Ministry of
Natural Resources
Regional Resources Section
Southern Region
300 Water Street
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Peterborough, ON K9J 8M5

Ministère des
Richesses naturelles

Ontario

July 11, 2017

Nation Rise Wind Farm Limited Partnership
110 Spadina Ave, Suite 609
Toronto, ON
M5V 2K4

RE: NHA Confirmation for Nation Rise Wind Farm

Dear Kenneth Little:

In accordance with the Ministry of the Environment and Climate Change's (MOECC's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources and Forestry (MNRF) has reviewed the natural heritage assessment (NHA) and environmental impact study (EIS) for the Nation Rise Wind Farm located in the Township of North Stormont and the United Counties of Stormont, Dundas and Glengarry, the final version of which was submitted by Nation Rise Wind Farm Limited Partnership on July 11, 2017.

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

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

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

Pre-construction Monitoring

In accordance with Appendix D of the Natural Heritage Assessment Guide, a commitment has been made to complete pre-construction assessments of habitat use for the following candidate significant wildlife habitats:

- Bat Maternity Colony (features BMA-001, 003)
- Turtle Wintering Area (features TWA-001)
- Alvar Habitat (features ALV-001, 002)
- Savannah Habitat (feature SAV-001)
- Tallgrass Prairie Habitat (features TGP-001, 002)
- Amphibian Woodland Breeding Habitat (features AWO-001, 004, 006, 007, 008, 010, 011, 012, 013, 014, 015, 016, 017, 019, 020, 022, 023, 024)
- Open Country Bird Breeding Habitat (feature OCB-001)
- Common Nighthawk Habitat (features CONI-001, 002, 003, 004, 005, 006, 007, 008, 009)
- Eastern Wood Peewee Habitat (features EAWP-001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 013, 014, 015, 016, 017, 018)
- Wood Thrush Habitat (features WOTH-001, 002, 004, 005)
- Mühlenberg's Weissia Habitat (features MUWE-001, 002, 003, 004, 005, 007, 009, 010)
- Monarch Butterfly Habitat (features MONA-001,002, 003, 004, 005, 006)

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

Post-construction Monitoring

A commitment has been made in the NHA and EIS to conduct post-construction monitoring, and if determined necessary, implement mitigation measures. For the Nation Rise Wind Farm this includes the following features if they are deemed significant following results of pre-construction monitoring requirements listed above:

- Bat Maternity Colony (features BMA-001, 003)
- Turtle Wintering Area (features TWA-001)
- Alvar Habitat (features ALV-001, 002)
- Savannah Habitat (feature SAV-001)
- Tallgrass Prairie Habitat (features TGP-001, 002)
- Amphibian Woodland Breeding Habitat (features AWO-001, 004, 006, 007, 008, 010, 011, 012, 013, 014, 015, 016, 017, 019, 020, 022, 023, 024)
- Open Country Bird Breeding Habitat (feature OCB-001)
- Common Nighthawk Habitat (features CONI-001, 002, 003, 004, 005, 006, 007, 008, 009)
- Eastern Wood Peewee Habitat (features EAWP-001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 013, 014, 015, 016, 017, 018)
- Wood Thrush Habitat (features WOTH-001, 002, 004, 005)
- Mühlenberg's Weissia Habitat (features MUWE-001, 002, 003, 004, 005, 007, 009, 010)
- Monarch Butterfly Habitat (features MONA-001,002, 003, 004, 005, 006)

In addition, the following confirmed significant wildlife habitats will receive post-construction monitoring, and mitigation outlined in the NHA and EIS will be applied:

- Waterfowl Stopover and Staging Area – Aquatic Habitat (feature WSA-001)
- Amphibian Woodland Breeding Habitat (feature AWO-018)

In addition to the NHA, an Environmental Effects Monitoring Plans (EEMP) that address post-construction monitoring and mitigation for birds and bats must be prepared and implemented. EEMPs for birds and bats must be prepared in accordance with MNRF Guidelines and should be reviewed by MNRF in advance of submitting a REA application to MOECC to minimize potential delays in determining if the application is complete. Comments provided by MNRF with respect to the EEMP must be submitted as part of the application for a REA.

This confirmation letter is valid for the project as proposed in the NHA and EIS. Should any changes be made to the proposed project that would alter the NHA or EIS, MNRF may need to undertake additional review of the NHA and EIS.

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

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

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

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

Sincerely,

Erin Cotnam
Land Use Planning Supervisor
Regional Operations Division
Ministry of Natural Resources and Forestry

cc. Dan Thompson, District Manager, MNR Kemptville District
cc. Mike Poskin, A/Renewable Energy Coordinator, MNRF
cc. Amy Cameron, Regional Planning Ecologist, MNRF
cc. Korey Walker, Regional Planner, MNRF
cc. Mohsen Keyvani, MOECC
cc. Nick Colella, MOECC
cc. Zeljko Romic, MOECC

Nation Rise Wind Farm
Natural Heritage Records Review Report

Prepared for:
DNV GL - Energy
4100 Rue Molson, Suite 100
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H1Y 3N1

Project No. 1756 l June 2017

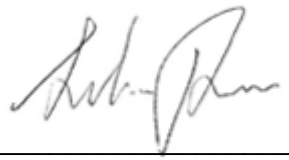
NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Nation Rise Wind Farm
Natural Heritage Records Review Report

Project Team:

Staff	Role
Andrew Ryckman	Project Advisor
Christy Humphrey	Project Manager/Biologist
Jennifer Pedersen	Terrestrial and Wetland Biologist
Lillian Knopf	Terrestrial and Wetland Biologist
Laura Hockley	GIS Technician

Report submitted on June 28, 2017



Andrew Ryckman
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1.0 Project Description

Natural Resource Solutions Inc. (NRSI) was retained in April 2016 by DNVGL, on behalf of Nation Rise Wind Farm Limited Partnership (the Proponent) to conduct a Natural Heritage Assessment (NHA) in accordance with the Renewable Energy Approval (REA) Regulation, Ontario Regulation (O.Reg.) 359/09. This assessment includes a records review, site investigation, evaluation of significance, and environmental impact study of any potentially significant natural features or wildlife habitats at a proposed wind energy generating facility of up to 34 permitted wind turbines, with a nameplate capacity of approximately 100 megawatts (MW).

The Nation Rise Wind Farm (Nation Rise WF or Project) is being proposed by Nation Rise Wind Farm Limited Partnership, a wholly-owned subsidiary of EDP Renewables Canada Ltd. (EDPR). The Nation Rise Wind Farm is located in eastern Ontario, within the Township of North Stormont and the United Counties of Stormont, Dundas and Glengarry, Ontario. More specifically, the Project is located in the western portion of North Stormont bounded to the south by the Township of South Stormont and to the west by the boundary of the Township of North Dundas. The north portion of the Project is delimited by the municipality boundaries of Russell and The Nation. Courville Road and MacMillan Road are the east boundaries of the Project.

The Project will be located primarily on privately owned land with some components (e.g., electrical collector lines) being placed along public rights-of-way, none of which are proposed on provincial Crown land. The Project will be located entirely within Ecoregion 6E and Ecodistrict 6E-12 (MNRF 2016a).

According to O. Reg. 359/09, as amended, and as per the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012), the Project Location is defined as "...*a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project*". As described therein, the Project Location boundary is the outer limit of where site preparation and construction activities will occur (i.e., construction disturbance areas described below) and where permanent infrastructure will be located, including the air space occupied by turbine blades.

Construction disturbance areas surrounding various Project components have been identified; such areas correspond to the outer limits of the “Project Location” boundaries on the maps. These areas denote zones where temporary disturbance during the construction phase may occur such as temporary Project component laydown and storage areas.

In accordance with Section 25 of the REA Regulation, O. Reg 359/09, NRSI has conducted a records review of available background resources to identify any potentially significant natural features in and within 120m of the Project Location. This includes areas in or within 120m of proposed turbines, measured from blade tip, as well as in or within 120m of any areas that may be used as temporary staging and laydown areas, crane pads, access roads, electrical collector lines, substation, and meteorological towers. For the purposes of this report, NRSI will refer to the areas in and within 120m of the Project Location as the ‘Project Area’. See Maps 1 and 2 for an illustration of the Project Area and Natural Features. As noted on Map 1, the Project Location is located entirely within the Township of North Stormont; however, a small portion of the Project Area is located within the Township of North Dundas. As a result, information from both lower-tier municipalities has been incorporated into this report, where applicable.

2.0 REA Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals* under *Part V.0.1 of the Act* (herein referred to as the REA Regulation), made under the *Environmental Protection Act*, identifies the requirements for the development of renewable energy projects in Ontario. In accordance with the REA Regulation, the Nation Rise Wind Farm is classified as a Class 4 wind facility and is required to complete a REA.

Section 25 of the REA Regulation requires proponents of Class 4 wind projects to undertake a natural heritage records review to identify whether the Project Location is:

1. in a provincial park or conservation reserve or within 120m of a provincial park or conservation reserve;
2. in a natural feature;
3. within 50m of an area of natural and scientific interest (earth science); or
4. within 120m of a natural feature that is not an area of natural and scientific interest (earth science).

Natural Features are defined in Section 1.1 of the REA Regulation to be all or part of:

- an area of natural and scientific interest (ANSI; life science or earth science);
- a coastal, northern, or southern wetland;
- a wildlife habitat; or
- a woodland.

Subsection 3 of Section 25 of the REA Regulation requires the proponent to prepare a report "setting out a summary of the records searched and the results of the analysis" (O. Reg. 359/09). This Natural Heritage Records Review Report has been prepared to meet these requirements.

As part of this project, NRSI has considered all aspects relating to provincially Threatened and Endangered species; however, since these species are addressed through a separate permitting process under the *Endangered Species Act* (2007), they have not been discussed within any of the NHA reports. These species will be addressed in full detail, including a description and results of field assessments, potential impacts, and recommended mitigation measures, as part of a separate reporting process to be addressed with the Ministry of Natural Resources and Forestry (MNRF), as required.

3.0 Records Review Methods

In accordance with the REA Regulation, NRSI biologists consulted several information sources and agencies for the purposes of assessing natural features and wildlife habitat in and within 120m of the Project Location. In many instances, the records that were consulted provided information on areas well beyond the Project Location, and in some cases extending several kilometers from the boundaries of the proposed development. In such instances, information relating to ANSIs, wetlands, wildlife habitats, and woodlands that may have been received but that does not specifically overlap with the Project Location or the area within 120m of the Project Location has not been discussed in detail in this report. The results of this consultation process have been documented throughout the following report, and have been summarized in Table 1.

