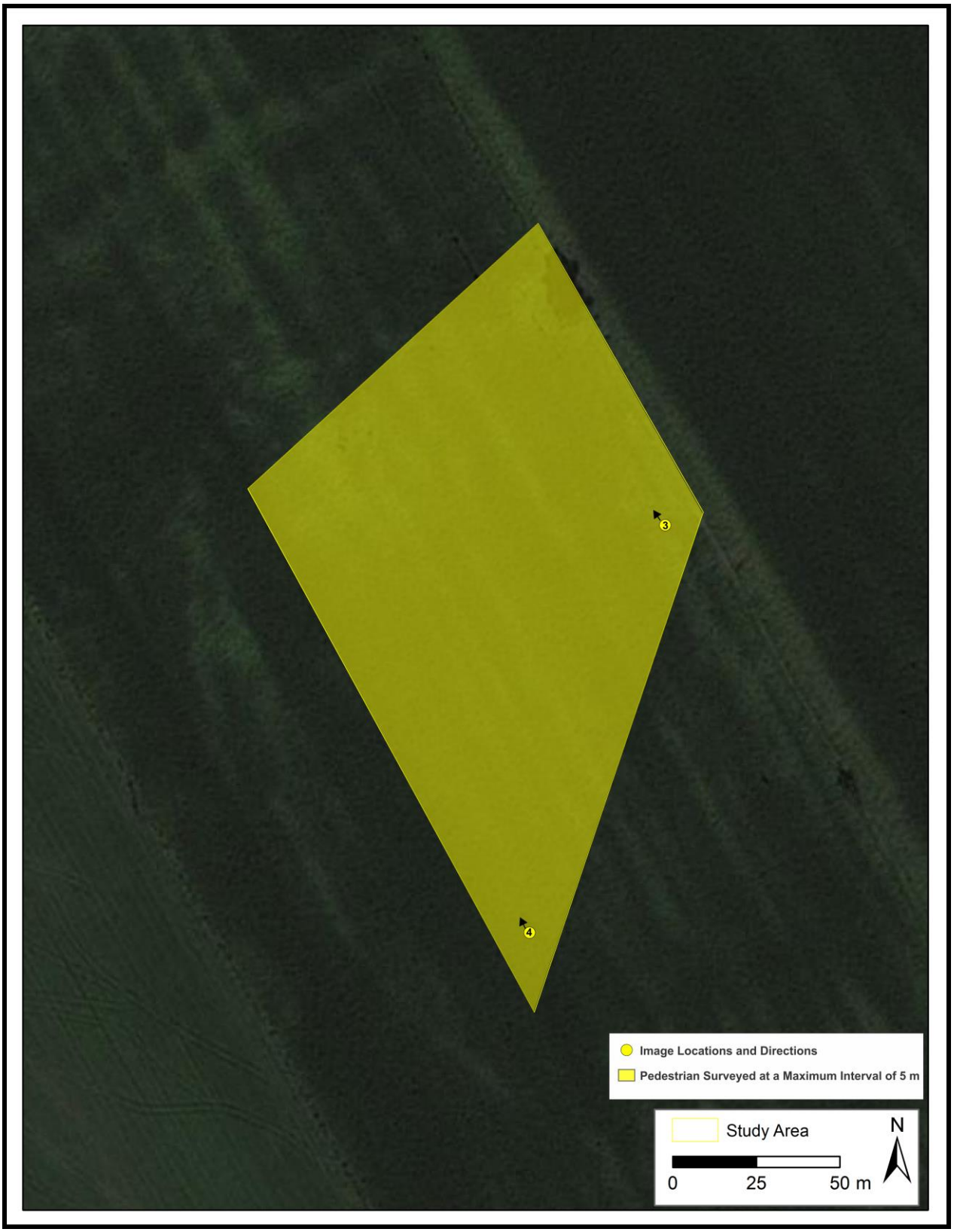


Map 14: The Township of Matilda from Belden & Co.'s *Illustrated Historical Atlas of the Counties of Stormont, Dundas and Glengarry, Ontario* (1879)
(McGill University 2001)

