Niagara Region Wind Farm
Renewable Energy Approval
Amendment
Modification Report

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

FWRN LP (the Proponent or FWRN) is developing the Niagara Region Wind Farm (the Project), a 230 MW wind energy project within the Townships of West Lincoln and Wainfleet and the Town of Lincoln within the Niagara Region and within Haldimand County in southern Ontario.

The Project's Renewable Energy Approval (REA) was issued under Ontario Regulation 359/09 of the Environmental Protection Act. The REA was issued on November 6, 2014 (EBR #012-0614). Since receipt of the REA and completion of the Environmental Review Tribunal, FWRN has identified the need to make minor amendments (modifications) to the Project as it was described in the REA Application documents and subsequently approved by the Ministry of the Environment and Climate Change (MOECC).

This report and its attachments provide information regarding the proposed modifications. Based upon the classification system outlined in the Ministry of the Environment and Climate Change's *Technical Guide to Renewable* Energy *Approvals* (Published February, 2014), the proposed modifications include Project Design Changes and Technical Changes. As such, this document has been prepared to address the requirements of Chapter 10 "Making Changes to Renewable Energy Approval (REA) Projects" of the Technical Guide.

2.0 SUMMARY AND RATIONALE FOR MODIFICATIONS

The Project team is continually reviewing design features of the Project layout to consider efficiencies, address stakeholder comments, and further reduce potential environmental impacts. In our opinion, the proposed modifications described below are properly classified as Technical or Project Design Changes because they meet the factors set out in Chapter 10 of the Technical Guide to Renewable Energy Approvals.

To address a recent administrative change to the Project, an application was submitted (under separate cover) to acknowledge the change in ownership of the Project from 'Niagara Region Wind Corporation' to 'FWRN LP', as FWRN LP has purchased the Project.

2.1 PROJECT DESIGN CHANGES

2.1.1 Modification A – Revised Footprint of Interconnect Station

This modification involves the expansion of the footprint for the Interconnect Station on Mountainview Road to accommodate additional equipment in response to Hydro One Networks Inc. (HONI) connection requirements determined during detailed design while also avoiding archaeological resources.

The location of the revised footprint is presented in the attached figures (Appendix A) and discussed in the following sections.

The construction and installation activities for the interconnection station will be completed in the same manner as described in the Construction Plan Report, submitted as part of the REA Application. Additional equipment beyond what was described in the Project Description Report will be installed at this location, including a small building, fence and riser structures, however no transformer is required.

2.1.2 Modification B – Alternate Access Road between T11, T12, T41

This modification involves adding a permanent alternative access road from T11 to T12 and from T11 to T41. The access roads would be located along the collector line route previously approved in the REA. The approved access roads to these turbines are not being modified. The modification would enable the Project to potentially avoid delivery of components from Gore A Road, which has been identified by Haldimand County as a potential concern.

This modification also involves rerouting the collector line and fibre optic line from T11 to T12 to remove angles at which the lines cross from one property to the other. This modification is proposed as a result of reviewing design features of the project layout.

The revised location for the access roads, collector line and fibre optic lines is presented in the attached figures (Appendix A) and discussed in the sections below.

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

2.2 TECHNICAL CHANGES

2.2.1 Modification C – Adjust Footprint of North Substation

This modification involves the adjustment of the footprint for the North Substation (north of the Welland River) to accommodate reorientation of the substation during detailed design to avoid archaeological resources that would require Stage 3 Archaeological Assessment. The footprint would be re-oriented into an area previously assessed as part of the construction laydown area. However, the location of the transformer remains consistent with the REA location as defined in the Noise Assessment Report (NAR) and REA Conditions of Approval.

The revised location for the North Substation is presented in the attached figures (Appendix A) and discussed in the sections below.

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

2.2.2 Modification D – Relocation of Junction Boxes

This modification involves adding operational flexibility to install junction boxes within either the Municipal Right-of-Way, as proposed and approved in the REA, or on participating properties within previously assessed areas along the proposed collector line routes. Currently, the Project is approved to install junction boxes within the Right-of-Way. However, through continued consultation with area municipalities, a request to locate these junction boxes (where feasible) was received. This amendment would provide greater flexibility during the detailed design process to addresses Municipal comments while remaining within previously assessed areas.

The junction boxes will be constructed within the previously assessed constructible areas along the proposed collector and fibre optic lines. There is no increase to the Project Location as a result of this modification.

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

2.2.3 Modification E – Alternate Turbine Model

This modification involves changing 11 of the Project's 80 potential turbines to a customized ENERCON E101 (2.9MW) turbine on 124 m towers from a combination of different ENERCON models. Since the Project's inception and permitting, ENERCON has further reduced the sound characteristics of the E101 turbine through the following:

- limitation of power output to 2.9 MW;
- adjusted power curve for the entire range of operational wind speeds; and
- updates to the generator design.

As a result, the Project no longer wishes to install the 3 ENERCON E-82 turbines on 135 m towers and is proposing to reduce the tower height from 135 m to 124 m for 8 ENERCON E101 turbines, such that all proposed turbines will be at the same hub height (124 m) and the proposed layout will consist of only ENERCON E101 turbines, including 69 E101 3.0MW and 11 E101 2.9MW. This modification will also facilitate meeting the maximum rated capacity of 230 MW.

The number of turbines to be installed will remain the same at 77. However, the amended turbines would be physically lower than the REA approved turbines at these same locations, specifically with a hub height of 124 m (whereby 9 of the 11 turbines at these locations were previously approved at a hub height of 135 m). While this reduction in tower height addresses a potential concern raised by Environment Canada during the review of the REA, the Project remains committed to completing the supplemental bird mortality monitoring outlined in the REA Conditions.

At 3 locations, the rotor diameter for the previously approved ENERCON E82 turbines would increase from 82 m to 101 m; however, the rotor diameter for the amended E101 turbines would remain the same. The assessment of impacts and determination of setbacks for all turbines approved in the REA already assumed a rotor diameter of 101 m.

Specifications of the REA approved turbines and the new turbine model are summarized below in **Table 1**.

Table 1: Basic Wind Turbine Specifications

Parameter	REA Approved Turbine Models		New Turbine Model
Manufacturer	ENERCON	ENERCON	ENERCON
Model	E101	E82	E101
Name plate capacity (MW)	3.0 MW	2.3 MW	2.9 MW
Hub height above grade	124 m or 135 m	135 m	124 m
Blade length	48.6m	38.8 m	48.6 m
Rotor diameter	101 m	82 m	101 m

Table 1: Basic Wind Turbine Specifications

Parameter	REA Approved Turbine Models		New Turbine Model
Blade sweep area	8,012 m²	5,281 m²	8,012 m²
Rotational Speed	Variable, 4 – 14.5 rpm	Variable, 6 - 18 rpm	Variable, 4 – 14.1 rpm
Noise Level	104.8 dBA	103.3 dBA	102.9 dBA
Frequency spectrum	50 Hz or 60 Hz	50 Hz or 60 Hz	50 Hz or 60 Hz

As part of this amendment, one property will no longer be considered a participant in the Project. The short section of fibre optic cable that was approved to cross this property is no longer proposed.

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

2.2.4 Modification F – Alternate Transformer

The transformer selected for the north substation will be rated 90 MVA as a base rating, and 69 MVA for south substation, both with two stages of cooling (via fan), as compared to the 100 MVA transformers modelled and approved in the REA. The location of the sound barrier required at both the north and south substation has been revised through detailed design of each substation. The sound power level of the amended transformer selected is less than that modelled in the NAR as approved in the REA. An updated Acoustic Assessment Report has been prepared to document the sound level for the Transformer including the revised location of the sound barrier considering a conservative assessment using the original 100 MVA transformer. There is no change to the Project Location size as a result of this modification.

2.2.5 Modification G – Revised Access Road Entrances

This modification involves adjustments to access road entrances, on private land owned by participating landowners, based on detailed design (engineering) and need for turning radius (driving surface) at 7 entrance locations:

- Entrance 4 to T79 and T80
- Entrance 22 to T76
- Entrance 27 to T09 and T51
- Entrance 36 to T10 and T37
- Entrance 46 to T84
- Entrance 49 to T99
- Entrance 50 to T20

The revised location for the access road entrances is presented in the attached figures (Appendix A) and discussed in the sections below.

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

3.0 RESULTS OF EFFECTS ASSESSMENT FOR THE PROJECT MODIFICATION

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

A screening to identify any new environmental effects that would require additional mitigation or monitoring measures beyond those outlined in the REA documents as a result of the proposed modifications to the Project was completed.

In summary, none of the proposed minor modifications described above will result in increased negative environmental effects that will or are likely to occur beyond those originally identified, documented and consulted on during the REA process for the original project.

3.1 IMPACTS ON STUDIES/ REA REPORTS

The REA reports require a material change to the content as a result of the modifications. A summary of the amendments to the sections and figures in each REA report and the applicable text change is provided in the table below.

3.1.1 Natural Heritage Assessment and Environmental Impact Study

The NHA/EIS (included in the REA Application) identified natural features within the Project Location and the associated 120 m Zone of Investigation around the limits of the Project Location.

A technical review was conducted to determine if the modifications result in: (a) a change to the identification of natural features within 120 m of the new Project Location; (b) a change to the assessment of impacts and mitigation measures; and/or (c) the overall assessment of changes to the NHA/EIS.

The Project Location associated with Modifications C, D, E, F, and G (all entrances except the one to T79/T80) was previously assessed as part of the NHA/EIS that was submitted as part of the original REA Application and was subsequently accepted by the Ministry of Natural Resources and Forestry (MNRF) in their Confirmation Letter dated April 2, 2013. As such, no additional NHA/EIS was required for Modifications C, D, E, F, and G (all entrances except the one to T79/T80) and all other commitments within the NHA/EIS and Environmental Effects Monitoring Plan (EEMP) for post-construction monitoring, mitigation and contingency measures remain unchanged for these modifications.

The Project Location requires a minor modification to account for:

- Modification A – Revised Footprint of Interconnection Station;
- Modification B – Alternate Access Road between T12, T11 and T41; and
- Modification G – Revised Access Road Entrance (to T79/T80 only).

Following the same methods found in the NRWC NHA/EIS, an additional records review was conducted for the new ZOI to confirm if new known natural features are present. According to the Natural Heritage Information Centre (NHIC, 2015) and Land Information Ontario (LIO, 2015) databases, there are no new areas designated as significant woodland, Area of Natural or Scientific Interest (ANSI), or significant wildlife habitat within the new ZOI. Near Modification B, one new area of Provincially-Significant Wetland (PSW) has been added: Marshville Station PSW Complex. The Project is located within 120 m of this natural feature. The Marshville Station PSW Complex is included in the NHA/EIS; however, this additional wetland community has been added by the MNRF to the Marshville Station PSW complex since the original records review.

No new rare species were identified as potentially occurring in the new ZOI. No additional changes are required to the Records Review of the NHA/EIS.

The new ZOI for modifications A, B, and G (entrance to T79/T80) was surveyed on foot in the field as part of the original NHA/EIS. No new site investigations were required to assess the new ZOI; however, additional site investigations were conducted at Modification B.

No new vegetation communities have been added in the new ZOI. Near modification B, the boundary of woodland wo153 has been updated following removal of a portion of this woodland by the landowner for agricultural purposes (to provide access between two fields owned by the same landowner). This also resulted in the change of the boundary of the corresponding candidate significant wildlife habitats, including candidate amphibian woodland breeding habitat AH48 (no vernal pooling found in this section), deer winter congregation area dc93, and generalized woodland vole habitat. No vegetation removal is required in this woodland or candidate significant wildlife habitat features.

Near modification B, wetland we445 (now part of the Marshville Station PSW Complex) is a new wetland feature. No additional site investigation work was undertaken for this feature as it had been included in the original ZOI. This feature was not identified by Stantec as wetland in the NHA/EIS. The ELC communities in this feature were identified as FOD6-5 Fresh-Moist Sugar Maple-Hardwood Deciduous Forest, FOD9-1 Fresh-Moist Oak-Sugar Maple Deciduous Forest, FOD3-1 Dry to Fresh Poplar Deciduous Forest, FOD5-8 Dry-Fresh Sugar Maple-White Ash Deciduous forest, and FOD9-2 Fresh-Moist Oak-Maple Deciduous Forest (as described for woodland wo153 in the NHA/EIS). The FOD9-1 and FOD9-2 communities have since been identified as PSW by the MNRF, so a conservative approach has been used for this addendum and these ELC communities will be included as a wetland feature (we445) in this NHA addendum.

No new candidate significant wildlife habitats have been added as a result of the modifications. No changes to the original NHA/EIS for the candidate significant wildlife habitat assessments are required.

No new woodlands or candidate significant wildlife habitats were added in the new ZOI. The following updates to the evaluation of significance are required:

- New wetland we445 (part of the Marshville Station PSW Complex) is provincially-significant, as determined by the MNRF. No additional evaluation of significance of this feature is required;
- Wo153 has changed from 25.98 ha to 25.92 ha, and it is still considered a significant woodland;
- Dc93 has changed from 25.98 ha to 25.92 ha, and it is still considered a generalized significant deer winter congregation area; and,
- Generalized woodland vole habitat corresponding with the boundary of wo153 has changed from 25.98 ha to 25.92 ha, and it is still considered a generalized significant woodland vole habitat.

Snake hibernaculum feature SH3, located within 120 m of the new access road to T12 (modification B), was found to be not significant during pre-construction surveys (Stantec, 2014). Candidate amphibian woodland breeding habitat AH48 was found to be not significant in the original NHA (Stantec, 2013).

Minor changes to the EIS are required to address that the constructible area for the access road to T12 is now located within 120 m of wo153, we445, dc93, and woodland vole habitat. An EIS was conducted for each and confirmed mitigation measures specific to all significant woodlands are outlined in Table 6.1, Appendix B in the NHA/EIS, and no changes are required for wo153, we445, dc93, and woodland vole habitat.

It was concluded that overall, the modifications can be implemented with no new net negative environmental effects. See Appendix B for a copy of the NHA/EIS Addendum.

3.1.2 Water Assessment and Water Body Report (WAWBR)

The WAWBR (included in the REA application) identified water bodies within the Project Location and the associated 120 m Zone of Investigation (ZOI) around the limits of the Project Location.

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

The revised Project Location associated with Modification B, C, and G was previously assessed as part of the WAWBR that was submitted as part of the original REA application. Modification A is associated with a revised Project Location that extends the 120 m ZOI into an area that was not previously accessed; however no new additional assessment was required as no new water features were identified within the extended 120m ZOI. Lastly, Modification D, E and F will result in no change to the Project Location.