Table 1. Summary of Records Consulted for the Nation Rise Wind Farm

Information Source	Consultation Date	Consultation Type	Type of Records Reviewed/Received
Correspondence			
Ministry of Natural Resources and Forestry (MNRF)	September 7, 2016	Email Request	Areas of Natural and Scientific Interest (Life Science) Areas of Natural and Scientific Interest (Earth Science) Wetlands Woodlands Significant Wildlife Habitat Species of Conservation Concern
Canadian Wildlife Service (CWS)	September 7, 2016	Email Request	Significant Wildlife Habitat (Seasonal Concentration Areas)
South Nation Conservation Authority (SNCA)	September 7, 2016	Email Request	No pertinent records received
Documents Reviewed			
Official Plan for the United Counties of Stormont, Dundas and Glengarry (UCSDG 2009)	January 18, 2017	Document Review	Provincially Significant Wetlands Areas of Natural and Scientific Interest
SDG County Forest Management Plan 2007-2026 (UCSDG 2010)	January 18, 2017	Document Review	Woodlands (“County Forests”) Provincially Significant Wetlands
South Nation Conservation Authority: State of the Nation Report	January 18, 2017	Document Review	Woodlands Wetlands
South Nation Conservation Authority: Forest Cover and Trends Analysis	January 18, 2017	Document Review	Woodlands

Information Source	Consultation Date	Consultation Type	Type of Records Reviewed/Received
Ministry of Natural Resources and Forestry, Natural Heritage Information Centre (NHIC 2015)	January 30, 2017	Online Review: Database	Significant Wildlife Habitat Species of Conservation Concern Records Refer to Map 2 for the 1km NHIC squares queried and Appendix I for the query results
Ministry of Natural Resources and Forestry, Natural Heritage Information Centre (NHIC) (MNRF 2014)	January 18, 2017	Online Review Make-A-Map: Natural Heritage Areas Application	Areas of Natural and Scientific Interest (Life Science) Areas of Natural and Scientific Interest (Earth Science) Wetlands Woodlands Conservation Reserves
Ministry of Natural Resources, Land Information Ontario (LIO) (MNRF 2016a)	January 30, 2017	GIS Mapping Layer Review	Provincial Parks Conservation Reserves Areas of Natural and Scientific Interest (Life Science) Areas of Natural and Scientific Interest (Earth Science) Woodlands Wetlands Significant Wildlife Habitat
Ministry of Northern Development and Mines (MNDM 2016)	January 20, 2017	GIS Mapping Layer Review	Significant Wildlife Habitat
Niagara Escarpment Plan (NEC 2015)	March 20, 2017	Document Review	Niagara Escarpment Plan boundaries
Atlas of the Mammals of Ontario (Dobbyn 1994)	May 9, 2016	Document Review	Significant Wildlife Habitat (Overlapping 10km squares reviewed)
Ontario Reptile and Amphibian Atlas (Ontario Nature 2016a)	January 23, 2017	Online Interactive Mapping Review	Significant Wildlife Habitat (Overlapping 10km squares reviewed)
Ontario Breeding Bird Atlas (OBBA) (Cadman et al. 2007)	May 5, 2016	Online Database Review	Significant Wildlife Habitat (Overlapping 10km squares reviewed)
Christmas Bird Count (CBC) (National Audubon Society 2013)	January 18, 2017	Online Database Review	Significant Wildlife Habitat (no overlapping count circle)
Important Bird Areas Canada (Bird Studies Canada) (IBA Canada 2017)	January 18, 2017	Map Review	Significant Wildlife Habitat (no Important Bird Areas near the Project)
Ontario Butterfly Atlas (MacNaughton et al. 2016)	May 9, 2016	Online Interactive Mapping Review	Significant Wildlife Habitat (Overlapping 10km squares reviewed)

4.0 Natural Areas

For the purposes of the NHA reporting, NRSI has used the term natural area to identify features that have already been given a provincial or federal designation, including provincial parks, conservation reserves, and ANSIs. Information obtained on each of these natural areas has been outlined below.

4.1 Provincial Parks and Conservation Reserves

There are no provincial parks or conservation reserves located in or within 120m of the Project Location (MNRF 2016a).

4.2 Areas of Natural and Scientific Interest – Life Science

No provincially significant Life Science ANSIs are located in or within 120m of the Project Location (MNRF 2014, 2016a).

4.3 Areas of Natural and Scientific Interest – Earth Science

No provincially significant Earth Science ANSIs are located in or within 50m of the Project Location (MNRF 2014, 2016a).

5.0 Woodlands

There are 63 woodlands, as identified through this records review, which may overlap the proposed Project Location (Map 2). Available basemapping indicates that these woodlands range in size from 0.10ha to 133.39ha. A total of 30 of these woodland polygons are identified through available basemapping to be hedgerows or fencerows that may be crossed by infrastructure such as underground cabling or access roads. The remaining 33 woodlands shown to be overlapped by infrastructure during this records review are primarily shown with only minor overlaps in infrastructure, and are likely to represent discrepancies between different projections of basemapping layers and aerial photography. In addition, aerial photography indicates that a number of woodlands in the area have been removed through logging in recent years. The intention of the proposed Project Location is to avoid overlap with existing natural features, including woodlands, wherever practicable. The presence of these woodlands, as well as species associations and distances to the Project Location will be confirmed during the site investigation phase of this project.

NRSI has identified an additional 74 woodlands that are within 120m of, but not overlapping, the Project Location. Available basemapping indicates that these woodlands range in size from 0.06ha to 125.88ha. Most of these woodlands are expected to represent a variety of deciduous, mixed, and coniferous woodlands of varying ages, as well as occasional treed plantations. These habitats are scattered throughout the Project Area, and are found within 120m of all types of project components, including proposed turbines, access roads, and collector lines (see Map 2). The presence of these woodlands, as well as species associations and distances to the Project Location will be confirmed during the site investigation phase of this NHA.

The significance of all woodlands will be confirmed during the evaluation of significance phase of this NHA.

6.0 Wetlands

The Project Location overlaps with 12 wetlands according to the information collected from the sources identified above, and an additional 33 wetlands have been identified as occurring within 120m of the project location. Available basemapping indicates that these 45 wetlands range in size from 0.04ha to 37.17ha. None of these wetlands have been evaluated and therefore none are Provincially Significant Wetlands (PSWs). The closest identified PSW is the Morewood Bog PSW (shown on Map 1), which is located approximately 360m west of the Project Location, which is outside of the Project Area.

Most of the wetlands shown to be overlapped by the Project Location are shown with only minor overlaps, which are likely to represent discrepancies between different projections of basemapping layers and aerial photography. In addition, aerial photography indicates that a number of wetlands in the area have been removed through logging in recent years. The intention of the proposed Project Layout is to avoid overlap with natural features, including wetlands, wherever practicable. The presence and boundaries of all wetlands, including whether any wetlands are overlapped by the Project Location, will be confirmed during the site investigation phase of this project.

As discussed in Section 5.0 above, several woodlands have been identified within the Project Area (Maps 1 and 2). Each of these woodlands has the potential to contain wetland habitat.

All of the potential wetland habitats within the Project Area will be examined in more detail during the site investigation phase of this NHA. The presence of all wetlands, as well as species associations and distances to the Project Location will be confirmed during the site investigation phase of this project.

7.0 Wildlife Habitat

As part of the REA process, NRSI biologists have examined available records associated with the presence of wildlife habitat in and within 120m of the Project Location. For the purposes of this series of NHA reports, NRSI has separated the discussion on wildlife habitat into 4 categories, following the Significant Wildlife Habitat Technical Guide (MNR 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015). These 4 categories include:

- seasonal concentration areas;
- rare vegetation communities and specialized wildlife habitat;
- habitats of species of conservation concern; and
- animal movement corridors.

Each of these wildlife habitat categories are described in the following sections.

7.1 Seasonal Concentration Areas

The records review process did not reveal any known seasonal concentration areas in or within 120m of the Project Location. However, a Deer Winter Congregation Area is known approximately 2.3km from the Project Location to the east, and another is known approximately 2.0km from the Project Location to the west (see Map 1). These Deer Winter Congregation Areas are not in or within 120m of the Project Location, and therefore not discussed further.

Information received from the Canadian Wildlife Service (CWS) indicates that areas associated with the Project Area have the potential to act as seasonal concentration areas, specifically relating to waterfowl stopover habitat (CWS Staff pers. comm. 2016). The presence of potential seasonal concentration areas within the Project Area will be confirmed during the site investigation phase of this NHA.

Although no confirmed seasonal concentration areas have been identified in or within 120m of the Project Location, background information has indicated that several concentration areas have the potential to be present in and within 120m of the Project Location. Each of these habitats is discussed in Table 2, including information on whether further consideration is required during the site investigation phase of this project.

Table 2. Summary of Seasonal Concentration Areas Identified Near the Nation Rise Wind Farm Project Area

Seasonal Concentration Areas	Present Within the Project Area	Details	Site Investigation Required (Y/N)
Waterfowl Stopover and Staging Areas (Terrestrial)	Unknown	Unknown	**Yes**
Waterfowl Stopover and Staging Areas (Aquatic)	Unknown	Information from CWS indicates known concentrations of waterfowl, specifically snow goose (*Chen caerulescens*), within the general Project Area along the South Nation River (CWS Staff pers. comm. 2016). Specific areas along the river were not identified as part of the communication from CWS. This habitat type will be further examined during the site investigation.	**Yes**
Shorebird Migratory Stopover Area	Unknown	Unknown	**Yes**
Raptor Wintering Area	Unknown	Unknown	**Yes**
Bat Hibernacula	Unknown	Abandoned mines are known from within 1km of the Project Location; however, each of these represents a surficial quarry (MNDM 2016), which lack vertical shafts, adits or stopes which could be used by hibernating bats. Abandoned mines in this area are therefore not suitable for bat hibernation. However, both inferred and potential karst areas are found within the Project Area (MNDM 2016). No caves or specific karst features are known from within 1km of the project location (MNDM 2016). However, some of the karst areas in the Project Area have low or no drift (soil cover above bedrock, MNDM 2016), which indicates that karst features could be found at the ground surface. As a result, caves or other karst features suitable for supporting hibernating bats could be found in the Project Area.	**Yes**

Seasonal Concentration Areas	Present Within the Project Area	Details	Site Investigation Required (Y/N)
Bat Maternity Colonies	Unknown	There are up to 137 potential woodlands which may contain potential maternity colony roost trees within the Project Area. These potential habitats will be further examined during the site investigation.	**Yes**
Turtle Wintering Areas	Unknown	Unknown	**Yes**
Snake Hibernacula	Unknown	Unknown	**Yes**
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Unknown	Unknown	**Yes**
Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs)	Unknown	Unknown	**Yes**
Colonially – Nesting Bird Breeding Habitat (Ground)	Unknown	Unknown	**Yes**
Migratory Butterfly Stopover Areas	N/A	The Project Area is not located within 5km of Lake Ontario or Lake Erie.	No
Landbird Migratory Stopover Areas	N/A	Woodlands within the Project Area are not located within 5km of Lake Ontario or Lake Erie.	No
Deer Yarding Areas and Deer Winter Congregation Areas	No	No deer winter congregation areas have been identified in or within 120m of the Project Location by the MNRF. As these features must be confirmed by the MNRF, they will not be considered further.	No

7.2 Rare Vegetation Communities and Specialized Wildlife Habitat

The records review process did not reveal any known rare vegetation communities and/or specialized wildlife habitat. Although it is unknown whether any rare vegetation communities or specialized wildlife habitats are present within the Project Area, background information has indicated that many of these natural features have the potential to be present. Each of these rare vegetation communities and specialized wildlife habitats is discussed in Table 3, including information on whether further consideration is required during the site investigation phase of this project.