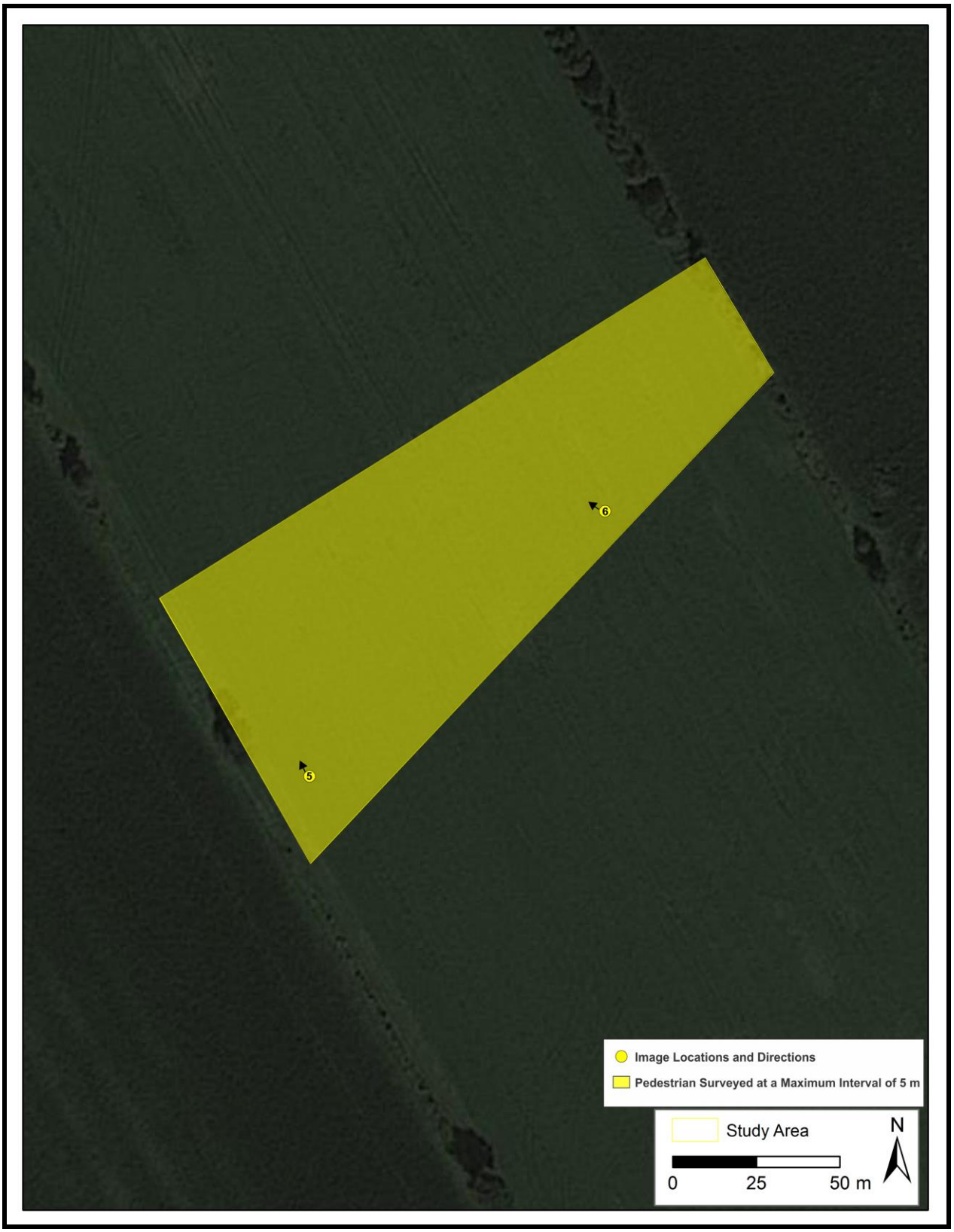


Map 15: Detail of the Township of Matilda from Belden & Co.'s *Illustrated Historical Atlas of the Counties of Stormont, Dundas and Glengarry, Ontario* (1879), Showing the Study Area (McGill University 2001)