Additional site visits were not required to determine the status and boundary of water bodies. Water bodies that occur in or within 120 m of the revised Project Location are already identified on the maps provided within the WAWBR as approved in the REA. The evaluation of water bodies in the WAWBR does not change as a result of the Project modifications.

Since no new water body features were identified as a result of the new Project Location, the standard mitigation measures previously identified in the WAWBR as approved in the REA still apply. The modified Project Location will result in no changes to the tables in the WAWBR.

It was concluded that the modifications will not result in potential effects not previously identified and mitigated in the WAWBR.

3.1.3 Heritage Impact Assessment

The Project Location associated with Modifications A, B, C, D, E, F, G was previously assessed as part of the Heritage Impact Assessment that was submitted as part of the original REA Application and was subsequently accepted by the Ministry of Tourism, Culture and Sport (MTCS) in their Confirmation Letter dated April 12, 2013. As such, no additional Heritage Impact Assessment was required for these modifications.

Impact assessments contained within the Heritage Impact Assessment were determined to remain valid for all properties.

It was determined that the recommendations contained within the Heritage Impact Assessment do not need to be modified.

It was concluded that the modifications will not result in potential effects not previously identified and mitigated in the Heritage Impact Assessment.

3.1.4 Protected Properties Assessment

The Project Location associated with Modifications A, B, C, D, E, F, G was previously assessed as part of the Protected Properties Assessment that was submitted as part of the original REA Application and was subsequently accepted by the Ministry of Tourism, Culture and Sport (MTCS) in their Confirmation Letter dated April 12, 2013. As such, no additional Protected Properties Assessment was required for these modifications.

Impact assessments contained within the Protected Properties Assessment were determined to remain valid for all properties.

It was determined that the recommendations contained within the Protected Properties Assessment do not need to be modified.

It was concluded that the modifications will not result in potential effects not previously identified and mitigated in the Protected Properties Assessment.

3.1.5 Stage II Archaeological Assessment

The Project Location associated with Modification A, D, E, F and G (for entrances 4, 22, 27, 46, 49, and 50) was previously assessed as part of the Stage II Archaeological Assessment that was submitted as part of the original REA Application and was subsequently accepted by the MTCS in their Confirmation Letter dated March 13, 2013. As such, no additional Stage II Archaeological Assessment was required for these modifications.

The Project Location associated with Modification B, C and G (for entrance 36 only) was not previously assessed as part of the Stage II Archaeological Assessment that was submitted as part of the original REA Application. As such, additional Stage II Archaeological Assessment was completed for Modification B, C and G (for entrance 36 only). See Appendix C for a copy of the Stage II Archaeological Assessment addendum.

It was concluded that the Stage II Archaeological Assessment resulted in the identification of no archaeological resources, and therefore it is recommended that no further archaeological assessment of the study area is required.

3.1.6 Noise Impact Assessment

The Noise Assessment Report was updated to consider the alternate turbine model and to amend the location of the proposed noise walls in Modification E and F. The predicted sound level at all receptors was remodeled in the updated Acoustic Assessment Report (updated AAR) with the following results:

- 1,275 of the noise receptors decreased by a value ranging from 0.1 to 1.9 dBA relative to the approved layout;
- 19 of the noise receptors increased by a value ranging from 0.1 to 0.7 dBA relative to the approved layout, all of which remain below the noise threshold of 40.0 dBA; and
- no changes were identified for the remaining noise receptors.

Overall, the proposed modification to the 11 turbines and revised location of the proposed noise walls at the north and south transformer are predicted to improve the acoustical conditions for the Project. As with the approved Project, the predicted noise emissions during the Project's

predictable worst case operation, based on the proposed changes, will continue to meet the MOE criteria at all Points of Reception with the inclusion of noise barriers at both the north and south transformer substations.

3.1.7 Summary of Impacts/Changes to REA Reports and Studies

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

Table 2: Summary of Impacts/Changes to REA Reports & Studies

REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
REA REPORTS			
Project Description Report	Yes	1, 2.1, 2.20, 2.28, 2.31, 2.35, 2.39, 2.41, 2.43, 2.48, 2.54	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances, Appendix A (Modification A, B, C, D, and G). Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 3.1: (a) amend text to remove the use of ENERCON E82, (b) update text to a rated capacity ranging from 2.9MW to 3.0MW, (c) Table 3.1 – amend text to remove turbine specifications for E82 and remove 135 m hub height, include new turbine model specifications for the customized ENERCON E101 (2.9MW), and (d) Table 3.2 – update turbine hub height and remove turbine model E82. Section 3.2.4: (a) update text to 90 MVA base rating for north transformer and 69 MVA for the south transformer, and (b) update locations of the north and south transformer sound barrier.
Construction Plan Report	Yes	1, 2.1, 2.20, 2.28, 2.31, 2.35, 2.39, 2.41, 2.43, 2.48, 2.54	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances, Appendix A (Modification A, B, C, D, and G). Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 2.0: (a) amend text to remove reference to ENERCON E82, (b) Table 2.1 – update text to90 MVA base rating for north transformer and 69 MVA for the south transformer, (c) update the locations of the north and south transformer sound barrier and (d) update the potential location for junction boxes.
Design & Operations Report	Yes	1, 2.1, 2.20, 2.28, 2.31, 2.35, 2.39, 2.41, 2.43, 2.48, 2.54	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances, Appendix A (Modification A, B, C, D, and G). Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 2.1: (a) update turbine hub height, and (b) amend text to remove reference to ENERCON E82. Section 3.1: (a) Table 3.1 update turbine specifications to include the customized

Table 2: Summary of Impacts/Changes to REA Reports & Studies

REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
			ENERCON E101 (2.9MW), and (b) amend text to remove reference to ENERCON E82.
Decommissioning Plan Report	No	n/a	There are no figures within the Decommissioning Plan Report to be updated. Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 3.3: (a) amend text to remove reference to E82 and revise text to one proposed hub height.
Consultation Report	Yes	n/a	Consultation with government representative has been undertaken for the proposed modifications to the Project, including MOECC, MNRF and MTCS, and the mechanism to update the project documents and communicate these changes to stakeholders is described in Section 3 of this Modification Document. Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer.
ADDITIONAL REPORTS			
Natural Heritage Assessment Report	Yes	1, 2.1, 2.20, 2.28, 2.31, 2.35, 2.39, 2.41, 2.43, 2.48, 2.54; 3.1, 3.20, 3.28, 3.35, 3.39, 3.41, 3.43, 3.48, 3.54; 4.1, 4.20, 4.28, 4.35, 4.39, 4.41, 4.43, 4.48, 4.54; 5.1, 5.20, 5.28, 5.35, 5.39, 5.41, 5.43, 5.48, 5.54; 6.1, 6.20, 6.28, 6.35, 6.39, 6.41, 6.43, 6.48, 6.54; 7.1, 7.20, 7.28, 7.35, 7.39, 7.41, 7.43, 7.48, 7.54	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances, Appendix A (Modification A, B, C, D, and G). Executive Summary: a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Approved NHA/EIS was completed assuming a rotor diameter of 101 m at all turbine locations, including those previously approved as E82 turbines. No change in turbine location required. See Appendix B for a copy of the Natural Heritage Assessment Addendum.
Water Assessment and Water Body Report	Yes	1, 3.1, 3.20, 3.28, 3.35, 3.39, 3.41, 3.43, 3.48, 3.54, 4.1, 4.20, 4.28, 4.35, 4.39, 4.41, 4.43,	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances, Appendix A (Modification A, B, C, D, and G). Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base

Table 2: Summary of Impacts/Changes to REA Reports & Studies

REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
		4.48, 4.54	rating for north transformer and 69 MVA for the south transformer. Section 3.0: (a) Table 3.2 – update number of access roads for the Unnamed Tributary to UWR 3 (T072-1) to recognize new crossing to T41. Section 4.3: (a) Table 4.11 – update number of crossings for T072-1. Section 4.1.4: (a) Table 4.5 – updated proposed works for T072-1 to include access road from T11 to T12 to T41. Approved WAWBR was completed assuming a rotor diameter of 101 m at all turbine locations, including those previously approved as E82 turbines. No change in turbine location required.
Stage 1 Archaeological Assessment	Yes	1	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances, Appendix A (Modification A, B, C, D, and G). Section 2.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer.
Stage 2 Archaeological Assessment	Yes	1, 3, 29, 30, 32, 39, 43, 48, 49, 56, 60, 61	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances (Modification A, B, C, D, and G). Section 2.1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. See Appendix C for a copy of the Stage 2 Archaeological Assessment Addendum.
Heritage Assessment Report	Yes	3, 4, 5, 6, 7, 12, 13, 14, 15, 16	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised Access Road Entrances (Modification A, B, C, D, and G). Section 1.2: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 1.3.2: (a) amend text to remove reference to 135m hub height and update blade length to 48.6 m, and (b) remove Visual Aid 3: Turbine Scale Schematic (135m hub height) and Visual Aid 4: Turbine Scale Schematic, with trees (135m hub height).
Protected Properties Assessment	Yes	2, 6, 7, 8, 9, 10	Figures to be updated to display the revised Footprint of Interconnect Station, Alternate Access Road from T11 to T12 to T41, Footprint of North Substation, and revised

Table 2: Summary of Impacts/Changes to REA Reports & Studies

REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
			Access Road Entrances (Modification A, B, C, D, and G). Section 1.2: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 1.3: (a) amend text to remove reference to 135m hub height, and (b) remove reference to E82 blade length to 38.8 m.
Wind Turbine Specifications Report	Yes	n/a	Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 2.1: (a) amend text to remove the use of ENERCON E82, and (b) Table 2.1 – amend text to remove turbine specifications for ENERCON E82 and remove 135 m hub height, update to include new turbine model specifications for the customized ENERCON E101 (2.9MW). Section 2.2: (a) amend text to remove the use of ENERCON E82, and (b) update turbine hub height. Appendix A: update turbine specifications manual from manufacturer.
Acoustic Assessment Report	Yes	Yes	A revised Acoustic Assessment Report, including updated model and figures has been completed for alternate transformer, turbine model and noise wall coordinates at the north and south substation, Appendix D (Modification E and F). Executive Summary: amend text to describe proposed changes to the project assessed in the updated AAR. Section 2.2: (a) amend text to remove the use of ENERCON E82, and (b) amend text to a 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 2.3: (a) amend text to remove the use of ENERCON E82, and (b) Table 2.1 – update turbine specifications to include the customized ENERCON E101 (2.9MW). Section 2.4: (a) update turbine hub height to 124 m, (b) amend text to remove the use of ENERCON E82, and (c) update turbine specifications to include 11customized ENERCON E101 (2.9MW). Section 3.1: (a) amend text to remove the use of ENERCON E82, (b) amend noise sources to include 69 E101 3MW and 11 E101 2.9MW turbines, (c) amend text to describe transformer rating of 90 MVA for north transformer and 69 MVA for the south transformer, (d) Table 3.1, 3.2 and 3.4 – update with sound emission data for the customized E101 2.9MW and to remove the use of ENERCON E82, (e) Table 3.5 - update

Table 2: Summary of Impacts/Changes to REA Reports & Studies

REA Reports & Studies	Change (Yes/No)	Figure No.	Discussion of change / Justification for 'no' change
			to identify the following turbines as customized ENERCON E101 2.9 MW turbines on 124 m towers: T18, T33, T34, T36, T45, T46, T47, T53, T55, T60, T74, and (f) Table 3.6 – amend text to describe transformer rating of 90 MVA for north transformer and 69 MVA for the south transformer. Section 4.2: amend the number of participating and non-participating occupied receptors to reflect the removal of POR_2550 from the project. Section 6.2: (a) amend text to describe transformer rating of 90 MVA for north transformer and 69 MVA for the south transformer. Update Figure 6.1 and Figure B1 (Appendix B): (a) remove use of ENERCON E82, (b) revise layout to include 69 ENERCON E101 turbines and 11 customized ENERCON E101 turbines, and (c) update sound level contours (40 dBA). Update Appendix C predicted sound levels based on the updated noise model reflecting changes described above. Update Appendix D to include test data for the customized ENERCON E101 turbine and to remove the test data for the ENERCON E82 turbine. Update Appendix E sample calculations based on the changes described above. Update Appendix F: (a) include manufacturer's catalogue data for the customized ENERCON E101 turbine, (b) remove relevant ENERCON E82 turbine information and (c) amend text to describe transformer rating of 90 MVA for north transformer and 69 MVA for the south transformer. See Appendix D for a copy of the updated Acoustic Assessment Report.
Property Line Setback Assessment	Yes	1.1 -1.80a	Figures to be updated to display the revised, Alternate Access Road from T11 to T12 to T41, and revised Access Road Entrances (Modification B and G) and to remove 135m Buffer (Hub Height), Appendix A. Section 1.1: (a) update text to a rated capacity ranging from 2.9MW to 3.0MW, 90 MVA base rating for north transformer and 69 MVA for the south transformer. Section 2.0: (a) amend text to remove 135m hub height. No changes are being made to the turbine locations for this project as property line setbacks were based on ENERCON E101 turbines at all locations, including those previously approved as E82 turbines, for both 124 m and 135 m turbine hub heights.

4.0 CONSULTATION

Consultation regarding the proposed modification was undertaken with the MOECC, MNRF, MTCS, municipalities, stakeholders and local Aboriginal communities. Details are provided in the subsequent sections.

4.1 GENERAL STAKEHOLDER CONSULTATION

FWRN LP will provide notification to stakeholders included on the Project distribution list regarding the proposed modification and application to the MOECC for an amendment to the Project's REA. A Notice of Proposed Change to a Renewable Energy Project will be distributed, and will provide an overview of the proposed change, notification that a Modification Report to amend the Project's REA has been submitted to the MOECC for review, information regarding availability of the Modification Report on the Project website.

The Notice and Modification Report will be posted on the Project website, to ensure the community is adequately informed of the proposed change. The Notice will be mailed to all Project stakeholders, including agencies, municipalities, Aboriginal communities, and community members that are on the Project distribution list. The Notice will also be published on at least two separate days within newspapers with general circulation in the Project area.