Table 3. Summary of Rare Vegetation Communities and Specialized Wildlife Habitat Identified Near the Nation Rise Wind Farm Project Area

Rare Vegetation Communities and Specialized Wildlife Habitats	Present Within the Project Area	Details	Site Investigation Required (Y/N)
Rare Vegetation Communities			
Cliffs and Talus Slopes	Unknown	Unknown	**Yes**
Sand Barrens	Unknown	Unknown	**Yes**
Alvar	Unknown	Unknown	**Yes**
Old Growth Forest	Unknown	There are 137 woodlands within the Project Area that will be further examined during the site investigation.	**Yes**
Savannah	Unknown	Unknown	**Yes**
Tallgrass Prairie	Unknown	Unknown	**Yes**
Other Rare Vegetation Communities	Unknown	Unknown	**Yes**
Specialized Wildlife Habitats			
Waterfowl Nesting Area	Unknown	Unknown	**Yes**
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Unknown	Unknown	**Yes**
Woodland Raptor Nesting Habitat	Unknown	There are 137 woodlands within the Project Area that will be further examined during the site investigation.	**Yes**
Turtle Nesting Areas	Unknown	Unknown	**Yes**
Seeps and Springs	Unknown	Unknown	**Yes**
Amphibian Breeding Habitat (Woodland)	Unknown	There are 137 woodlands within the Project Area that will be further examined for suitable habitat during the site investigation.	**Yes**
Amphibian Breeding Habitat (Wetlands)	Unknown	There are 45 wetlands within the Project Area that will be further examined for suitable habitat during the site investigation.	**Yes**
Woodland Area-Sensitive Bird Breeding Habitat	Unknown	There are 137 woodlands within the Project Area that will be further examined during the site investigation.	**Yes**

7.3 Habitats of Species of Conservation Concern

Species of conservation concern include all species that have been designated as a species of Special Concern according to the Species at Risk in Ontario (SARO) list, have been given a provincial S-Rank of S1-S3, or are designated as federally Endangered or Threatened by COSEWIC (OMNR 2000). However, it does not include species that have been designated as either Endangered or Threatened within Ontario.

Species at Risk (provincially Threatened or Endangered) will be addressed separately with the MNRF when considering any permitting requirements relating to the *Endangered Species Act* (2007).

A summary of habitats of species of conservation concern that are located near the Nation Rise Wind Farm can be found in Table 4.

Table 4. Summary of Habitats of Species of Conservation Concern Identified Near the Nation Rise Wind Farm Project Area

Habitats of Species of Conservation Concern	Present Within the Project Area	Details	Site Investigation Required (Y/N)
Marsh Bird Breeding Habitat	Unknown	There are 45 unevaluated wetlands identified within the Project Area that will be further examined during the site investigation.	**Yes**
Open Country Bird Breeding Habitat	Unknown	Unknown	**Yes**
Shrub/Early Successional Bird Breeding Habitat	Unknown	Unknown	**Yes**
Terrestrial Crayfish	No	Both terrestrial crayfish indicator species (*Fallicambarus fodiens* and *Cambarus diogenes*) have ranges that are well beyond (>300km) the Project Area and do not occur in eastern Ontario (IUCN 2016a, 2016b).	**No**

Special Concern and Rare Wildlife Species	Unknown	Several special concern and rare wildlife species could be found within the Project Area.	**Yes**

A query of the information sources outlined in Section 3.0 has identified a total of 20 species of conservation concern that have been identified within the vicinity of the Project Area. The records represent a variety of species groups, including 10 birds, 5 herpetofauna, 2 vegetation species, and 3 insect species. Each of these species is discussed in more detail in the following sections.

7.3.1 Birds

NRSI has identified a total of 10 bird species of conservation concern that have the potential to occur within the vicinity of the Project Area. Each of these 10 species is identified in Table 5.

Table 5. Bird Species of Conservation Concern Identified Near the Nation Rise Wind Farm Project Area

Scientific Name	Common Name	S-Rank	SARO Status	COSEWIC Status
Asio flammeus	Short-eared Owl[1,2]	S2N, S4B	SC	SC
Cardellina canadensis	Canada Warbler[1,2]	S4B	SC	T
Chlidonias niger	Black Tern[1,2]	S3B	SC	NAR
Chordeiles minor	Common Nighthawk[2]	S4B	SC	T
Contopus cooperi	Olive-sided Flycatcher[2]	S4B	SC	T
Contopus virens	Eastern Wood-Pewee[1,2]	S4B	SC	SC
Falco peregrinus anatum	Peregrine Falcon[2]	S3B	SC	SC
Haliaeetus leucocephalus	Bald Eagle[2]	S2N, S4B	SC	NAR
Hylocichla mustelina	Wood Thrush[1,2]	S4B	SC	T
Phalaropus tricolor	Wilson's Phalarope[1]	S3B	-	-

[1] Ontario Breeding Bird Atlas (Cadman *et al.* 2007)
[2] MNRF Staff pers. comm. 2016
[3] Natural Heritage Information Centre (2015)

Provincial Rank (S-Rank)
S1: Critically Imperiled
S2: Imperiled
S3: Vulnerable
S4: Apparently Secure
SH: Historic
N: Rank during the non-breeding period
B: Rank during the breeding period

COSEWIC and SARO Status
END/E: Endangered
THR/T: Threatened
SC: Special Concern
NAR: Not at Risk
DD: Data Deficient

As a result of the review of species of conservation concern that may be present in or within 120m of the Project Location and preferred habitats of each species, NRSI biologists have determined that several of these species have the potential to be present within, or near, the Project Location. Most of these species, if present, are most likely to be breeding within the nearby woodlands, hedgerows, pastures, or hay fields, and are unlikely to use the active agricultural fields and row crops, including soybeans, corn, and wheat. Habitats that may be suitable for these species may be considered significant wildlife habitat, and will be reviewed in more detail during the site investigation and evaluation of significance phases of this NHA. Habitat descriptions for each species, as well as descriptions of whether or not each of these species will be carried forward to the site investigation has been provided in Appendix II.

7.3.2 Herpetofauna

A total of 5 herpetofauna species of conservation concern have been documented within the vicinity of the Project Area. Each of these species, including provincial and federal status, has been identified in Table 6.

Table 6. Herpetofauna Species of Conservation Concern Identified Near the Nation Rise Wind Farm Project Area

Scientific Name	Common Name	S-Rank	SARO Status	COSEWIC Status
Chelydra serpentine serpentina	Snapping Turtle[1,2,3]	S3	SC	SC
Graptemys geographica	Northern Map Turtle[3]	S3	SC	SC
Pseudacris triseriata population 2	Western Chorus Frog (Great Lakes/St. Lawrence - Canadian Shield Population) [1]	S3	NAR	T
Sternotherus odoratus	Eastern Musk Turtle[3]	S3	SC	SC
Thamnophis sauritus septentrionalis	Eastern Ribbonsnake[3]	S3	SC	SC

[1] Ontario Reptile and Amphibian Atlas: Interactive Maps (Ontario Nature 2016a)
[2] Natural Heritage Information Centre (2015)
[3] MNRF Staff pers. comm. 2016

Provincial Rank (S-Rank)
S1: Critically Imperiled
S2: Imperiled
S3: Vulnerable
S4: Apparently Secure
SH: Historic

COSEWIC and SARO Status
END/E: Endangered
THR/T: Threatened
SC: Special Concern
NAR: Not at Risk
DD: Data Deficient

Habitats of these species are considered candidate significant wildlife habitat, and will be reviewed in more detail during the site investigation and evaluation of significance phases of this NHA. Habitat descriptions for each species, as well as descriptions of whether or not each of these species will be carried forward to the site investigation, have been provided in Appendix II.

7.3.3 Mammals

No mammal species of conservation concern have been identified within the vicinity of the Nation Rise Wind Farm through the records review.

7.3.4 Vegetation

NRSI has identified a total of 2 plant species of conservation concern that have the potential to occur within the vicinity of the Project Area. Each of these species, including provincial and federal status, has been identified in Table 7.

Table 7. Vegetation Species of Conservation Concern Identified Near the Nation Rise Wind Farm Project Area

Scientific Name	Common Name	S-Rank	SARO Status	COSEWIC Status
Carex atlantica	Atlantic Sedge[1]	S1S2	-	-
Weissia muhlenbergiana	Mühlenberg's Weissia[1]	S2	-	-

[1] Natural Heritage Information Centre (2015)

Provincial Rank (S-Rank)	**COSEWIC and SARO Status**
S1: Critically Imperiled	END/E: Endangered
S2: Imperiled	THR/T: Threatened
S3: Vulnerable	SC: Special Concern
S4: Apparently Secure	NAR: Not at Risk
SH: Historic	DD: Data Deficient

Habitats of these species are considered significant wildlife habitat, and will be reviewed in more detail during the site investigation and evaluation of significance phases of this NHA. Habitat descriptions for each of these vegetation species, as well as descriptions of whether or not each of these species will be carried forward to the site investigation, have been provided in Appendix II.

7.3.5 Insects

A total of 3 insect species of conservation concern, all of which are butterflies, have been documented within the vicinity of the Project Area. Each of these species, including provincial and federal status, has been identified in Table 8.