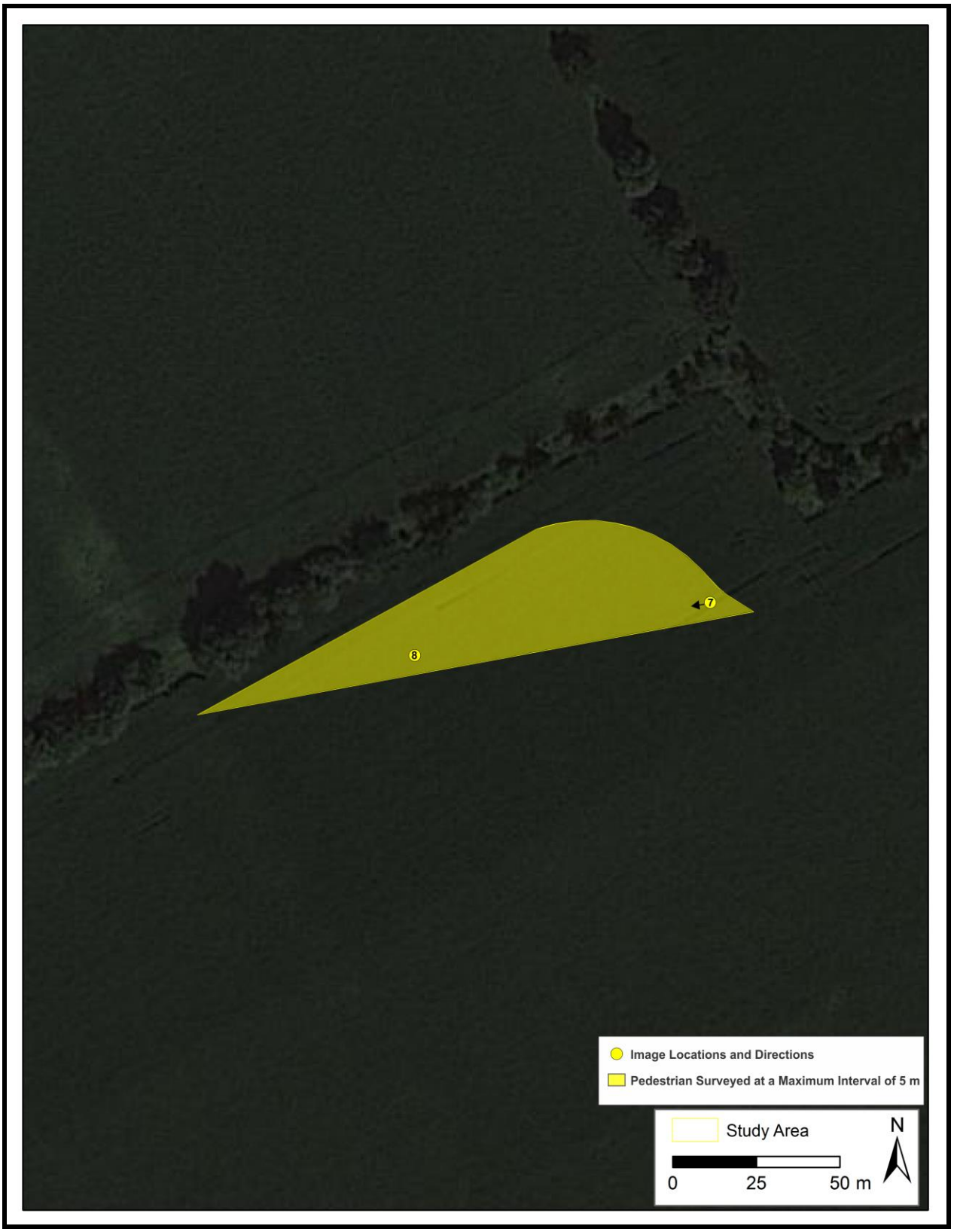
Map 16: Stage 2 Assessment Results – Area 1
(Google Earth 2013)