4.2 AGENCY CONSULTATION

- Consultation regarding the proposed modifications was undertaken with the MOECC via this Modification Document and as per a letter submitted to the MOECC dated July 24, 2015 (Appendix E).
- The Notice of Project Change will be provided to the MOECC.
- The MNRF was advised of the proposed modifications through a letter addendum to the NHA/EIS (Appendix B). Consultation with the MNRF regarding changes to the NHA/EIS included obtaining written confirmation (Appendix B) that the MNRF is satisfied that the NHA requirements of O. Reg. 359/09 have been met.
- The MTCS was advised of the proposed modifications through this Modification Report and letter addendums to the Stage 2 Archaeological Assessment (Appendix C). Consultation with the MTCS regarding changes to these assessments included obtaining written confirmation included obtaining written confirmation (Appendix C) that the MTCS is satisfied that the assessments met the requirements of O. Reg. 359/09.

A copy of this Modification Document has been provided to the MNRF and MTCS for their information.

A copy of this Modification Document will be placed on the Project website.

4.3 MUNICIPAL CONSULTATION

A hard and/or soft copy of this Modification Document will be provided to the following municipalities:

- Township of West Lincoln;
- Township of Wainfleet;
- Township of Pelham;
- Town of Grimsby;
- Town of Lincoln;
- Niagara Region; and
- Haldimand County.

4.4 ABORIGINAL COMMUNITY ENGAGEMENT

A hard and/or soft copy of this Modification Document will be provided to:

- Six Nations of the Grand River;
- Six Nations of the Grand River Haudenosaunee Confederacy Chiefs Council (via HDI);
- Mississaugas of the New Credit First Nation; and
- Metis Nation of Ontario/Niagara Region Metis Council.

5.0 CLOSURE

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

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

Stantec Consulting Ltd.

Prepared by _____
(signature)

Andrea Terella, Environmental Planner

Prepared by _____
(signature)

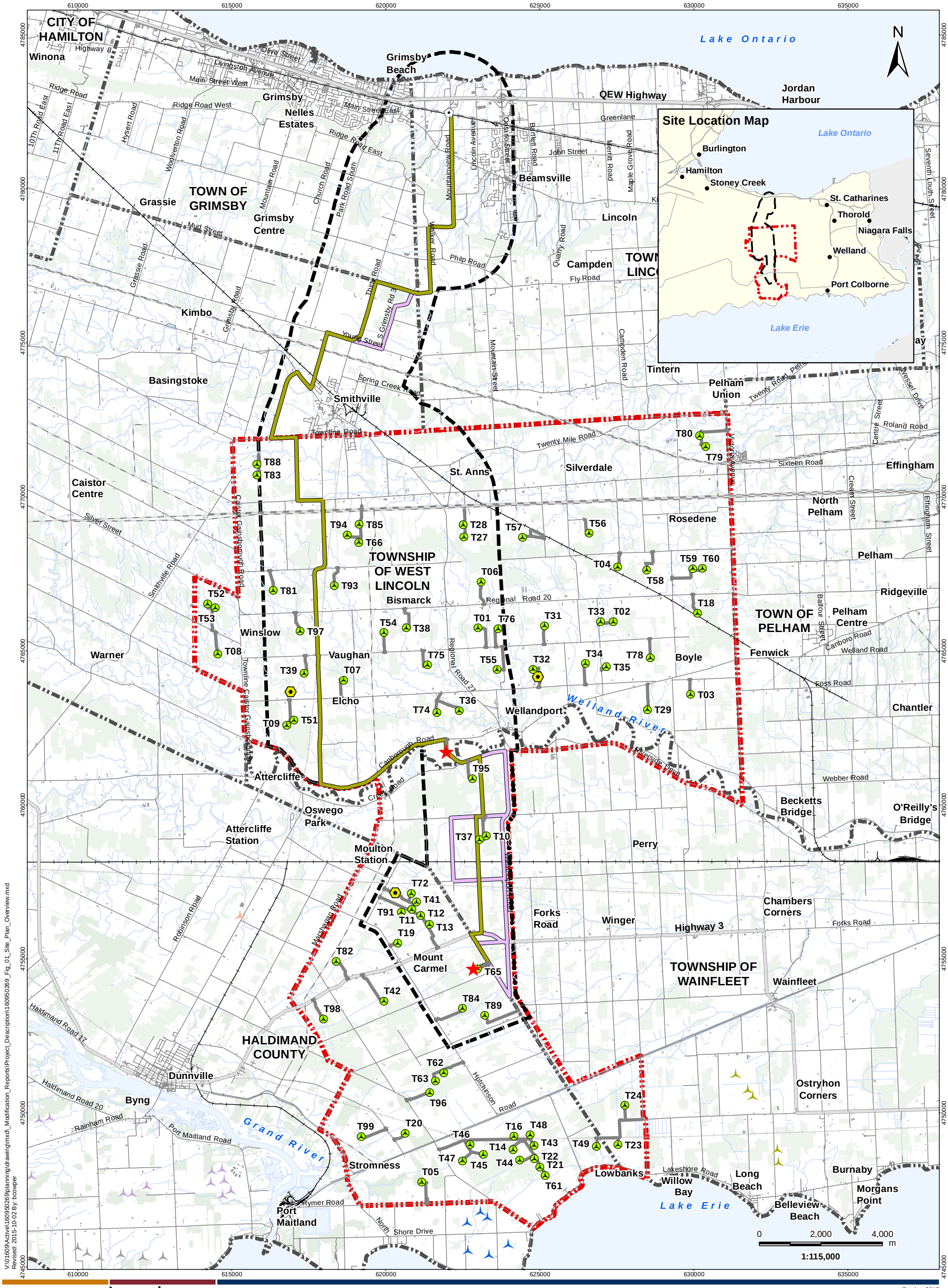
Kerrie Skillen, Environmental Planner

Reviewed by _____
(signature)

Chris Powell, Project Manager

Appendix A:

Figures



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Revised: 2015-10-02 By: bcowper

Legend

- Project Study Area
- Interconnector Study Area
- Proposed Turbine Location
- Potential Acesss Road
- Transformer Substation
- Tap-in Location
- Existing Met Tower
- Preferred Transmission Route
- Alternate Tranmission Route
- Road
- Expressway / Highway
- Active Railway
- Abandoned Railway
- Existing Structures
- Existing Transmission Line
- Watercourse
- Waterbody
- Wooded Area
- Municipality Lower Tier

Other Wind Turbines

- Mohawk Wind Farm (Existing)
- Rosa Flora Turbine (Existing)
- Wainfleet Wind Energy Project (Proposed)
- HAF Wind Energy Project (Proposed)
- Grand Renewable Energy Project
- Other Wind Farm Projects

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.

Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
1

Title
Overview Site Plan

October 2015
160950269

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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource

- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011.
3. Orthoimagery source: First Base Solutions, Date Spring 2010.
4. Petroleum Well source: © Ontario Oil, Gas and Salt Resource Library, 2010.
5. MOE Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2012.
6. Noise receptors are identified within 1500m of any wind turbine.

Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.1

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.1

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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource
- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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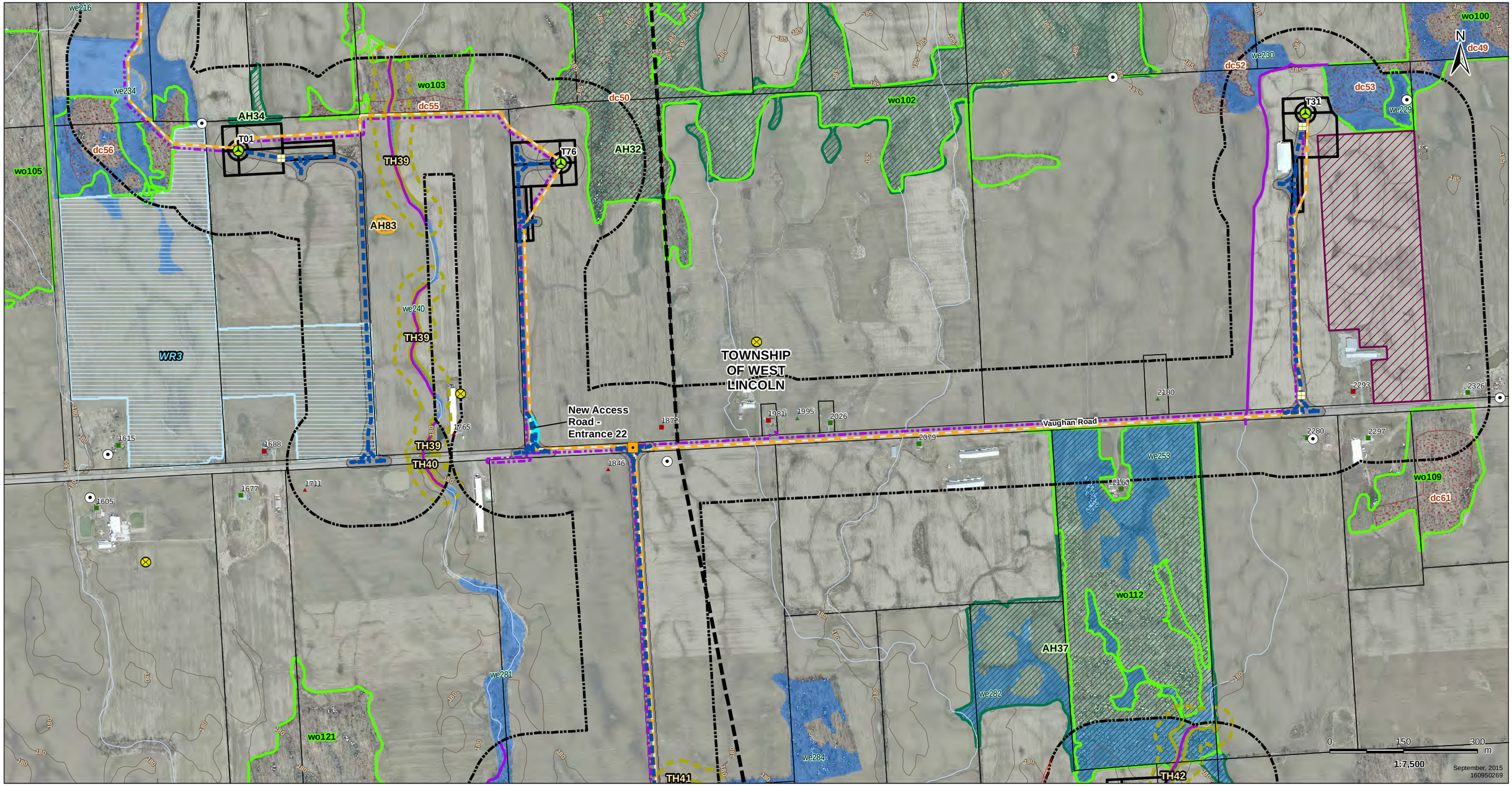
5. MOE Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2012.
6. Noise receptors are identified within 1500m of any wind turbine.

Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.20

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.20



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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource

- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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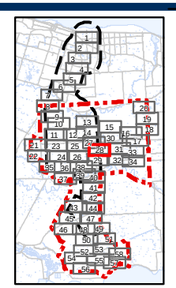
4. Petroleum Well source: © Ontario Oil, Gas and Salt Resource Library, 2010.
5. MOE Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2012.
6. Noise receptors are identified within 1500m of any wind turbine.



Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.28

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.28

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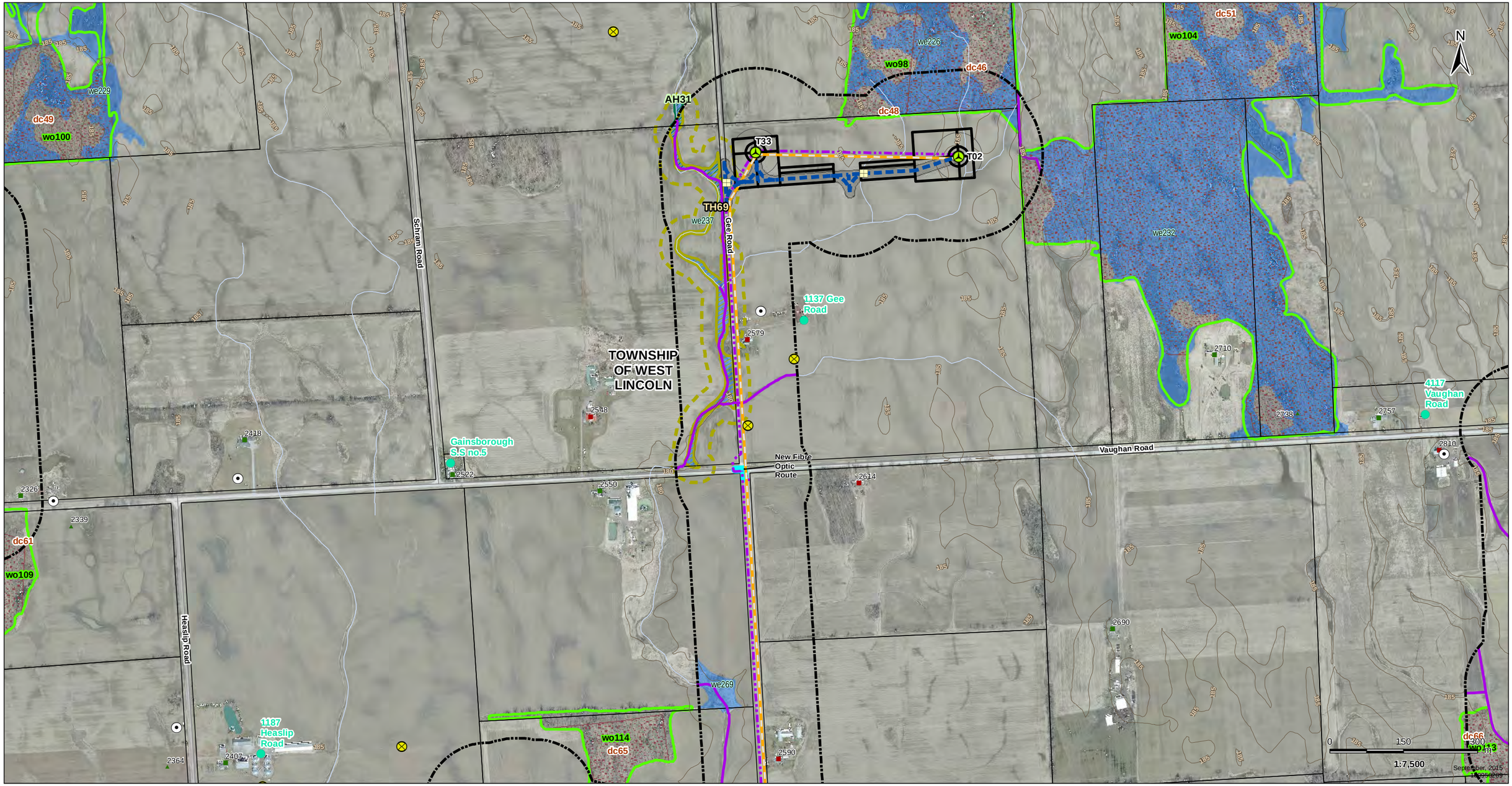