Table 8. Insect Species of Conservation Concern Identified Near the Nation Rise Wind Farm Project Area

Scientific Name	Common Name	S-Rank	SARO Status	COSEWIC Status
Callophrys lanoraieensis	Bog Elfin[1]	S1	-	-
Danaus plexippus	Monarch[1,2]	S2N, S4B	SC	END
Pieris virginiensis	West Virginia White[2]	S3	-	SC

[1] Ontario Butterfly Atlas (MacNaughton et al. 2016)
[2] MNRF Staff pers. comm. 2016

Provincial Rank (S-Rank)	COSEWIC and SARO Status
S1: Critically Imperiled	END/E: Endangered
S2: Imperiled	THR/T: Threatened
S3: Vulnerable	SC: Special Concern
S4: Apparently Secure	NAR: Not at Risk
SH: Historic	DD: Data Deficient
N: Rank during the non-breeding period	
B: Rank during the breeding period	

As a result of the review of species of conservation concern that may be present within the Project Area and preferred habitats of each species, NRSI biologists have determined that several of these species have the potential to be present within, or near, the Project Area. Most of these species, if present, are most likely to be breeding within the nearby woodlands, hedgerows, pastures, or hay fields, and are unlikely to use the active agricultural fields and row crops, including soybeans, corn, and wheat. Habitats that may be suitable for these species may be considered significant wildlife habitat, and will be reviewed in more detail during the site investigation and evaluation of significance phases of this NHA. Habitat descriptions for each species, as well as descriptions of whether or not each of these species will be carried forward to the site investigation has been provided in Appendix II.

The records review has identified no other wildlife species of conservation concern that may occur within the vicinity of the Project Area. NRSI biologists will continue to examine potential habitats and document all wildlife species encountered during the site investigation and evaluation of significance phases of this NHA, including species that may not have already been identified as part of this records review.

7.4 Animal Movement Corridors

The records review process did not reveal any known animal movement corridors (amphibian movement corridors or deer movement corridors) in or within 120m of the Project Location. Since no deer yarding areas or deer winter congregation areas are known in or within 120m of the Project Location, deer movement corridors will not be carried forward to Site Investigation (MNRF 2015). Available basemapping indicated that there are several linear features, including treed fencerows and naturalized drains, within the Project Area. The suitability of these features as animal movement corridors for amphibians will be examined during the site investigation phase of this NHA.

7.5 Exceptions for Ecoregion 6E

Exceptions occasionally include candidate wildlife habitats that are considered only for a subset of Ecodistricts within the larger Ecoregion. Exceptions for Ecoregion 6E consist of Mast Producing Areas (considered for Ecodistrict 6E-14) and Leks (considered for Ecodistrict 6E-17). As the Project is located entirely within Ecodistrict 6E-12 (MNRF 2016a), the listed candidate wildlife habitat exceptions will not be considered during the site investigation phase of this Project since they are applicable to other Ecodistricts.

8.0 Summary of Records Review

In accordance with the REA Regulation, NRSI biologists have completed a comprehensive review of available background information pertaining to the Nation Rise Wind Farm Project Area. This complete review has been provided in the preceding sections, and has been summarized in Tables 9 to 11 below.

The results of the records review of natural features, including provincial parks, conservation reserves, ANSIs, wetlands, and woodlands are provided in Table 9 below. This table identifies which natural features will be carried forward to the site investigation phase of the Project based on information collected during this review.

Table 9. Summary of Natural Feature Records Review for the Nation Rise Wind Farm

Natural Feature	Present Within the Project Area	Present Within Project Location	Carried Forward to Site Investigation (Y/N)
Provincial Park	No	No	**No**
Conservation Reserve	No	No	**No**
Provincially Significant Earth Science ANSI	No	No	**No**
Provincially Significant Life Science ANSI	No	No	**No**
Wetland	Yes	Yes	**Yes**
Woodland	Yes	Yes	**Yes**

The results of the records review of wildlife habitat are provided in Table 10 below. This table summarizes the presence of the full range of potential wildlife habitats within the Project Area. The purpose of this table is to guide the site investigation to further refine what types of wildlife habitats are within the Project Area. Any wildlife habitats that have already been confirmed to be not applicable to the Project Area or are known to be absent from the Project Area will not be discussed in subsequent NHA reports for the Nation Rise Wind Farm.

Table 10. Summary of Wildlife Habitat Records Review for the Nation Rise Wind Farm

Wildlife Habitat	Present Within the Project Area	Present Within Project Location	Carried Forward to Site Investigation (Y/N)
Seasonal Concentration Areas			
Waterfowl Stopover and Staging Areas (Terrestrial)	Unknown	Unknown	**Yes**
Waterfowl Stopover and Staging Areas (Aquatic)	Possible	Possible	**Yes**
Shorebird Migratory Stopover Area	Unknown	Unknown	**Yes**
Raptor Wintering Area	Unknown	Unknown	**Yes**
Bat Hibernacula	Unknown	Unknown	**Yes**
Bat Maternity Colonies	Unknown	Unknown	**Yes**
Turtle Wintering Areas	Unknown	Unknown	**Yes**
Snake Hibernaculum	Unknown	Unknown	**Yes**
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Unknown	Unknown	**Yes**
Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs)	Unknown	Unknown	**Yes**
Colonially – Nesting Bird Breeding Habitat (Ground)	Unknown	Unknown	**Yes**
Migratory Butterfly Stopover Areas	N/A	N/A	No
Landbird Migratory Stopover Areas	N/A	N/A	No
Deer Winter Congregation Areas	No	No	No
Rare Vegetation Communities			
Cliffs and Talus Slopes	Unknown	Unknown	**Yes**
Sand Barrens	Unknown	Unknown	**Yes**
Alvar	Unknown	Unknown	**Yes**
Old Growth Forest	Unknown	Unknown	**Yes**
Savannah	Unknown	Unknown	**Yes**
Tallgrass Prairie	Unknown	Unknown	**Yes**
Other Rare Vegetation Communities	Unknown	Unknown	**Yes**
Specialized Wildlife Habitats			
Waterfowl Nesting Area	Unknown	Unknown	**Yes**
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Unknown	Unknown	**Yes**
Woodland Raptor Nesting Habitat	Unknown	Unknown	**Yes**
Turtle Nesting Areas	Unknown	Unknown	**Yes**
Seeps and Springs	Unknown	Unknown	**Yes**
Amphibian Breeding Habitat (Woodland)	Unknown	Unknown	**Yes**
Amphibian Breeding Habitat (Wetlands)	Unknown	Unknown	**Yes**
Woodland Area-Sensitive Bird Breeding Habitat	Unknown	Unknown	**Yes**
Habitats for Species of Conservation Concern			
Marsh Bird Breeding Habitat	Unknown	Unknown	**Yes**
Open Country Bird Breeding Habitat	Unknown	Unknown	**Yes**
Shrub/Early Successional Bird Breeding Habitat	Unknown	Unknown	**Yes**
Terrestrial Crayfish	No	No	No

Wildlife Habitat	Present Within the Project Area	Present Within Project Location	Carried Forward to Site Investigation (Y/N)
Special Concern and Rare Wildlife Species (Refer to Appendix II)	Possible	Possible	**Yes**
Animal Movement Corridors			
Amphibian Movement Corridors	Unknown	Unknown	**Yes**
Deer Movement Corridors	N/A	N/A	**No**

Following a full review of available records applicable to the Project, Table 11 has been prepared to outline the results of the records review as it specifically relates to the REA Regulation. This table outlines the presence of natural features and wildlife habitats that have the potential to overlap with, or occur within 120m of, the Project Location.

Table 11. Summary of Records Review for the Nation Rise Wind Farm

Criteria	Result
1. In or within 120m of a Provincial Park or Conservation Reserve	The Project is not located in or within 120m of a Provincial Park or Conservation Reserve.
2. In a Natural Feature	The results of this records review indicate the Project Location (i.e. disturbance area, collection lines, access roads, etc.) overlaps with natural features. A total of 63 woodlands have the potential to overlap with the Project Location. Species associations and distances of these habitats to the Project Location will be confirmed during the site investigation phase of this NHA. A total of 12 wetlands have the potential to overlap with the project location. Species associations and distances of these habitats to the Project Location will be confirmed during the site investigation phase of this NHA. No PSWs overlap with the project location. The intention of the proposed Project Location is to avoid overlap with natural features, including woodlands and wetlands, wherever practicable.
3. Within 50m of a Provincially Significant ANSI-Earth Science (ES)	No Provincially Significant ANSI-ES is located in or within 50m of the Project Location.
4. Within 120m of a Natural Feature	
Provincially Significant ANSI-Life Science (LS)	No Provincially Significant ANSI-LS is located in or within 120m of the Project Location.
Coastal Wetland	No coastal wetlands are located in or within 120m of the Project Location.
Northern Wetland	No northern wetlands are located in or within 120m of the Project Location.

Criteria	Result
Southern Wetland	There are 45 unevaluated wetlands in and within 120m of the Project Location. All of the potential wetland habitats in and within 120m of the Project Location will be further examined during the site investigation phase of this NHA.
Wildlife Habitat	A total of 137 woodlands and 45 unevaluated wetlands are located in or within 120m of the Project Location and could provide several types of Significant Wildlife Habitat (SWH). Other natural features such as naturalized drainage ditches and hedgerows have been identified within the Project Area and could also provide SWH, and will be assessed in more detail during the site investigation phase of the NHA. All of these wildlife habitats will be examined during the site investigation phase to confirm presence of candidate significant wildlife habitat.
Woodland	A total of 137 woodlands are located in or within 120m of the Project Location. Basemapping indicates these habitats range in size from 0.06 to 133.39ha. These woodlands are expected to be dominated by a variety of deciduous, mixed, and coniferous forests of various ages.

9.0 References

Publications

Argus, G.W., K.M. Pryer, D.J. White, and C.J. Keddy, eds. 1982-1987. Atlas of the rare vascular plants of Ontario. Four parts. National Museum of Natural Sciences, Ottawa.

Cadman, M. D., D. A. Sutherland, G. C. Beck, D. Lepage, and A. R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto.

Dobbyn, J.S. 1994. Atlas of the Mammals of Ontario. Don Mills, Federation of Ontario Naturalists.

Ernst, C.H. and J.E. Lovich. 2009. Turtles of the United States and Canada. 2nd Edition. Johns Hopkins University Press, Baltimore, xii + 827pp.

Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. January 2015.

Ontario Ministry of Natural Resources (OMNR). 2012. Natural Heritage Assessment Guide for Renewable Energy Projects. November 2012.

Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat: Technical Guide. MNR, October 2000.

Internet Sources

Acadia University, Université de Montréal Biodiversity Centre, University of Toronto Mississauga, University of British Columbia. Canadensys Explorer. Available at: http://data.canadensys.net/explorer/en/search [Royal Ontario Museum] (Accessed January 23, 2017).