Map 17: Stage 2 Assessment Results – Area 2
(Google Earth 2013)

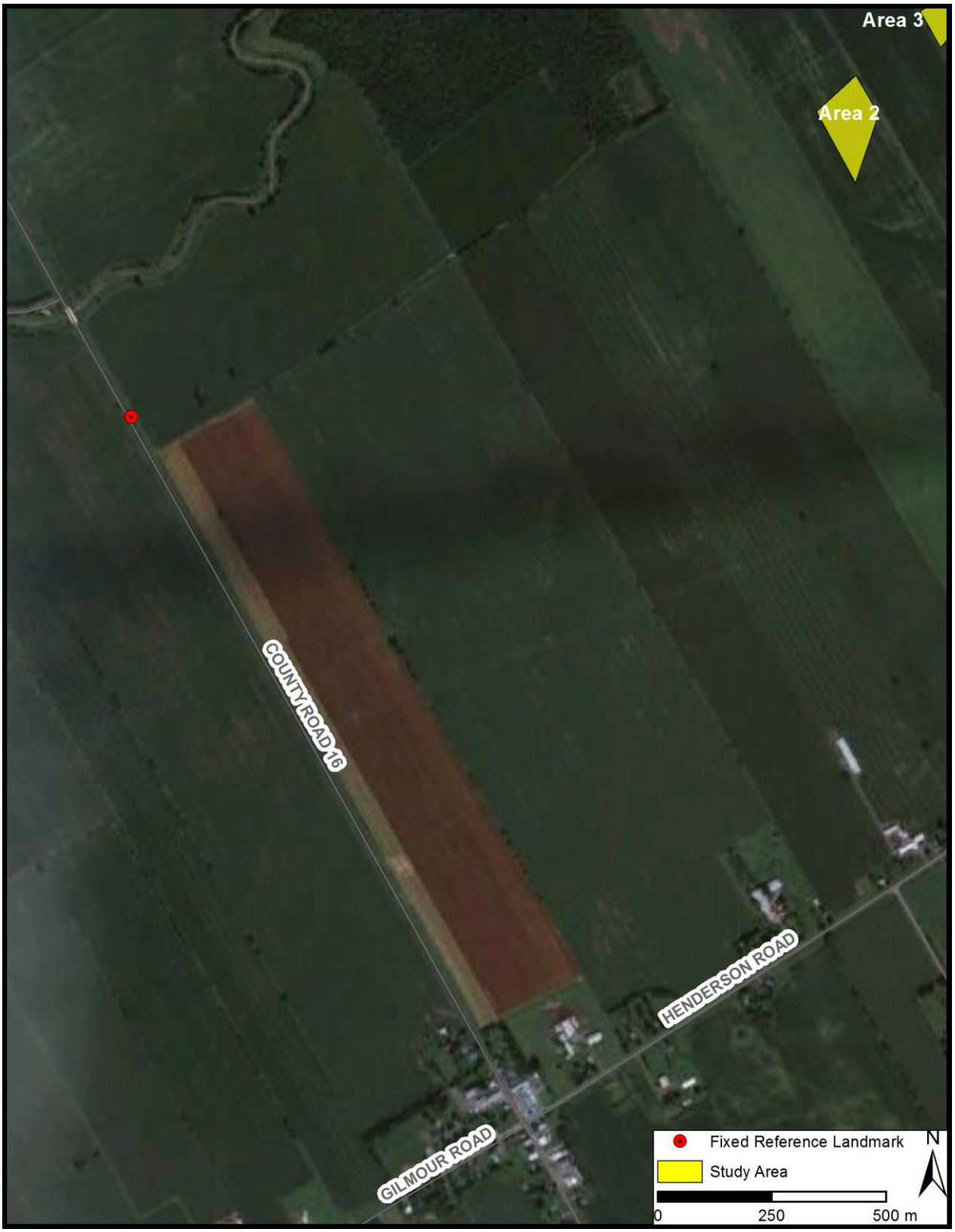


Map 18: Stage 2 Assessment Results – Area 3
(Google Earth 2013)