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource
- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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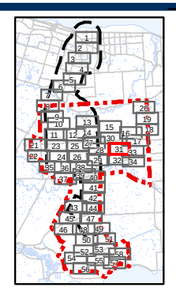
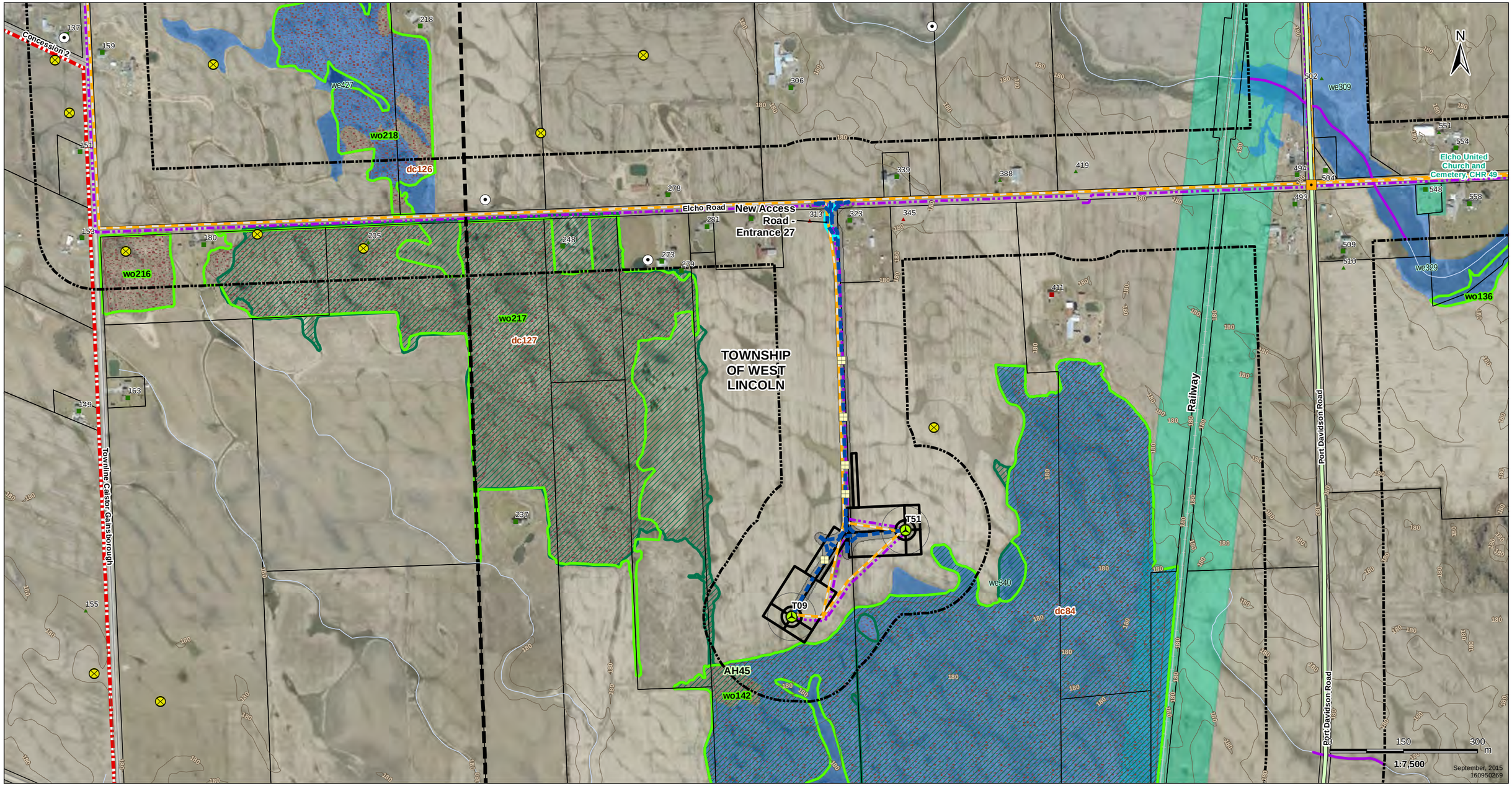
4. Petroleum Well source: © Ontario Oil, Gas and Salt Resource Library, 2010.
5. MOE Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2012.
6. Noise receptors are identified within 1500m of any wind turbine.



Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.31

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.31



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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource
- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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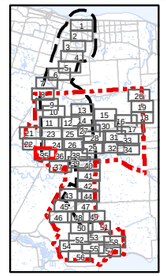
6. Noise receptors are identified within 1500m of any wind turbine.



Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.35

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.35

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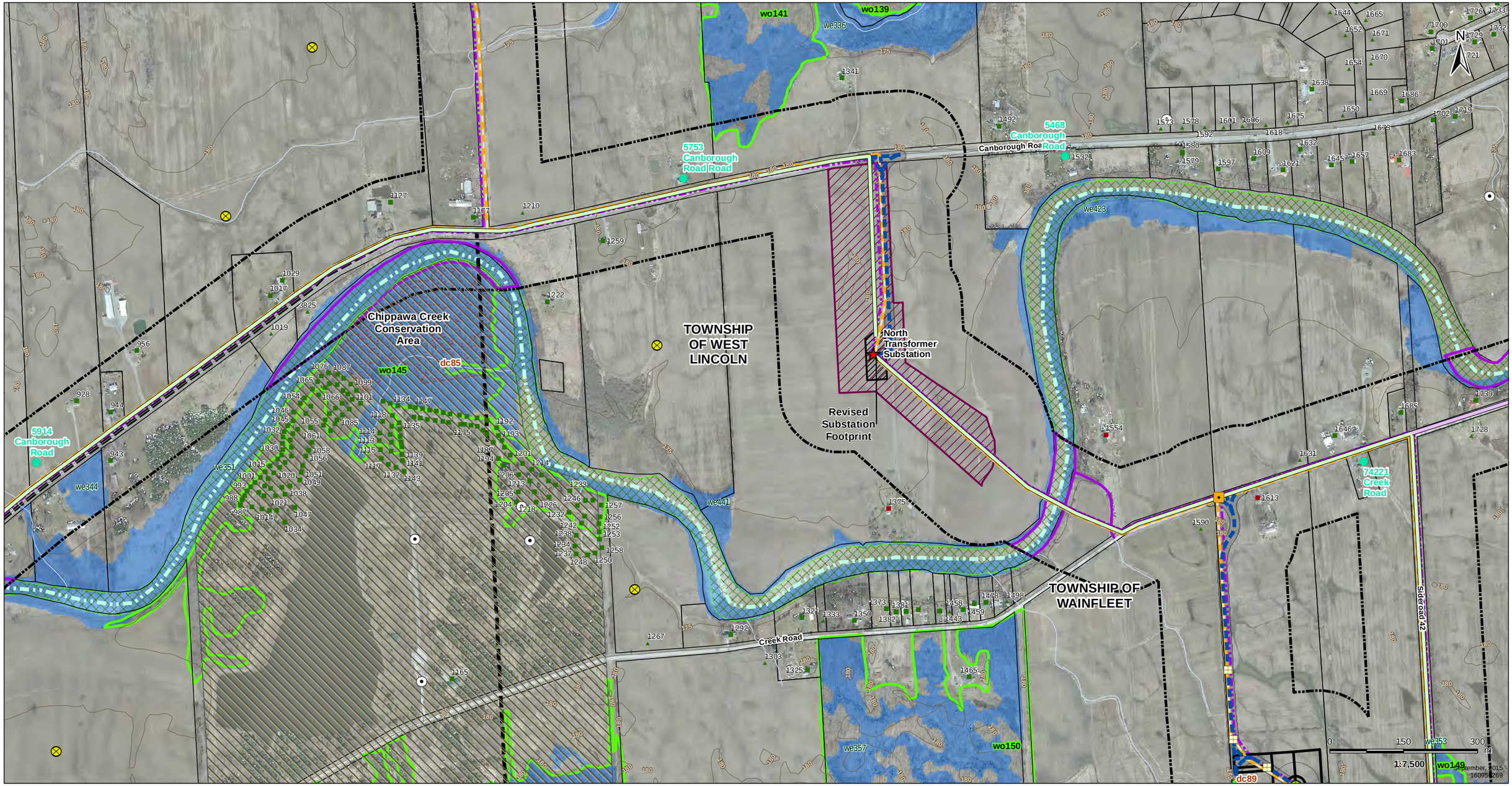
Revised: 2015-09-21 By: bcowper



Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource
- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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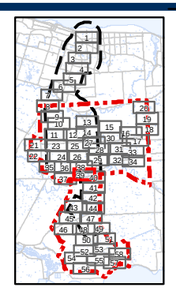
6. Noise receptors are identified within 1500m of any wind turbine.

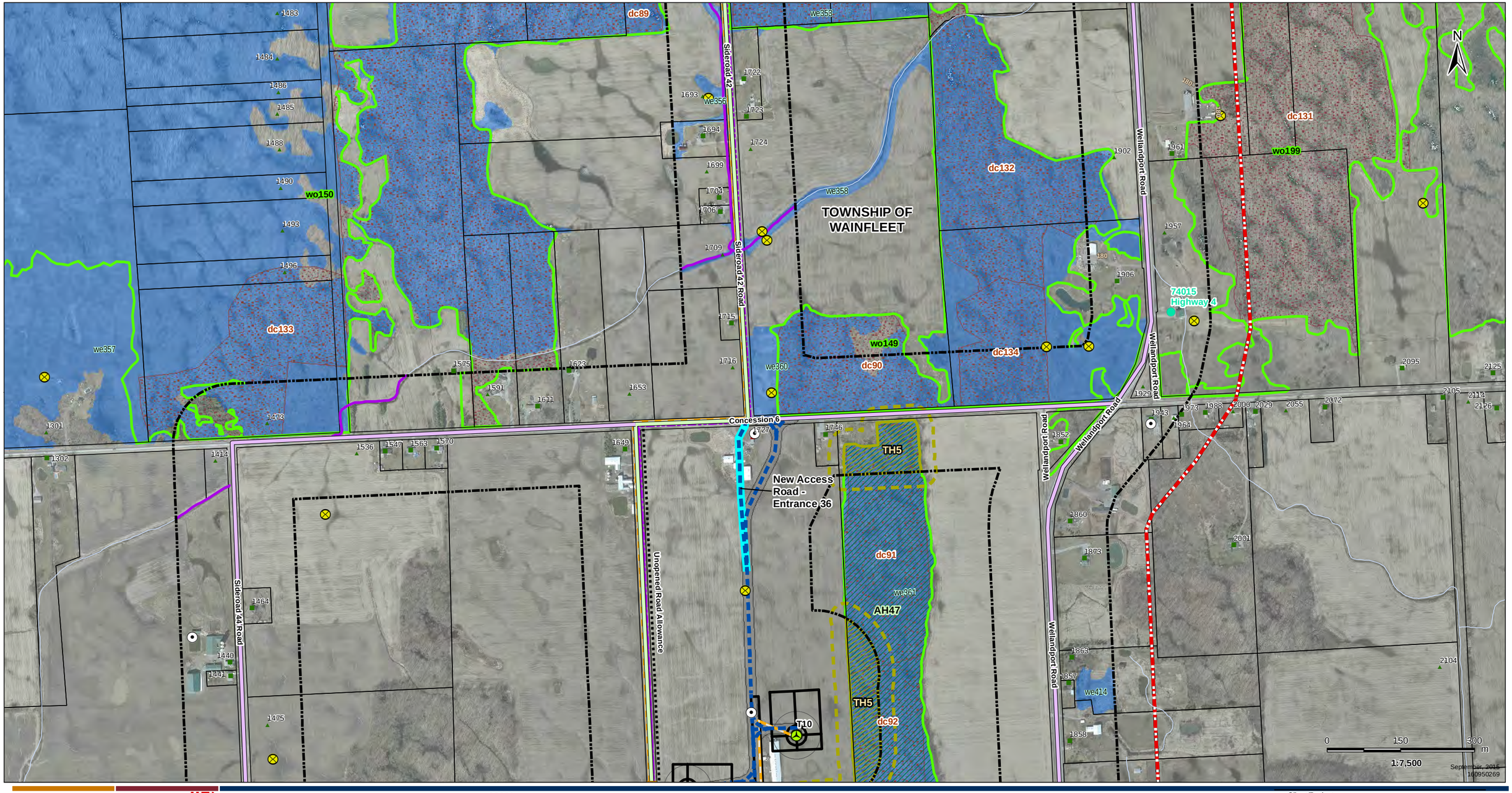


Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.39

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.39

V:\01609\Active\160950269\planning\drawing\mxd_Modification_Reports\Project_Description\160950269_Fig_02_Site_Plan_With_Socio_Eco_Natural_Features_Mapbook.mxd
Revised: 2015-09-21 By: bcowper



Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource
- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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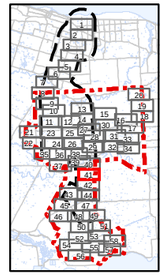

Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.41

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.41

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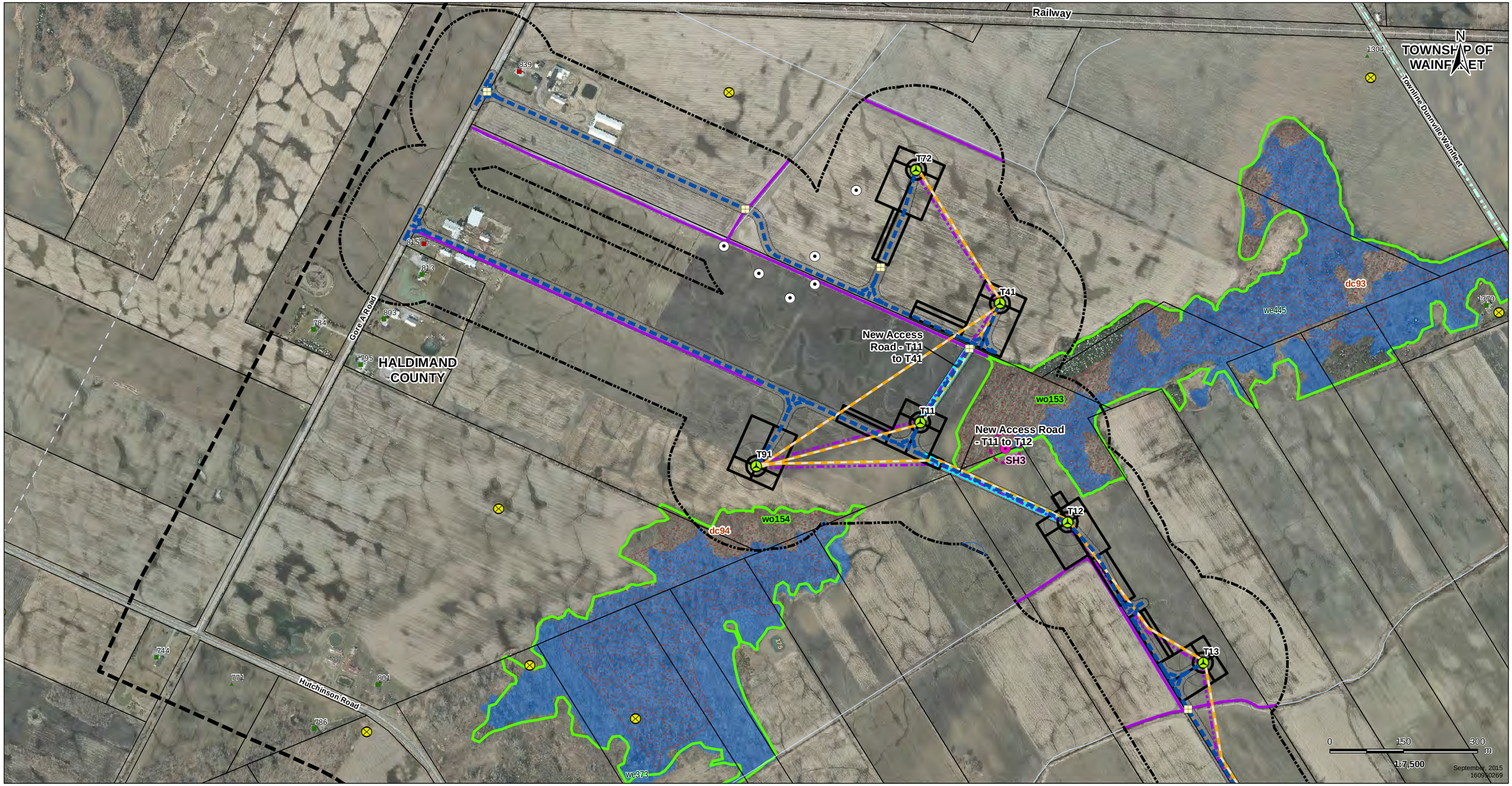
Revised: 2015-09-21 By: bcowper



Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource

- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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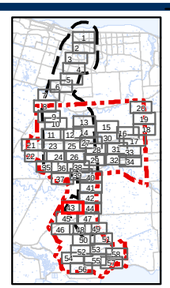

Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.43

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.43

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Revised: 2015-09-21 By: bcowper

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource

- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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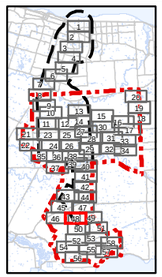
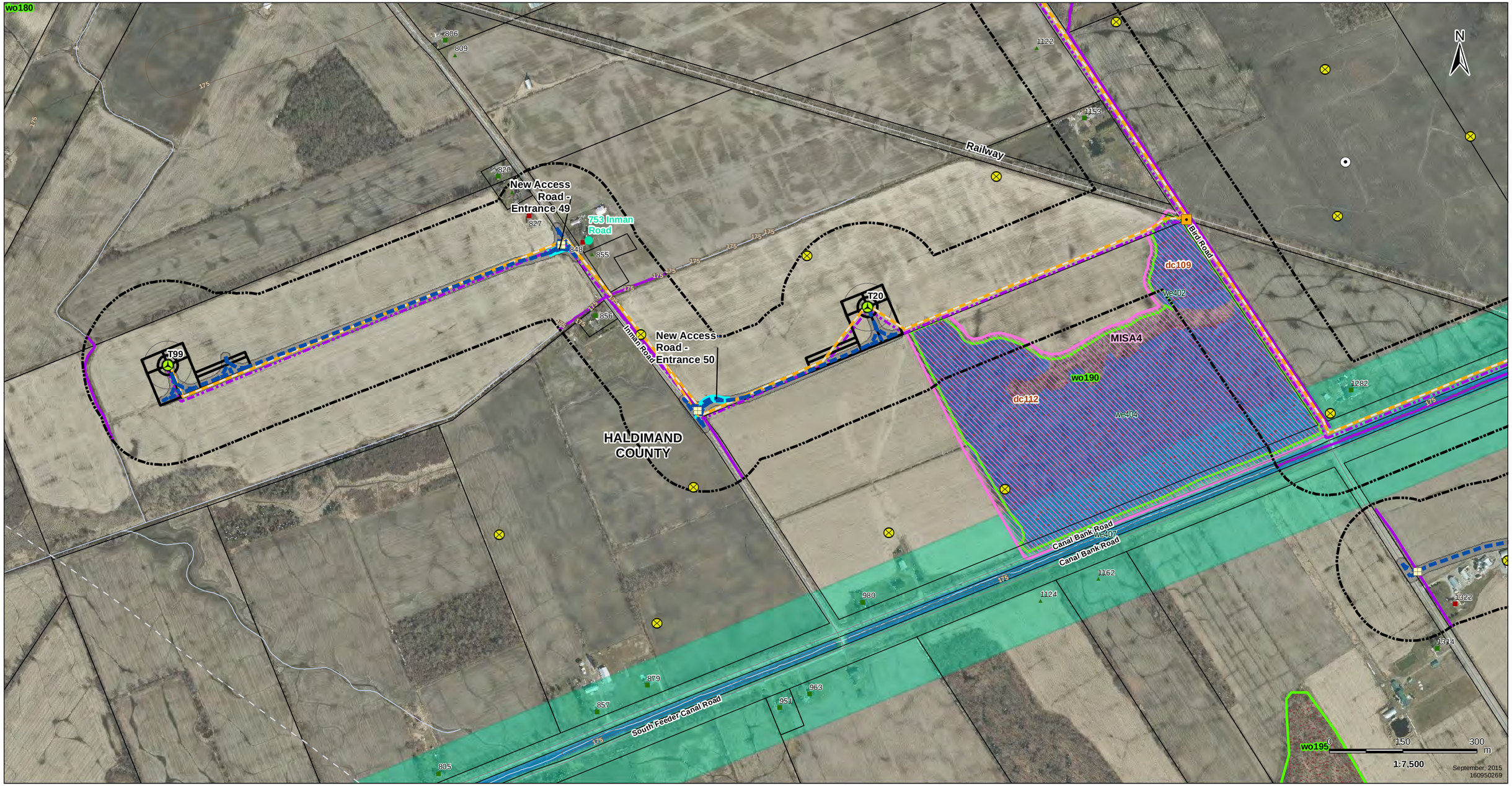


Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.48

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.48



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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments
- Area Added
- Area Removed

Proposed Project Components
- Proposed Turbine Location
- Turbine Blade Length
- Tap-in Location
- Transformer Substation Location
- Junction Box
- Proposed Culvert
- Preferred Transmission Line Route
- Alternate Transmission Line Route
- Temporary Laydown Area
- Collector Lines – Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation

Existing Features
- Road
- Expressway / Highway
- Unopened Road Allowance
- Active Railway
- Abandoned Railway
- Existing Transmission Line
- Pipeline
- Topographic Contour (mAMSL)
- Watercourse (MNR)
- Waterbody (Stantec)
- Property Boundary
- Municipality Lower Tier
- Niagara Escarpment Plan Area (NEC)
- Greenbelt Natural Heritage System
- Conservation Areas (NPCA)
- Greenbelt Plan Area (MMAH)

Significant Wildlife Habitat
- Snake Hibernacula
- Snake Hibernacula 30m Buffer
- Raptor Wintering Areas
- Deer Congregation Areas (MNR) (Generalized)
- Wetland Amphibian Breeding Habitat
- Woodland Amphibian Breeding Habitat
- Other Rare Vegetation Community
- Landbird Migratory Stopover
- Turtle Nesting Habitat/ Snapping Turtle Habitat
- Turtle Habitat 30m Buffer
- Turtle Wintering Area

Significant Natural Features
- Woodland Communities
- Wetland Communities
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)

Cultural Heritage Features
- Protected Property
- Cultural Heritage Resource

- Landfill - Active (MOE)
- Landfill - Closed (MOE)
- Petroleum Well (OGSR) [4]
- Water Well (MOE) [5]

Non-participating Receptors [5]
- Occupied
- Vacant

Participating Noise Receptors [5]
- Occupied
- Vacant

Notes

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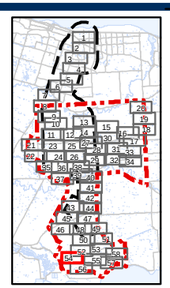
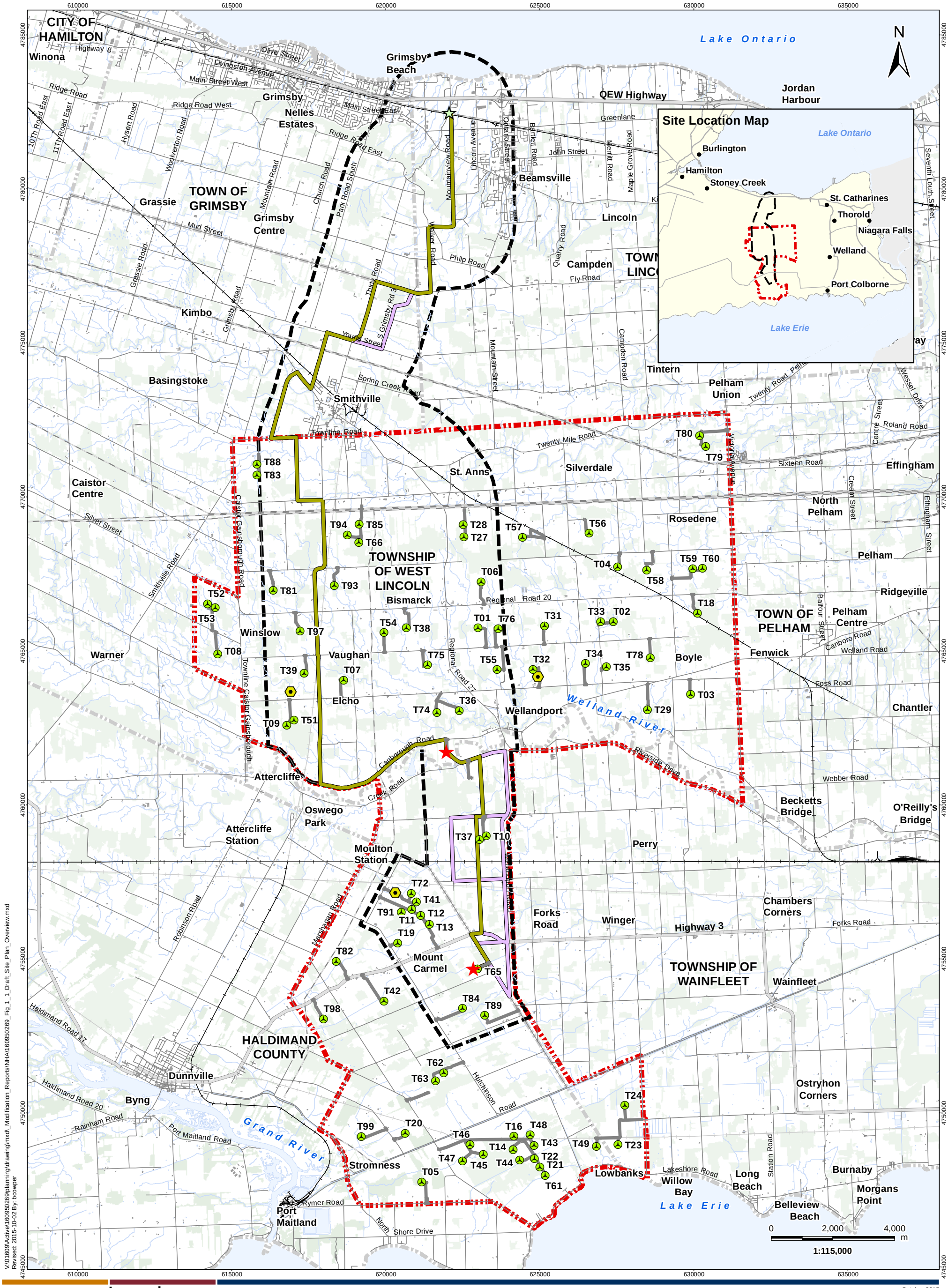


Client/Project
FWRN LP
Niagara Region Wind Farm

Figure No.
2.54

Title
Site Plan with Socio-Economic Features, Significant Natural Heritage Features and Water Bodies Figure 2.54



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Revised: 2015-10-02 By: bcowper

Legend

- Project Study Area
- Interconnector Study Area
- Proposed Turbine Location
- Potential Acesss Road
- Transformer Substation
- Tap-in Location
- Existing Met Tower
- Preferred Transmission Line Route
- Alternate Transmission Route
- Road
- Expressway / Highway
- Active Railway
- Abandoned Railway
- Existing Structures
- Existing Transmission Line
- Watercourse
- Waterbody
- Wooded Area
- Municipality Lower Tier

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Client/Project
FWRN LP
Niagara Region Wind Farm

October 2015
160950269

Figure No.
1

Title

Draft Site Plan Overview Revised

621000 621500 622000 622500 623000 623500

4782500

4782000

4781500

North Service Road

QEW Highway

South Service Road

Andrewes Court

Durham Road

Iroquois Trail

Main Street East

Vinafera Drive

Chardonnay Place

King Street

Thirty Road

Mountainview Road

Revised Interconnector Footprint

Lincoln Avenue

Greenlane

Cedarbrook Lane

St. Volodymyr Court

Boulevard

N

0 150 300 m

1:7,500

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Revised: 2015-09-21 By: bcowper