Altman, B. and R. Sallabanks. 2012. Olive-sided Flycatcher (*Contopus cooperi*). The Birds of North America (P. G. Rodewald, Ed.). Ithaca, NY: Cornell Lab of Ornithology. Retrieved from the Birds of North America Online: https://birdsna.org/Species-Account/bna/species/olsfly (Accessed May 4, 2017).

Brigham, R.M., J. Ng, R.G. Poulin, and S.D. Grindal. 2011. Common Nighthawk (*Chordeiles minor*). The Birds of North America (P. G. Rodewald, Ed.). Ithaca, NY: Cornell Lab of Ornithology. Retrieved from the Birds of North America Online: https://birdsna.org/Species-Account/bna/species/comnig (Accessed May 4, 2017).

Butterflies and Moths of North America. 2014. Habitat Descriptions (Various Species). Available at: http://www.butterfliesandmoths.org/species (Accessed August 15, 2016).

Cornell Lab of Ornithology. 2015. All About Birds (Various Species). Available at: http://www.allaboutbirds.org/guide (Accessed August 15, 2016).

Cornell Lab of Ornithology and National Audubon Society. 2008. Great Backyard Bird Count. Data accessed from NatureCounts, a node of the Avian Knowledge Network, Bird Studies Canada. Available at: http://www.naturecounts.ca/ (Accessed September 7, 2016).

eFloras. 2008. Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA. Available at: http://www.efloras.org (Accessed May 4, 2017).

Evans, M, E. Gow, R.R. Roth, M.S. Johnson, and T.J. Underwood. 2011. Wood Thrush (*Hylocichla mustelina*). The Birds of North America (P. G. Rodewald, Ed.). Ithaca, NY: Cornell Lab of Ornithology. Retrieved from the Birds of North America Online: https://birdsna.org/Species-Account/bna/species/woothr (Accessed May 4, 2017).

Heath, S.R., E.H. Dunn, and D.J. Agro. 2009. Black Tern (*Chlidonias niger*), The Birds of North America (P.G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America: https://birdsna.org/Species-Account/bna/species/blkter. DOI: 10.2173/bna.147 (Accessed May 2, 2017).

IBA Canada. 2017. Important Bird Areas of Canada. Available at: http://www.ibacanada.ca/mapviewer.jsp?lang=EN (Accessed January 18, 2017).

International Union for Conservation of Nature and Natural Resources (IUCN). 2016a. Cambarus diogenes. Available at: http://www.iucnredlist.org/details/153814/0 (Accessed January 22, 2017).

International Union for Conservation of Nature and Natural Resources (IUCN). 2016b. Fallicambarus fodiens. Available at: http://www.iucnredlist.org/details/153747/0 (Accessed January 22, 2017).

MacNaughton, A., R. Layberry, C. Jones, and B. Edwards. 2016. Ontario Butterfly Atlas Online. Toronto Entomologists' Association. Available at: http://www.ontarioinsects.org/atlas_online.htm (Accessed January 30, 2017).

McCarty, J.P. 1996. Eastern Wood-Pewee (*Contopus virens*). The Birds of North America (P. G. Rodewald, Ed.). Ithaca, NY: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: https://birdsna.org/Species-Account/bna/species/eawpew (Accessed May 4, 2017).

Ministry of Northern Development and Mines (MNDM). 2016. Ontario Geological Survey Mapping. Available at: http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth (Accessed January 20, 2017).

Ministry of Natural Resources and Forestry (MNRF). 2016a. Land Information Ontario (LIO). Available at: https://www.ontario.ca/page/land-information-ontario.

Ministry of Natural Resources and Forestry (MNRF). 2016b. Habitat Descriptions (Various Species). Available at: https://www.ontario.ca/environment-and-energy/species-risk-ontario-list (Accessed August 15, 2016).

Ministry of Natural Resources and Forestry (MNRF). 2014. Make a Map: Natural Heritage Areas. Available at: http://www.giscoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US (Accessed January 18, 2017).

National Audubon Society. 2013. Christmas Bird Count Summaries, Lakeshore Count Circle. Available at: http://birds.audubon.org/christmas-bird-count (Accessed January 18, 2017).

Natural Heritage Information Centre. 2015. Species of conservation concern [Data file]. Available at: https://www.ontario.ca/page/get-natural-heritage-information (Accessed January 30, 2017).

Niagara Escarpment Commission (NEC). 2015. Niagara Escarpment Plan (NEP) Maps. Ontario Ministry of Natural Resources. Available at: http://escarpment.org/landplanning/planmaps/index.php#map1 (Accessed March 20, 2017).

Ontario Nature. 2016a. Ontario Reptile and Amphibian Atlas: Interactive Maps. Available at: http://www.ontarioinsects.org/herpatlas/herp_online.html (Accessed May 9, 2016).

Ontario Nature. 2016b. Reptiles and Amphibians of Ontario. Available at: https://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php (Accessed February 11, 2017).

Reitsma, L., M. Goodnow, M.T. Hallworth, and C.J. Conway. 2009. Canada Warbler (*Cardellina canadensis*). The Birds of North America (P. G. Rodewald, Ed.). Ithaca, NY: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: https://birdsna.org/Species-Account/bna/species/canwar (Accessed May 4, 2017).

South Nation Conservation Authority (SNCA). 2014. State of the Nation Report. Available at: http://www.nation.on.ca/sites/default/files/State%20of%20the%20Nation%20Report%202014_0.pdf. (Accessed January 18, 2017)

South Nation Conservation Authority (SNCA). 2016. Forest Cover and Trends Analysis. Available at: http://www.nation.on.ca. (Accessed January 18, 2017)

The United Counties of Stormont, Dundas, and Glengarry (UCSDG). 2009. Official Plan for the United Counties of Stormont, Dundas, and Glengarry. Available at: http://www.sdgcounties.ca/government/departments/transportation-and-planning/official-plan/official-plan-documentation. (Accessed January 18, 2017).

The United Counties of Stormont, Dundas, and Glengarry (UCSDG). 2010. SDG County Forest Management Plan 2007-2026. Available at: http://www.sdgcounties.ca/sites/default/files/documents/SDG%2020%20Year%20Forest%20Management%20Plan.pdf. (Accessed January 18, 2017).

White, C.M., N.J. Clum, T.J. Cade, and W.G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*). The Birds of North America (P. G. Rodewald, Ed.). Ithaca, NY: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: https://birdsna.org/Species-Account/bna/species/perfal (Accessed May 4, 2017).

Wiggins, D.A., D. W. Holt and S.M. Leasure. 2006. Short-eared Owl (*Asio flammeus*), The Birds of North America Online (A. Poole, Ed.) Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/062. doi:10.2173/bna.62 (Accessed May 11, 2015).

Personal Communication

Canadian Wildlife Service (CWS) Staff. Canadian Wildlife Service, Environment Canada. September 12, 2016.

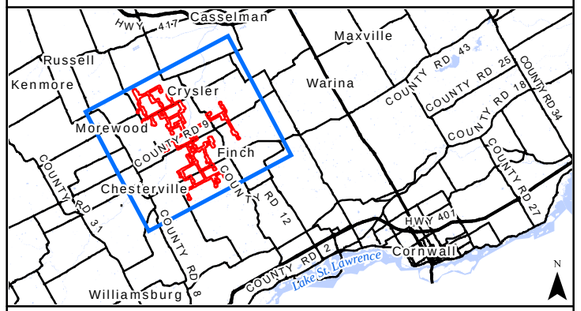
Ministry of Natural Resources and Forestry (MNRF) Staff. Information Request – Renewable Energy Project. September 23, 2016.

Maps

Map 1

Nation Rise Wind Farm

Key Map



Legend

- Map Extent
- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Intermittent Watercourse (LIO)
- Open Water (LIO)
- Deer Yard (Stratum 1) (LIO)
- Provincially Significant Wetland (PSW) (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)
- Municipal Boundary

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown Area
- Proposed Temporary Turning Radius
- Proposed Temporary Access Road for Construction
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road
- Proposed Substation

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:68,000**

0 1 2 3 4 Kilometers

N

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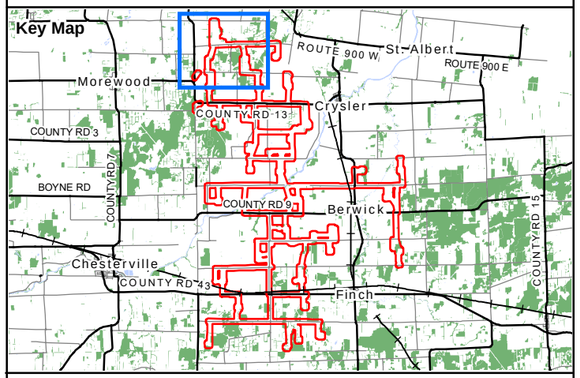
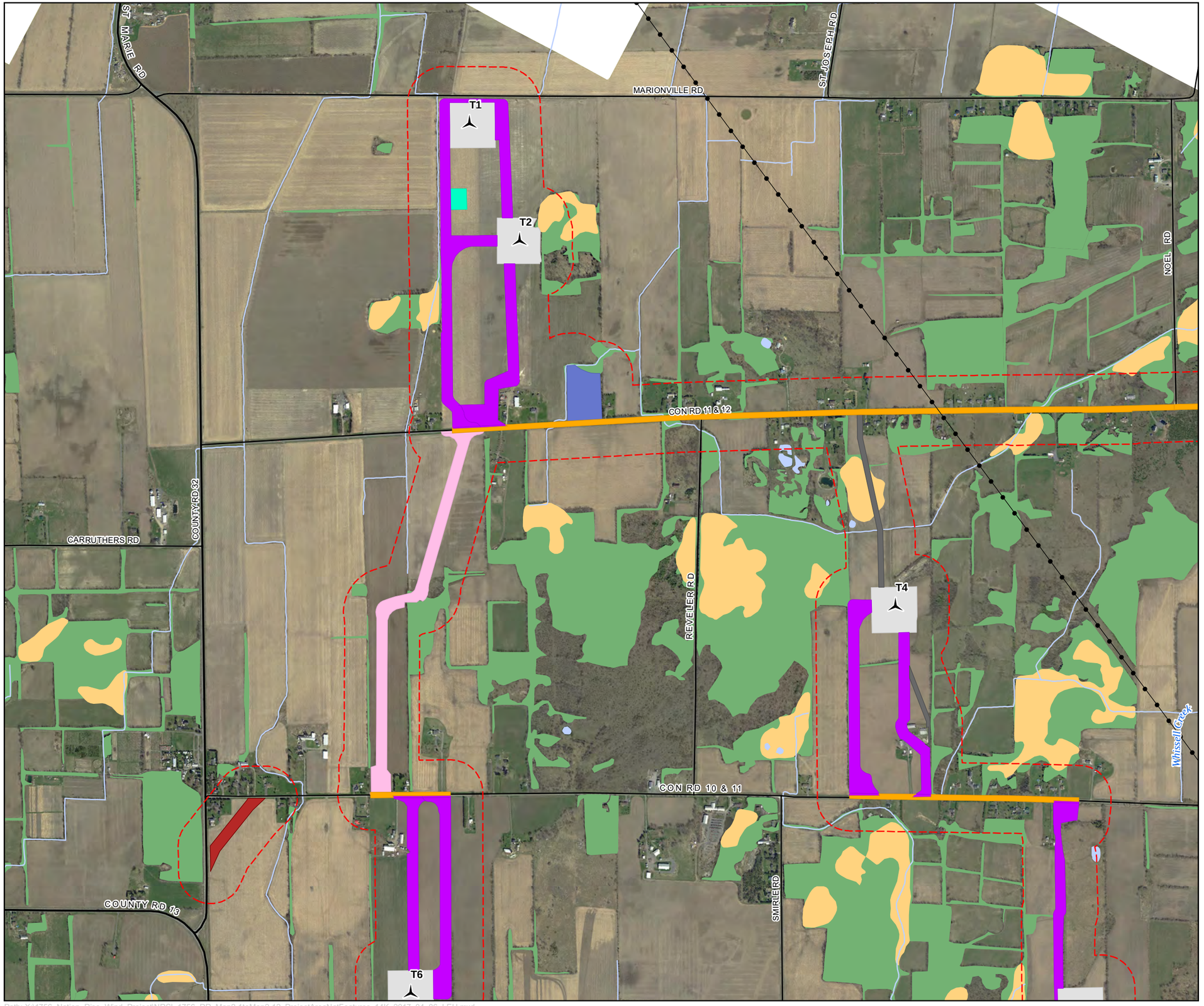
Map 2 - 1