Map 19: Stage 2 Assessment Results – Area 4
(Google Earth 2013)

Map 20: Stage 2 Assessment Results – Area 5
(Google Earth 2013)



Map 21: Stage 2 Assessment Results – Fixed Reference Landmark
(Google Earth 2013)

6.0 BIBLIOGRAPHY AND SOURCES

Archaeological Research Associates (ARA)

2011 **Stage 1 and 2 Archaeological Assessments, South Branch Wind Farm (FIT-FT3BIIC), Townships of South Dundas and Edwardsburgh/Cardinal, Geo. Townships of Matilda and Edwardsburgh, United Counties of Stormont, Dundas and Glengarry, and United Counties of Leeds and Grenville, Ontario.** PIF #P007-264-2010 and #P007-300-2011. Archaeological Research Associates Ltd.

2013 **Stage 1 and 2 Archaeological Assessments, South Branch Wind Farm – Additional Lands (FIT-FT3B1IC), Parts of Lot 18, Concession 5 and Lots A, 15, 18–20, Concession 6, Geographic Township of Matilda (Former Dundas County), Township of South Dundas, United Counties of Stormont, Dundas and Glengarry, Ontario**. PIF #P007-426-2012. Archaeological Research Associates Ltd.

Archives of Ontario

2009 **The Evolution of the District and County System, 1788-1899**. Accessed online at: http://www.archives.gov.on.ca/english/on-line-exhibits/maps/ontario-district-maps.aspx.

AMICK Consultants Ltd. (AMICK)

2009a **Report on the 2009 Stage 1 Archaeological Background Research and Reconnaissance of Boundary Wind Farm, Part of Lot 36, Concession 5, Part of Lots 35-37, Concession 6, and Part of Lot 36, Concession 7, (Geographic Township of Matilda), Township of South Dundas, County of Dundas**. PIF #P058-452-2009. AMICK Consultants Ltd.

2009b **Report on the 2009 Stage 1 Archaeological Background Research and Reconnaissance of Brinston/South Branch Wind Farms, Part of Lots 16-18, Concession 6, Part of Lots 12-18, Concessions 7 & 8, and Part of Lots 12-15, Concession 9, Township of South Dundas, County of Dundas.** PIF #P058-440-2009. AMICK Consultants Ltd.

Belden & Co.

1879 **Illustrated Atlas of the United Counties of Stormont, Dundas and Glengarry, Ontario**. Toronto: H. Belden & Co.

Bowering, I.

2005 **Main Street Dundas County, 1905–2005.** Cornwall: Stormont, Dundas and Glengarry Historical Society.

Carter, J.S.

1905 **The Story of Dundas, Being a History of the County of Dundas from 1784 to 1904.** Iroquois: The St. Lawrence News Publishing House.

Cartography Associates

2009 **David Rumsey Map Collection**. Accessed online at: http://www.davidrumsey.com/.

Chapman, L.J. and D.F. Putnam
1984 **The Physiography of Southern Ontario, 3rd Edition**. Toronto: Ontario Geological Survey, Special Volume 2.

Coyne, J. H.
1895 **The Country of the Neutrals (As Far as Comprised in the County of Elgin): From Champlain to Talbot**. St. Thomas: Times Print.

Croil, J.
1972 **Dundas or A Sketch of Canadian History.** Reprint: 1861. Belleville: Mika Silk Screening Limited.