September, 2015
160950269

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

- Area Added
- Area Removed
- Proposed Turbine Location
- Turbine Relocated
- Turbine Blade Length
- Tap-in Location
- Junction Box
- Proposed Culvert
- Temporary Laydown Area
- Collector Lines - Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
- Transformer Substation
- Unevaluated Wetland (NPCA)
- Woodland (MNR)
- Provincially Significant Wetland (MNR)
- Other/Locally Significant Wetland (MNR)
- Deer Wintering Yard (MNR)
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)
- ANSI, Life Science, Regionally Significant (MNR)
- Greenbelt Natural Heritage System
- Niagara Escarpment

Notes

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Client/Project
FWRN LP
Natural Heritage Assessment Report

Figure No.
2.1

Title
Records Review - Natural Features Figure 2.1 Revised

629500 630000 630500 631000 631500 632000

4772000 4771500 4771000

New Access Road - Entrance 4

T80

T79

Upper Sixteen Mile Creek Wetland Complex

Victoria Avenue

Moote Road

Fifteen Mile Creek Above Escarpment

Sixteen Road

Mcglashan Street

N

0 150 300 m

1:7,500

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Revised: 2015-09-21 By: bcowper

September, 2015
160950269

Stantec

Legend

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- Interconnector Study Area
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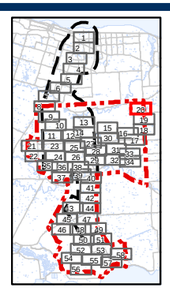

Client/Project
FWRN LP
Natural Heritage Assessment Report

Figure No.
2.20

Title
Records Review - Natural Features Figure 2.20 Revised

623000 623500 624000 624500 625000 625500

4766000 4765500 4765000 4764500

T01 T76 T31

New Access Road - Entrance 22

Vaughan Road

Beaver Creek Wetland Complex

N

0 150 300 m

1:7,500

623000 623500 624000 624500 625000 625500

September, 2015
160950269

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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

- Area Added
- Area Removed
- Proposed Turbine Location
- Turbine Relocated
- Turbine Blade Length
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- Proposed Culvert
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- Woodland (MNR)
- Provincially Significant Wetland (MNR)
- Other/Locally Significant Wetland (MNR)
- Deer Wintering Yard (MNR)
- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)
- ANSI, Life Science, Regionally Significant (MNR)
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- Niagara Escarpment

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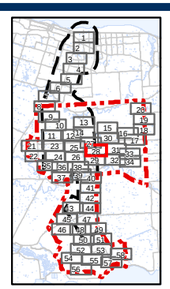

Client/Project
FWRN LP
Natural Heritage Assessment Report

Figure No.
2.28

Title
Records Review - Natural Features Figure 2.28 Revised

615500 616000 616500 617000 617500 618000

4763500 4763000 4762500

Concession 2

Townline Caistor Gainsborough

Elcho Road

New Access Road - Entrance 27

T51

T09

Beaver Creek Wetland Complex

Port Davidson Slough Forest Wetland Complex

Port Davidson Road

N

0 150 300 m

1:7,500

615500 616000 616500 617000 617500 618000

September, 2015
160950269

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Revised: 2015-09-21 By: bcowper

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

- Area Added
- Area Removed
- Proposed Turbine Location
- Turbine Relocated
- Turbine Blade Length
- Tap-in Location
- Junction Box
- Proposed Culvert
- Temporary Laydown Area
- Collector Lines - Underground or Overhead
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area
- Potential Construction Laydown Area
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- Unevaluated Wetland (NPCA)
- Woodland (MNR)
- Provincially Significant Wetland (MNR)
- Other/Locally Significant Wetland (MNR)
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- ANSI, Earth Science, Provincially Significant (MNR)
- ANSI, Life Science, Provincially Significant (MNR)
- ANSI, Life Science, Regionally Significant (MNR)
- Greenbelt Natural Heritage System
- Niagara Escarpment

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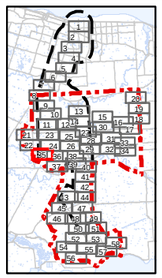
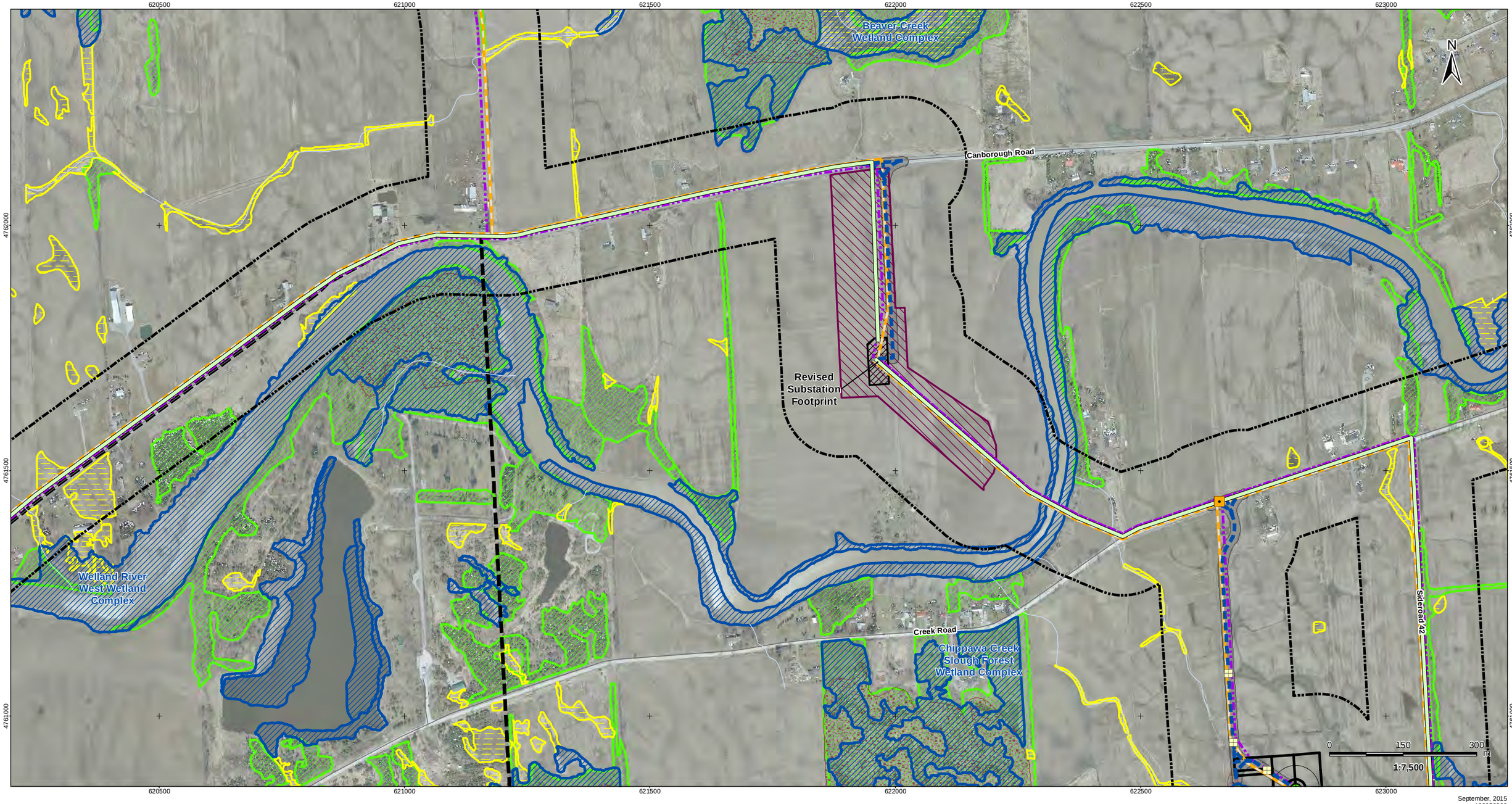


Client/Project
FWRN LP
Natural Heritage Assessment Report

Figure No.
2.35

Title
Records Review - Natural Features Figure 2.35 Revised



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Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

- Area Added
- Area Removed
- Proposed Turbine Location
- Turbine Relocated
- Turbine Blade Length
- Tap-in Location
- Junction Box
- Proposed Culvert
- Temporary Laydown Area
- Collector Lines - Underground or Overhead
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Notes

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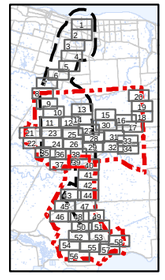

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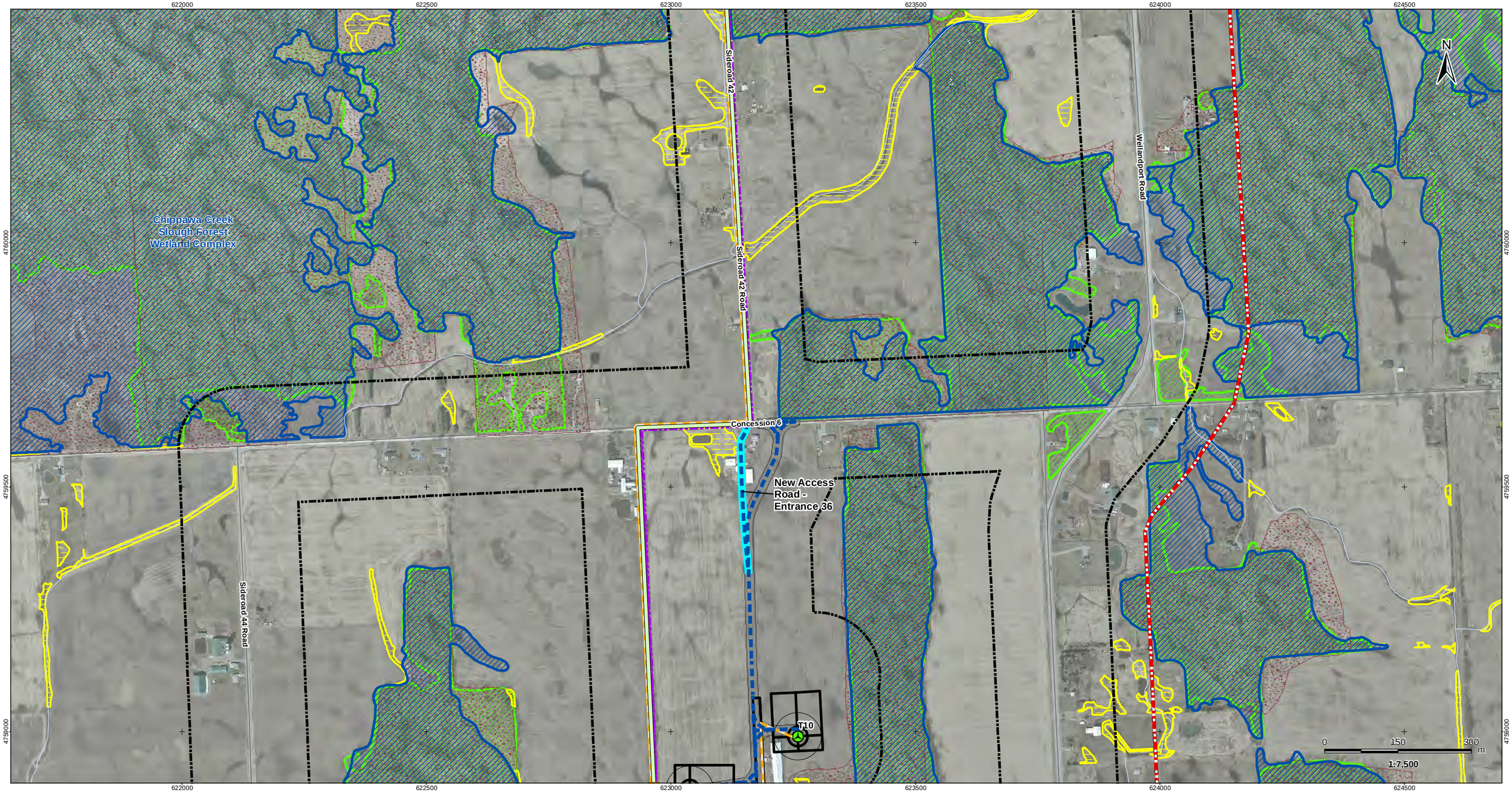
Natural Heritage Assessment Report

Figure No.
2.39

Title
Records Review - Natural Features Figure 2.39 Revised



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Stantec

Legend

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Zone of Investigation Adjustments

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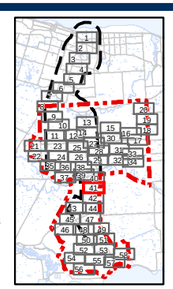

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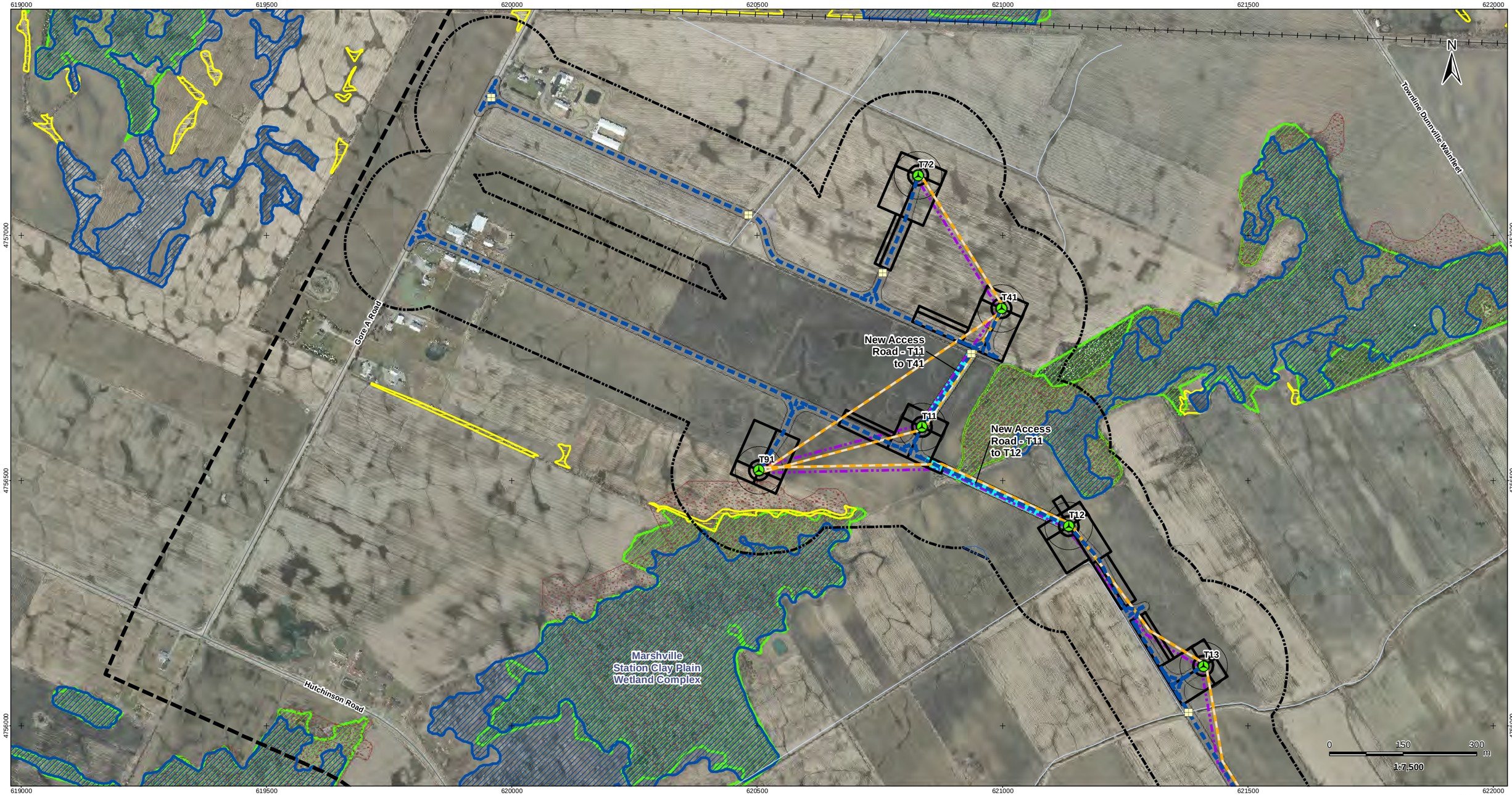
Natural Heritage Assessment Report