Nation Rise Wind Farm

Project Area and Natural Features





Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown Area
- Proposed Temporary Turning Radius
- Proposed Temporary Access Road for Construction
- Proposed Meteorological Tower Footprint and Access Road

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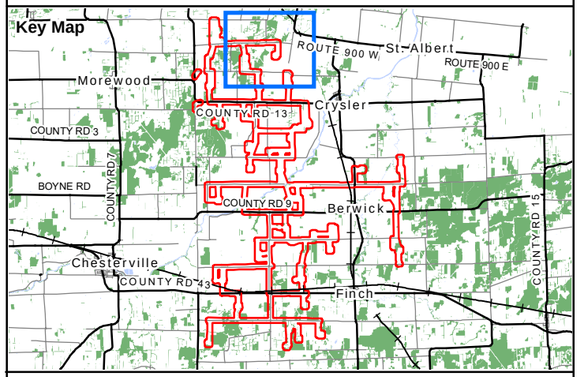
Map 2 - 2

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

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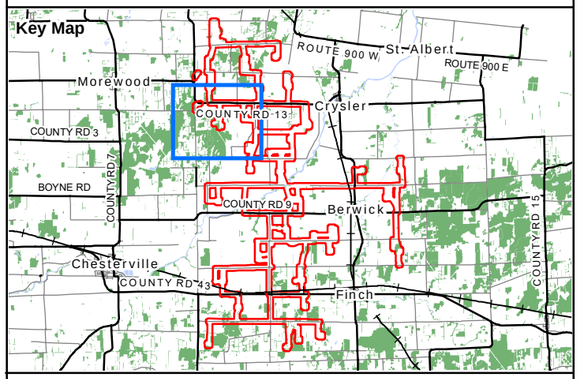
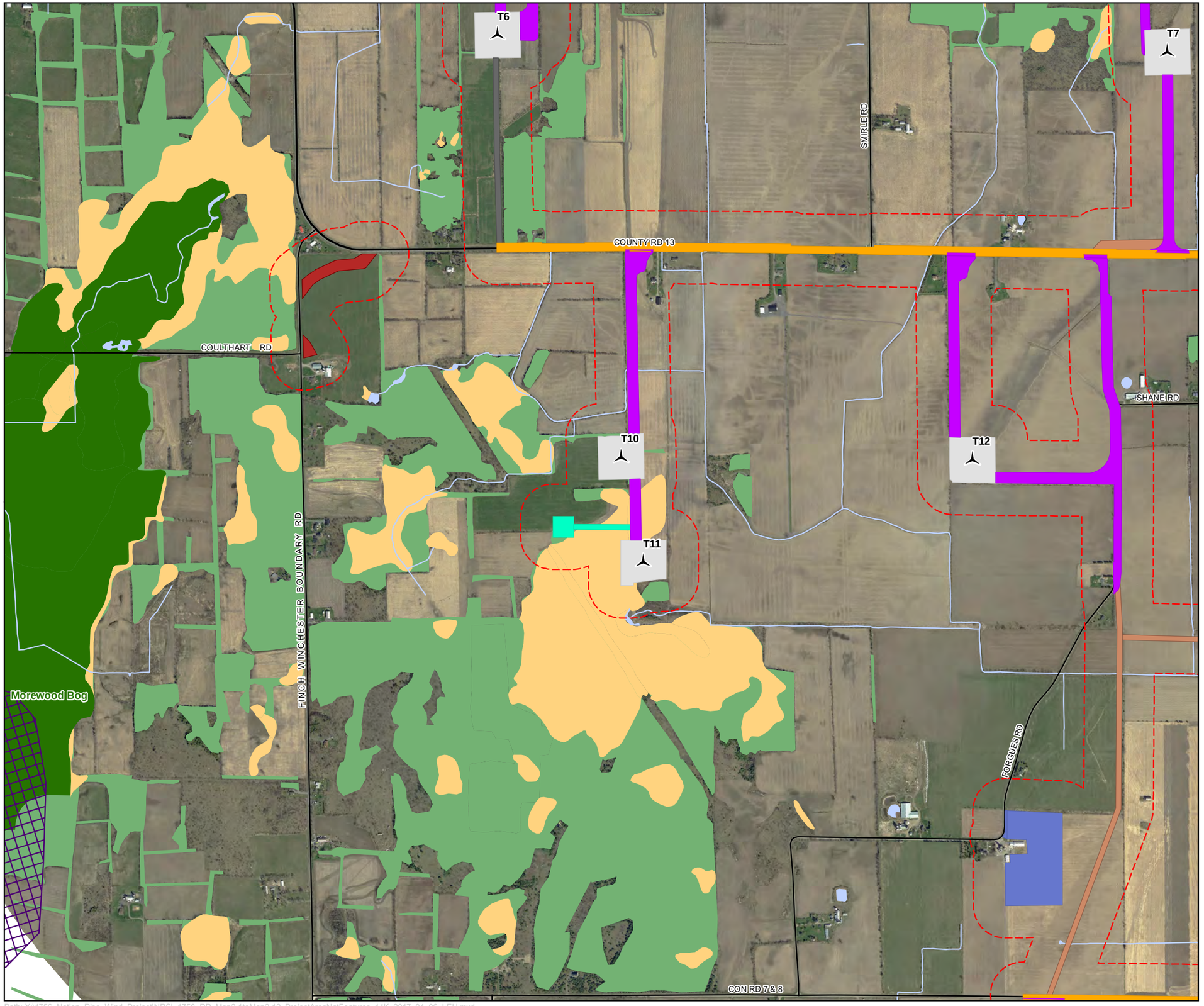
Map 2 - 3

Nation Rise Wind Farm

Project Area and Natural Features





Legend

- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Deer Yard (Stratum 1) (LIO)
- Provincially Significant Wetland (PSW) (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown Area
- Proposed Temporary Turning Radius
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

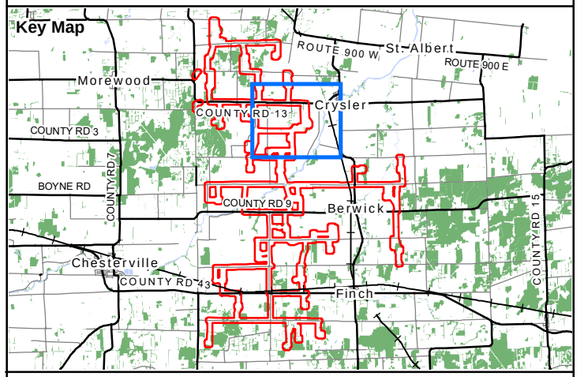
N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 4

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road
- Proposed Substation

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

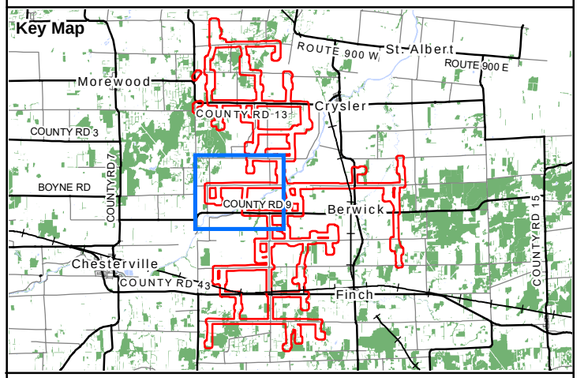
N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 5

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Temporary Turning Radius
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