Dodd, Christine F., D.R. Poulton, P.A. Lennox, D.G. Smith and G.A. Warrick
1990 *The Middle Ontario Iroquoian Stage*. In **The Archaeology of Southern Ontario to A.D. 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 321-359. Occasional Publications of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Ellis, C.J. and Deller, D.B.
1990 *Paleo-Indians***.** In **The Archaeology of Southern Ontario to AD 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 37-74. Occasional Publications of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Ellis, C.J., I.T. Kenyon, and M.W. Spence
1990 *The Archaic*. In **The Archaeology of Southern Ontario to AD 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 65-124. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Fox, W.
1990 *The Middle Woodland to Late Woodland Transition.* In **The Archaeology of Southern Ontario to AD 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 171-188. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Gentilcore, R.L. and C.G. Head
1984 **Ontario's History in Maps**. Toronto: University of Toronto Press.

Gervais, G.
2004 *Champlain and Ontario (1603-35).* In **Champlain: The Birth of French America**, edited by R. Litalien and D. Vaugeois, pp. 180-190. Montreal: McGill-Queen's Press.

Google Earth
2013 **Google Earth Version 6.1.0.5001**. Accessed online at: http://www.google.com/earth/index.html.

Horizon Wind Farms
2013 **South Branch Wind Farm**. Accessed online at: http://horizonwindfarms.com/canada/under-dev/south-branch.htm.

Hunt, G.T.
1940 **The Wars of the Iroquois: A Study in Intertribal Trade Relations**. Madison, Wisconsin: University of Wisconsin Press.

Jackson, L. J., C. Ellis, A. V. Morgan and J. H. McAndrews
2000 *Glacial Lake Levels and Eastern Great Lakes Palaeo-Indians.* In **Geoarchaeology: An International Journal**, Volume 15, Number 5, pp. 415-440.

Jamieson, B.J.
1990 *The Archaeology of the St. Lawrence Iroquoians*. In **The Archaeology of Southern Ontario to A.D. 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 385–404. Occasional Publication of the London Chapter, OAS Number 5, London: Ontario Archaeological Society Inc.

Karrow, P.F. and B.G. Warner
1990 *The Geological and Biological Environment for Human Occupation in Southern Ontario.* In **The Archaeology of Southern Ontario to AD 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 5-35. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Lajeunesse, E.J.
1960 **The Windsor Border Region: Canada's Southernmost Frontier**. Toronto: The Champlain Society.

Leavitt, T.W.H.
1879 **History of Leeds and Grenville, Ontario, from 1749 to 1879**. Brockville: Recorder Press.

Lennox, P.A. and W.R. Fitzgerald.
1990 *The Culture History and Archaeology of the Neutral Iroquoians.* In **The Archaeology of Southern Ontario to AD 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 405-456. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Matthews, B.C. and N.R. Richards
1952 **Soil Survey of Dundas County**. Report No. 14 of the Ontario Soil Survey. Guelph: Experimental Farms Service, Canada Department of Agriculture and the Ontario Agricultural College.

Mason, R.J.
1981 **Great Lakes Archaeology.** New York: Academic Press.

McGill University
2001 **The Canadian County Atlas Digital Project.** Accessed online at: http://digital.library.mcgill.ca/countyatlas/default.htm.

McKenzie, R.
1967 **Leeds and Grenville: Their First Two Hundred Years**. Toronto: McClelland & Stewart.

Métis Nation of Ontario (MNO)
2011 **Culture & Heritage: Who are the Métis**. Accessed online at: http://www.metisnation.org/culture--heritage/who-are-the-metis.aspx.

Ministry of Culture (MCL)
1997 **Conserving a Future for Our Past: Archaeology, Land Use Planning & Development in Ontario. An Educational Primer and Comprehensive Guide for Non-Specialists.** Toronto: Ministry of Culture.

Ministry of Natural Resources (MNR)
2013 **About Ontario's Forests.** Accessed online at: http://www.mnr.gov.on.ca/en/Business/Forests/%202ColumnSubPage/STEL02_163390.html.