Figure No.
2.41

Title
Records Review - Natural Features Figure 2.41 Revised



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Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

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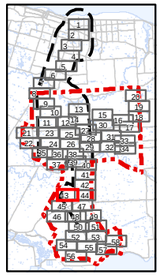

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Natural Heritage Assessment Report

Figure No.
2.43

Title
Records Review - Natural Features Figure 2.43 Revised

September, 2015
160950269

620500 621000 621500 622000 622500 623000

4754000 4753500 4753000

N

Jenny Jump Road

Ellsworth Drain Woodlots

T84

Winger, ANSI, Earth Science, Provincially Significant

New Access Road - Entrance 46

East of Dunnville Woodlots

Booker Road

0 150 300 m

1:7,500

620500 621000 621500 622000 622500 623000

September, 2015
160950269

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Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

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Notes

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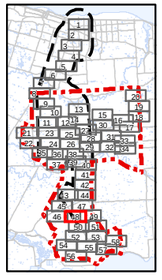

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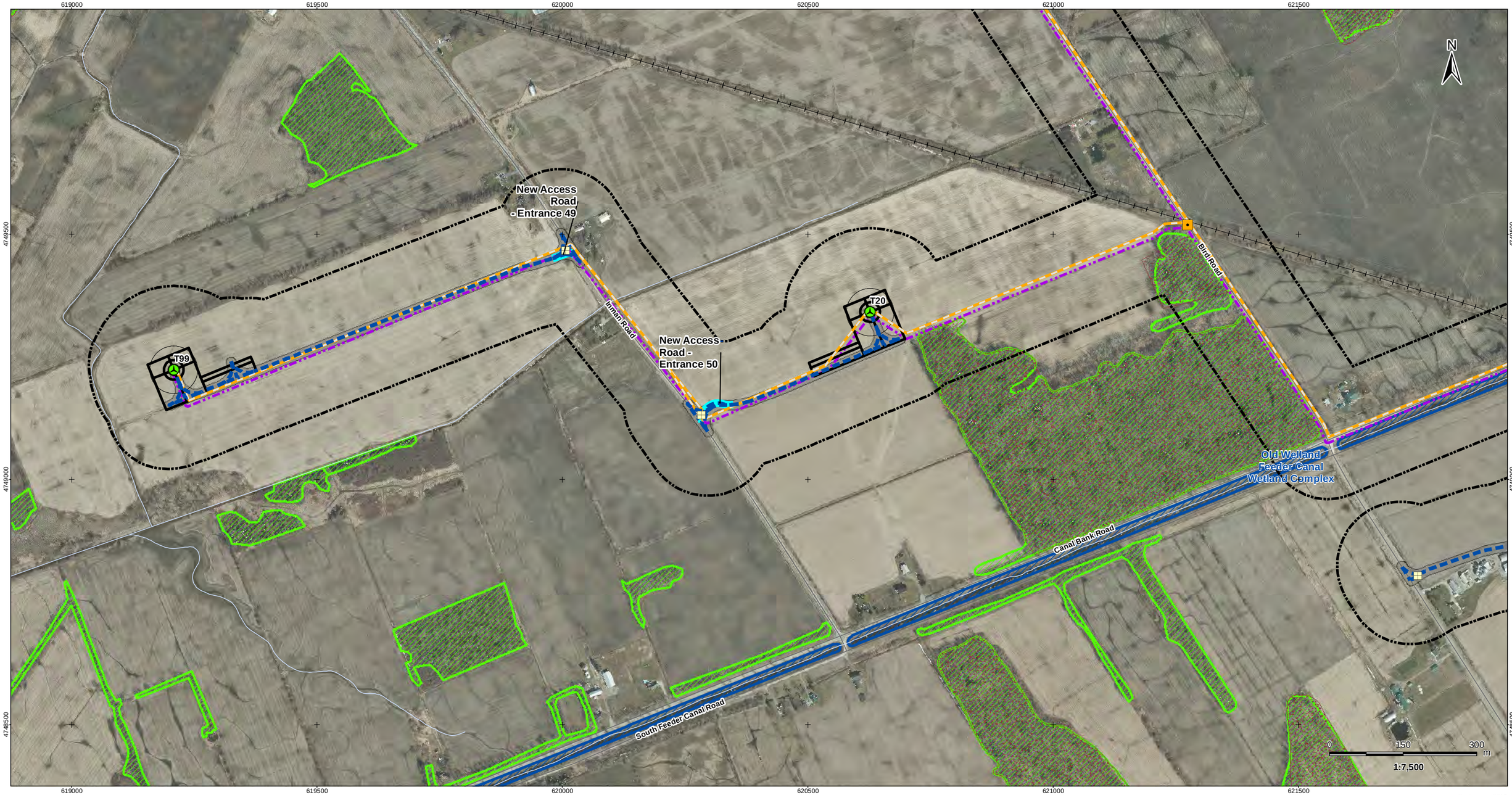
FWRN LP
Natural Heritage Assessment Report

Figure No.
2.48

Title
Records Review - Natural Features Figure 2.48 Revised



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160950269

Stantec

Legend

- Project Study Area
- Interconnector Study Area
- 120m Zone of Investigation

Zone of Investigation Adjustments

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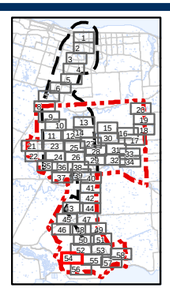

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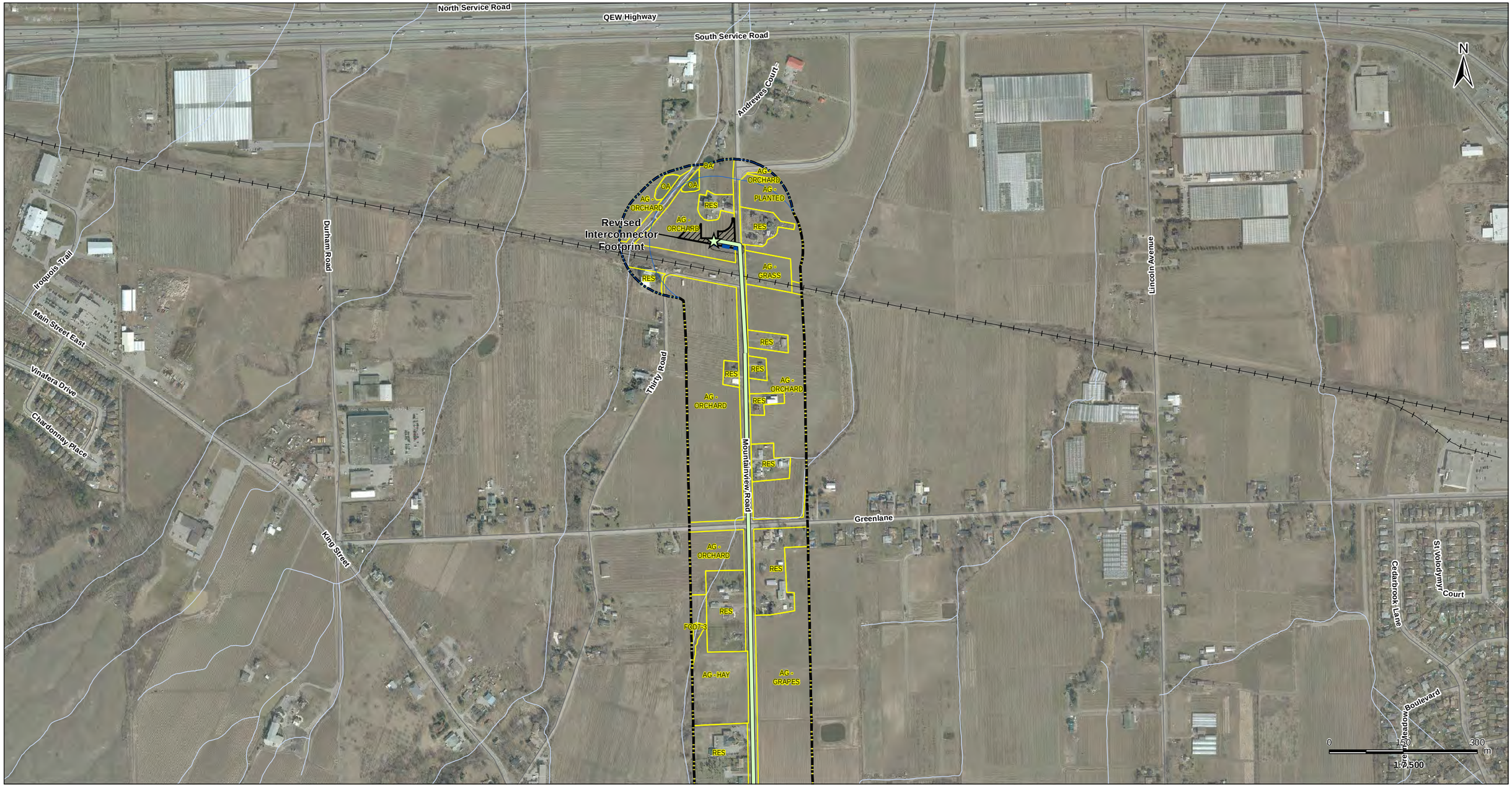
Figure No.
2.54

Title
Records Review - Natural Features Figure 2.54 Revised



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September, 2015
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Stantec

Legend

- Interconnector Study Area
- Zone of Investigation Adjustments
- Area Added
- ELC Boundary
- Tap-in Location
- Preferred Transmission Line Route
- Potential Access Road
- Access Road 20m Construction Area
- Transformer Substation

Notes

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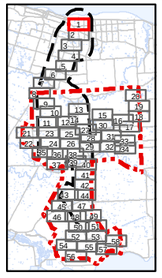

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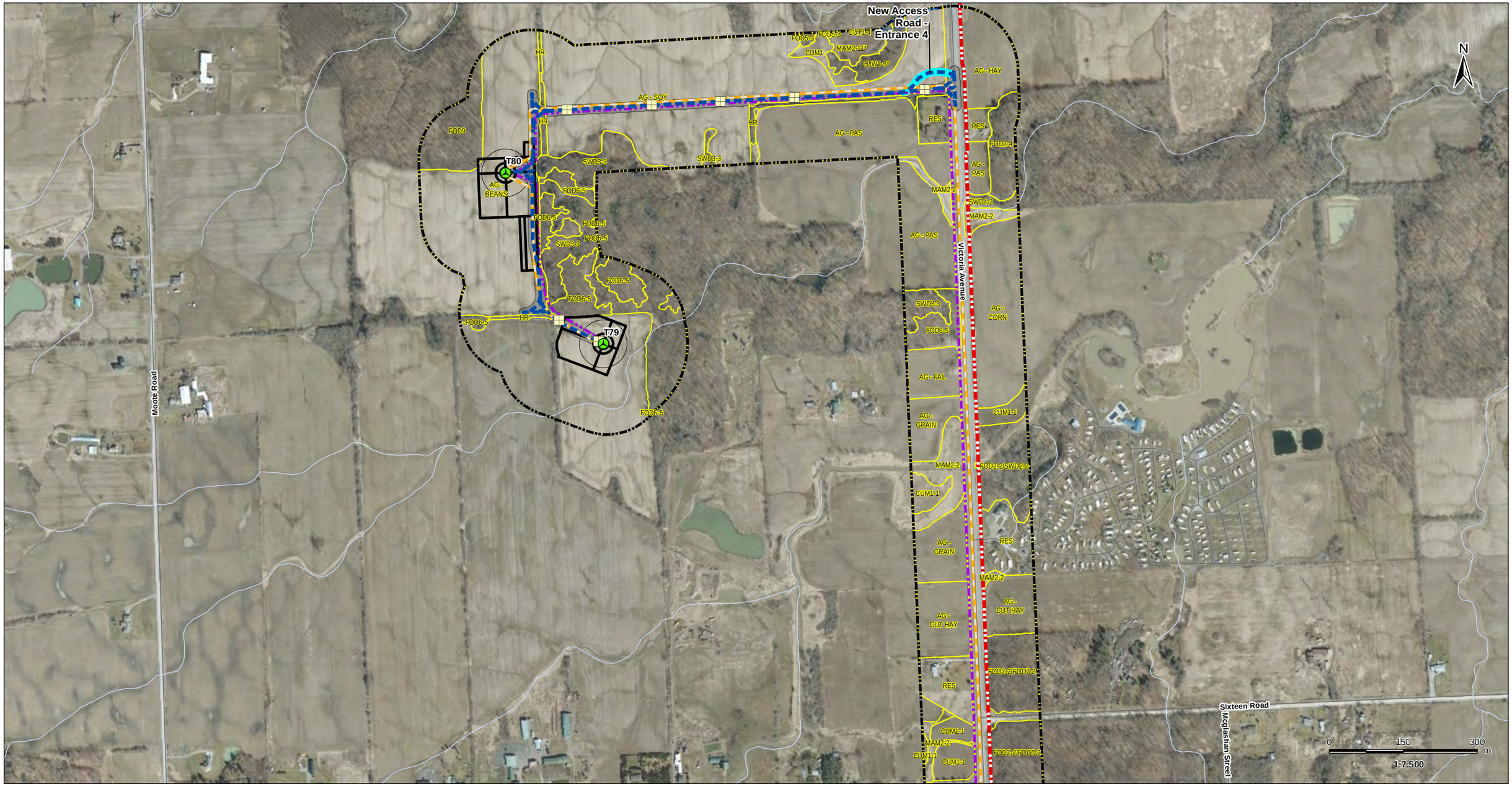
Natural Heritage Assessment Report