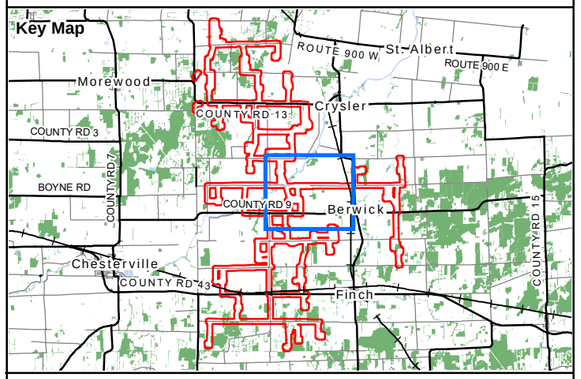
N

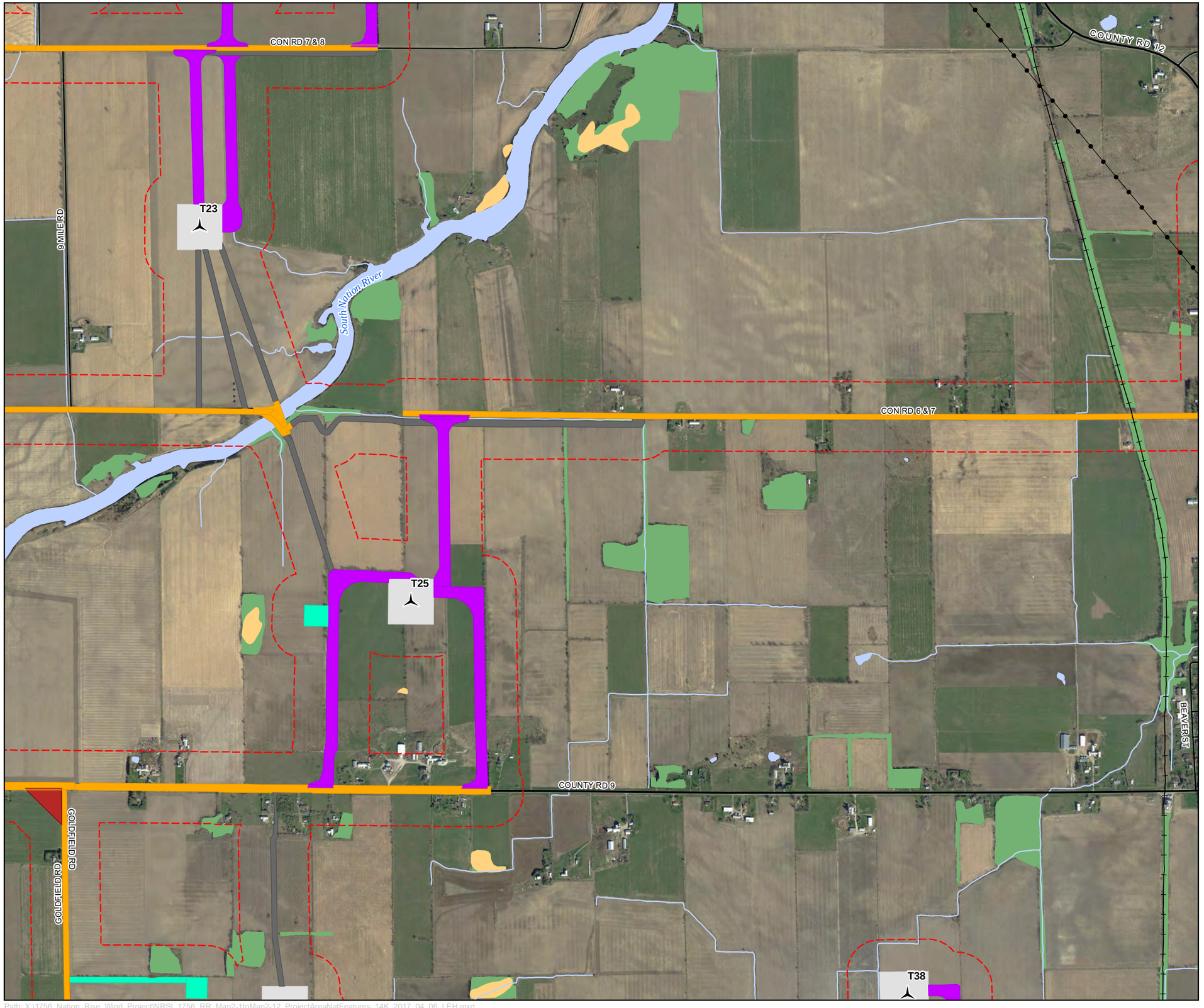
Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 6

Nation Rise Wind Farm

Project Area and Natural Features





Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Temporary Turning Radius
- Proposed Meteorological Tower Footprint and Access Road

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

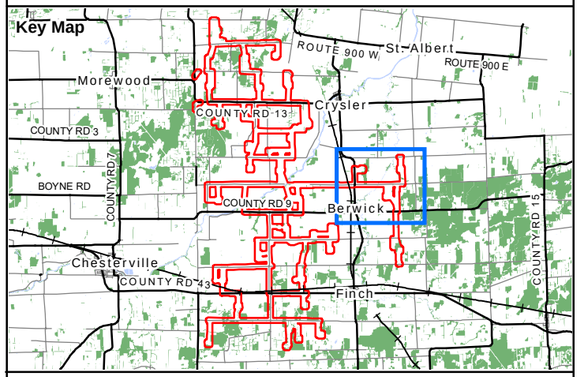
0 200 400 600 800 Meters

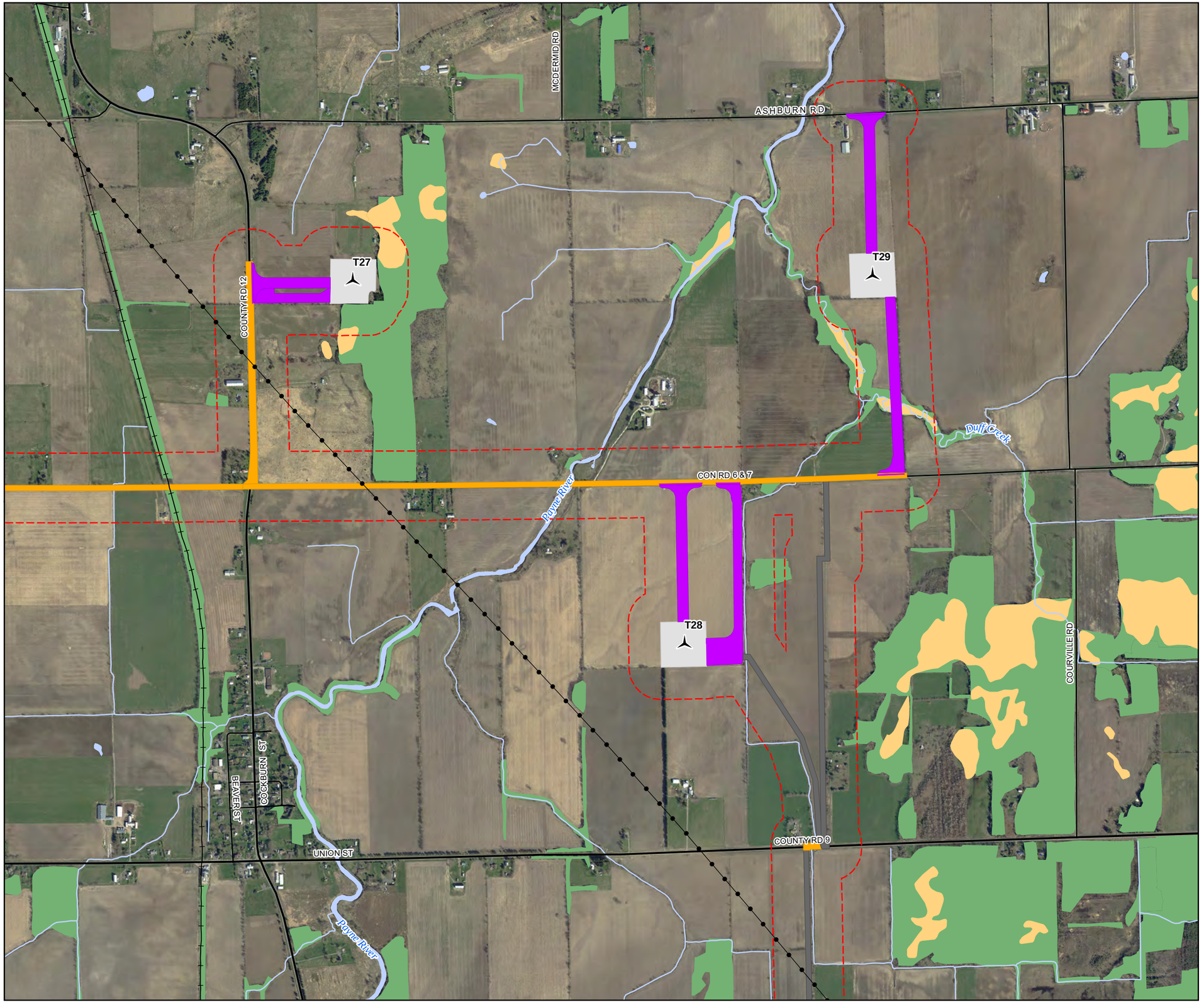
N

Map 2 - 7

Nation Rise Wind Farm

Project Area and Natural Features





Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

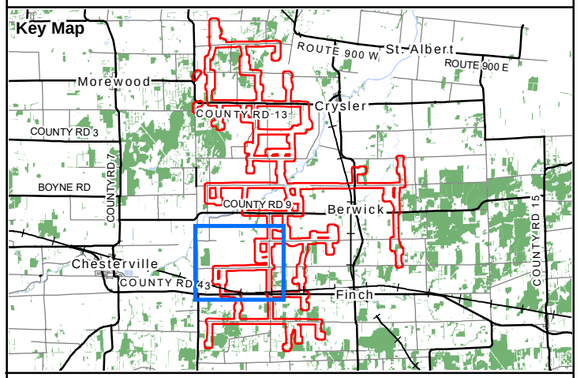
N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 8

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown Area
- Proposed Temporary Turning Radius
- Proposed Meteorological Tower Footprint and Access Road