Ministry of Tourism and Culture (MTC)
2011 **Standards and Guidelines for Consultant Archaeologists**. Toronto: Ministry of Tourism and Culture.

Ministry of Tourism, Culture and Sport (MTCS)
2012 **Inquiry Concerning Sites within a One Kilometre Radius of the Project Area (Ontario Archaeological Sites Database) and Past Archaeological Work within 50 m of the Project Area.** Via Email, response provided on November 16, 2012. R. Von Bitter, Archaeology Data Coordinator, Ministry of Tourism, Culture and Sport.

Mississaugas of the New Credit First Nation (MNCFN)
2010 **The History of the Mississaugas of the New Credit First Nation**. Hagersville: Mississaugas of the New Credit First Nation.

Mulvany, C.P., G.M. Adam and C.B. Robinson
1885 **History of Toronto and the County of York, Ontario, Volume 1**. Toronto: C. Blackett Robinson.

Natural Resources Canada (NRC)
2004 **The Atlas of Canada: Ontario Relief**. Accessed online at: http://atlas.nrcan.gc.ca/auth/english/maps/reference/provincesterritoriesrelief/ontario_relief.
2010a **The Atlas of Canada: Historical Indian Treaties Time Line**. Accessed online at: http://atlas.nrcan.gc.ca/auth/english/maps/historical/indiantreaties/historicaltreaties/8.
2010b **The Atlas of Canada: Toporama – Topographic Maps**. Accessed online at: http://atlas.nrcan.gc.ca/site/english/maps/topo/map.

Ramsden, P.G.
1990 *The Hurons: Archaeology and Culture History*. In **The Archaeology of Southern Ontario to AD 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 361-384. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Ray, A.J.
2013 **Hudson's Bay Company**. Accessed online at: http://www.thecanadianencyclopedia.com/articles/hudsons-bay-company.

Schmalz, P.S.
1977 **The History of the Saugeen Indians**. Ottawa: Ontario Historical Society.

Smith, D.B.
1987 **Sacred Feathers: The Reverend Peter Jones (Kahkewaquonaby) and the Mississauga Indians**. Toronto: University of Toronto Press.

Smith, W.H.
1846 **Smith's Canadian Gazetteer: Comprising Statistical and General Information Respecting all Parts of the Upper Province, or Canada West**. Toronto: H. & W. Rowsell.

Spence, M.W., R.H. Pihl and C. Murphy
1990 *Cultural Complexes of the Early and Middle Woodland Periods.* In **The Archaeology of Southern Ontario to A.D. 1650**, edited by Chris J. Ellis and Neal Ferris, pp. 125-170. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

W.J. Gage and Co.
1886 **Gage's County Atlas**. Toronto: W.J. Gage and Co.

Warrick, G.
2000 *The Precontact Iroquoian Occupation of Southern Ontario.* **Journal of World Prehistory** 14(4):415–456.
2005 *Lessons from the Past*. In **Grand Actions**, Volume 10, No. 3, pp. 2–4. Cambridge: The Grand River Conservation Authority.

Williamson, R.F.
1990 *The Early Iroquoian Period of Southern Ontario.* In **The Archaeology of Southern Ontario to A.D. 1650,** edited by Chris J. Ellis and Neal Ferris, pp. 291-320. Occasional Publications of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Williamson, R.F. (ed.)
2008 **Toronto: A Short Illustrated History of its First 12,000 Years.** Toronto: James Lorimer & Company Ltd.

Wright, J.V.
1972 **Ontario Prehistory: An Eleven-Thousand-Year Archaeological Outline**. Archaeological Survey of Canada, National Museum of Man. Ottawa: National Museums of Canada.

APPENDICES

Appendix A: South Branch Wind Farm Project Mapping – Collection Line Re-Route Areas
(Provided by South Dundas Wind Farm LP)