Figure No.
3.1

Title
ELC Vegetation Communities - Figure 3.1 Revised



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Stantec

Legend

- Project Study Area
- Zone of Investigation Adjustments
  - Area Added
  - ELC Boundary
- Proposed Turbine Location
- Turbine Blade Length
- Proposed Culvert
- Collector Lines – Underground or Overhead
- Temporary Laydown Area
- Fibre Optic Line
- Potential Access Road
- Access Road 20m Construction Area

Notes

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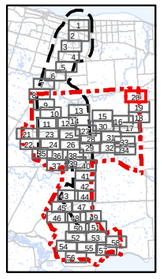

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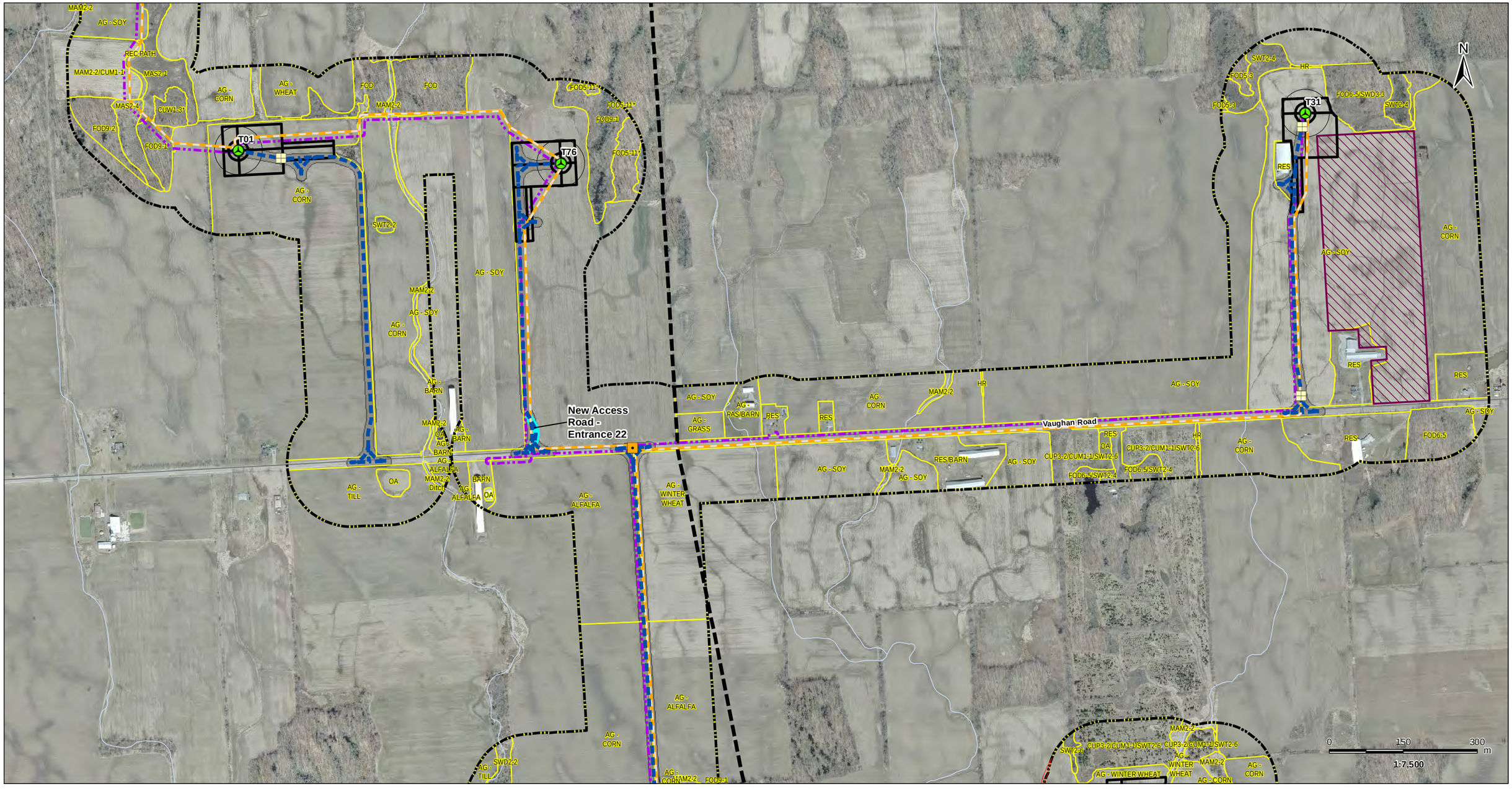
Natural Heritage Assessment Report

Figure No.
3.20

Title
ELC Vegetation Communities - Figure 3.20 Revised



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160950269

Legend

- Project Study Area
- Interconnector Study Area
- Zone of Investigation Adjustments
- Area Removed
- ELC Boundary
- Proposed Turbine Location
- Turbine Blade Length
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Notes

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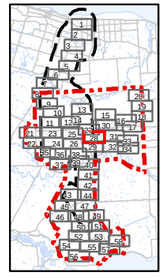

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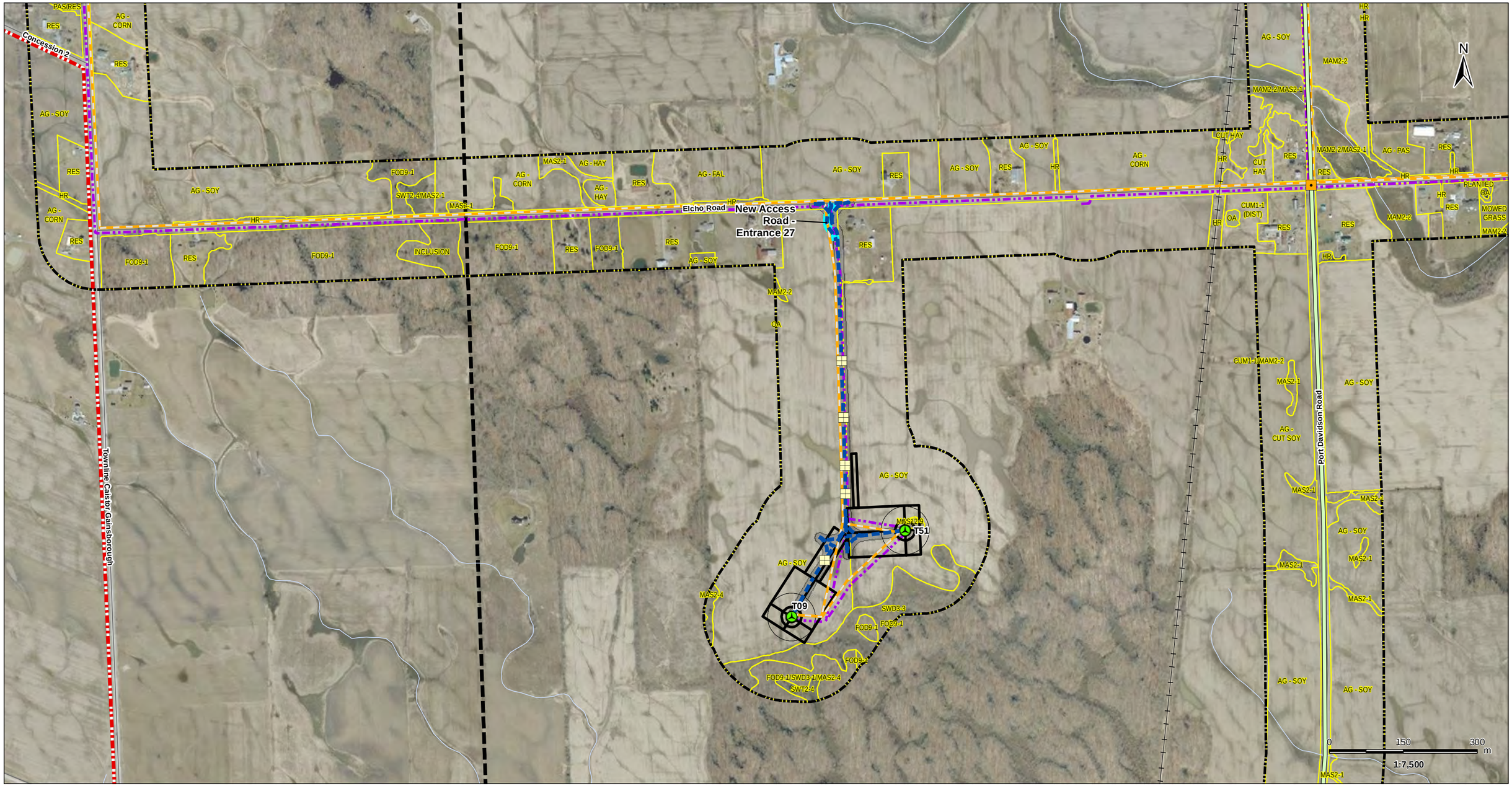
Figure No.
3.28

Title
ELC Vegetation Communities - Figure 3.28 Revised



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Stantec

Legend

- Project Study Area
- Interconnector Study Area
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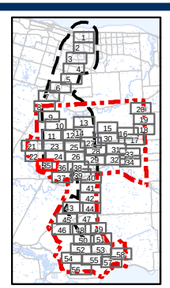

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Figure No.
3.35

Title
ELC Vegetation Communities - Figure 3.35 Revised

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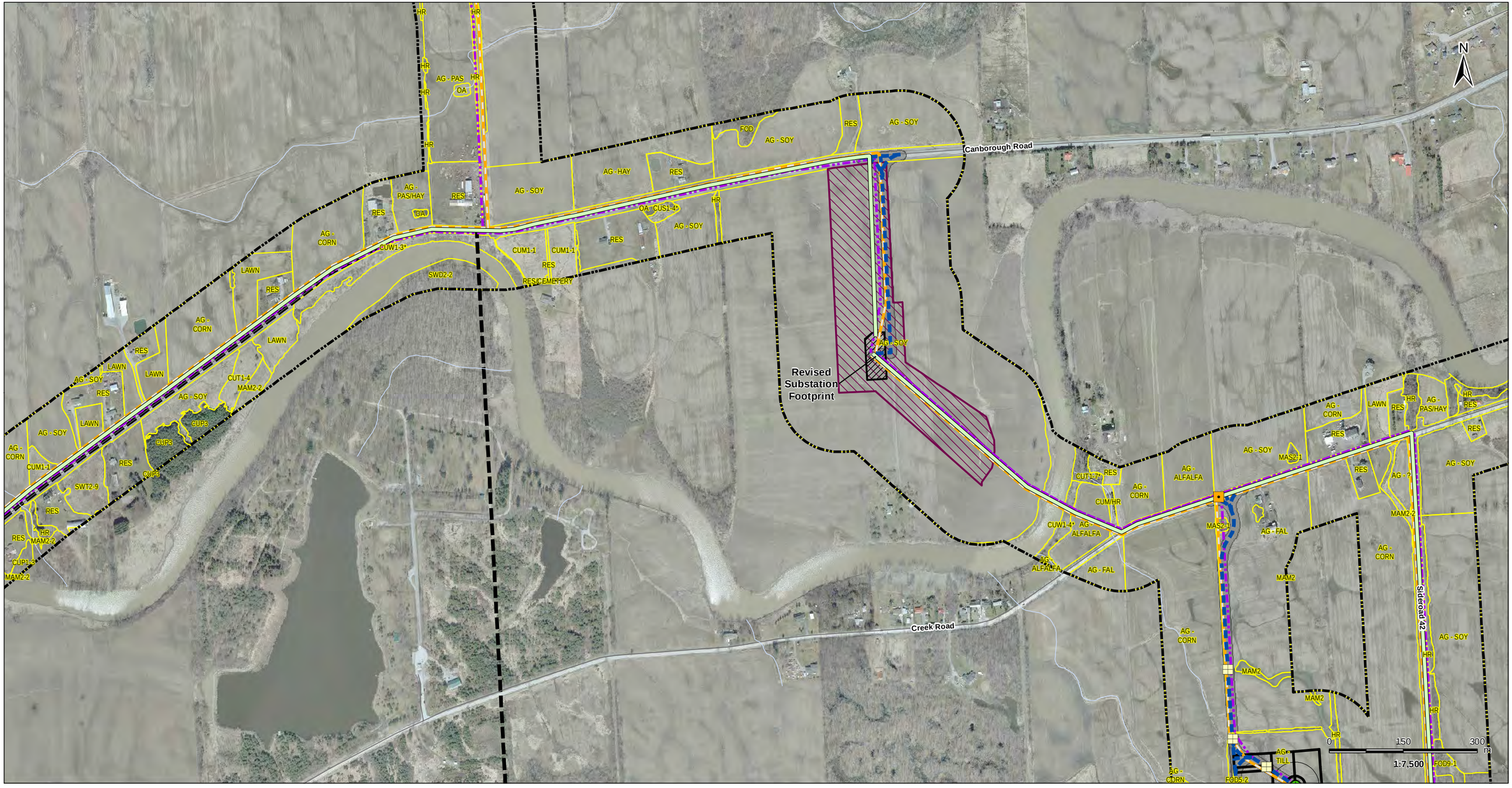

September, 2015
160950269

Legend

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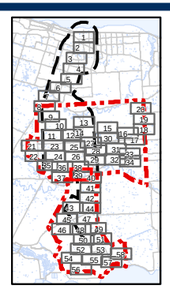

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Figure No.
3.39

Title
ELC Vegetation Communities - Figure 3.39 Revised

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160950269

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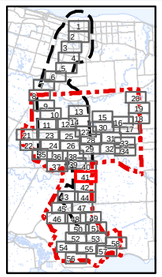

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Figure No.
3.41

Title
ELC Vegetation Communities - Figure 3.41 Revised