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

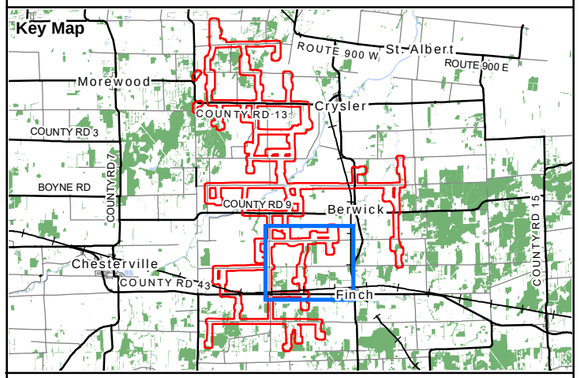
N

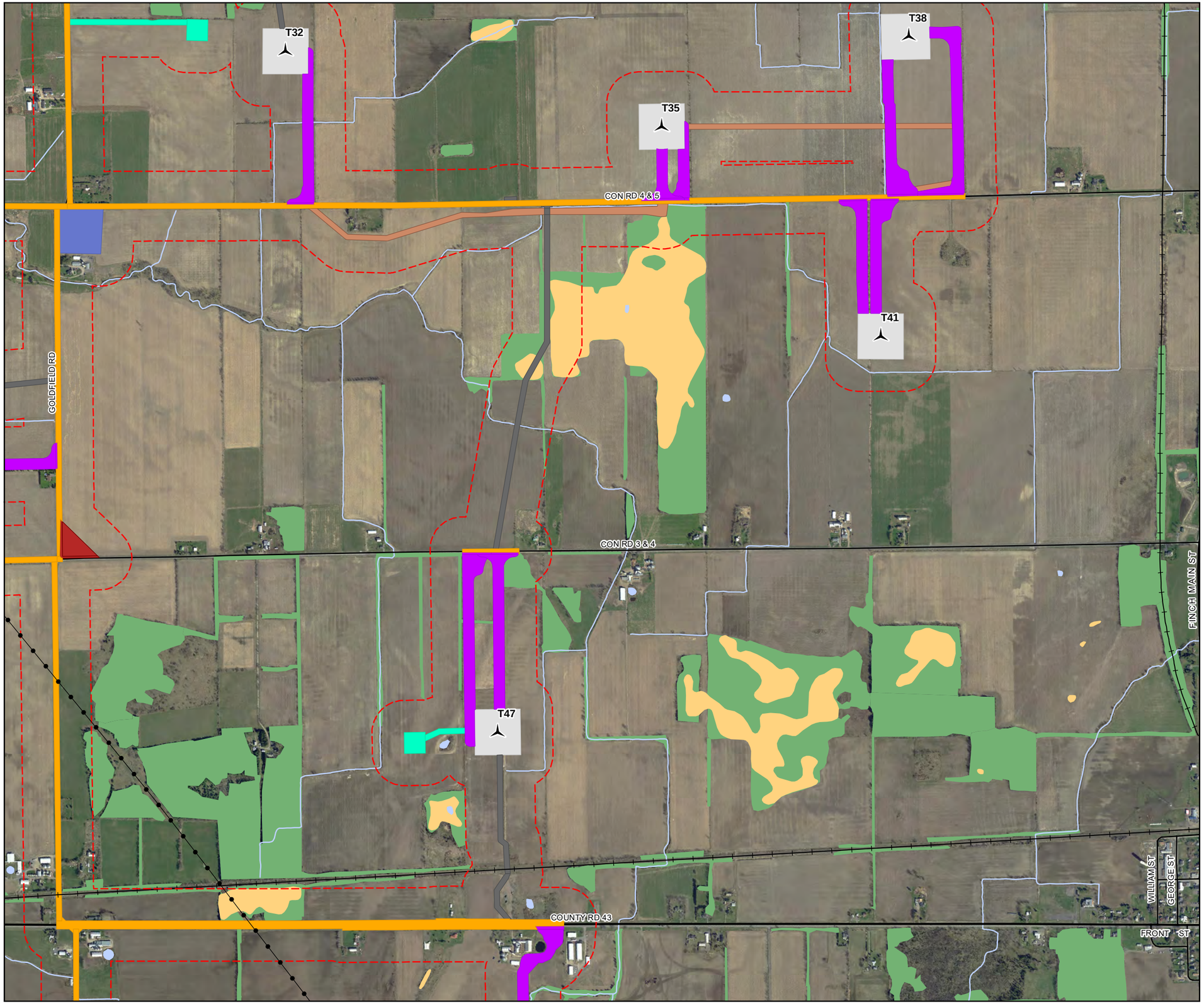
Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 9

Nation Rise Wind Farm

Project Area and Natural Features





Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown Area
- Proposed Temporary Turning Radius
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

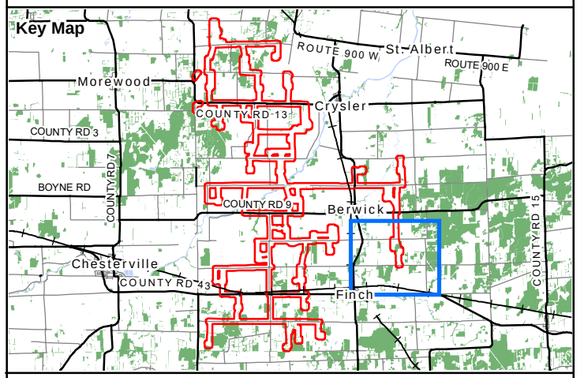
N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 10

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

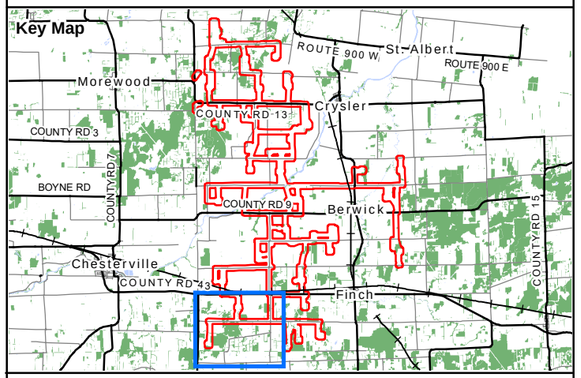
N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 2 - 11

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line

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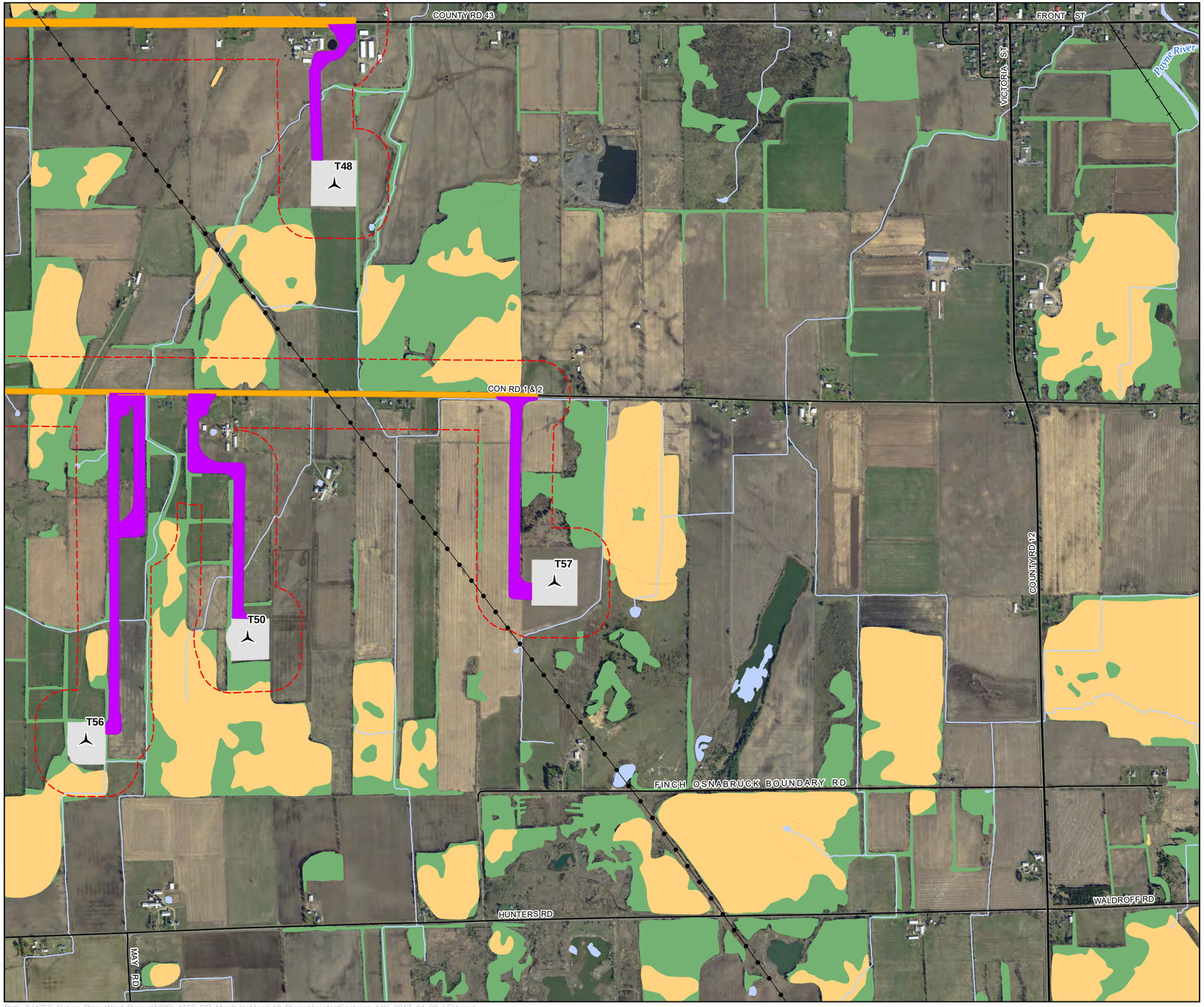
Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

N

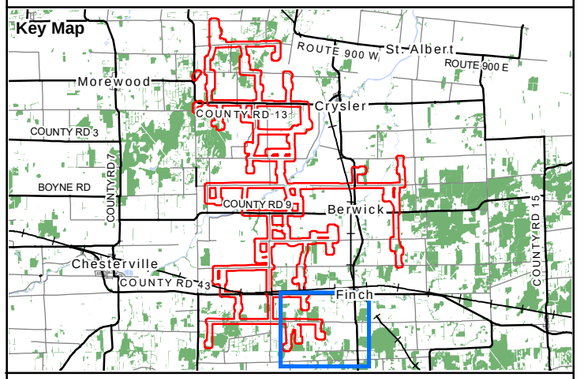
Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd



Map 2 - 12

Nation Rise Wind Farm

Project Area and Natural Features



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Unevaluated Wetland (LIO)
- Wooded Area (LIO)

Project Components

- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line

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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:14,000**

0 200 400 600 800 Meters

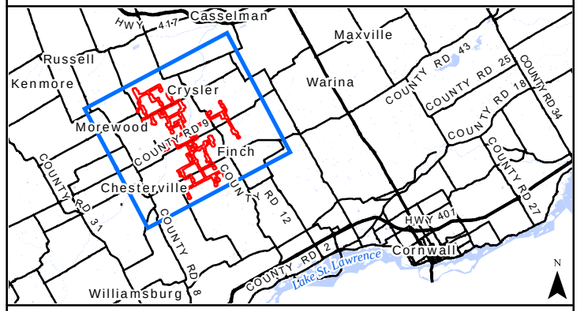
N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map2-1toMap2-12_ProjectAreaNatFeatures_14K_2017_04_06_LEH.mxd

Map 3

Nation Rise Wind Farm

NHIC Records Query



Legend

- Project Area
- NHIC 1km Square
- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Intermittent Watercourse (LIO)
- Open Water (LIO)
- Wooded Area (LIO)

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Project: 1756 Date: April 4, 2017	NAD83 - UTM Zone 18 Size: 11x17" **1:68,000**

0 1 2 3 4 Kilometers

N

Path: X:\1756_Nation_Rise_Wind_Project\NRSI_1756_RR_Map3_NHIC_70K_2017_04_04_LEH.mxd

Appendix I
Natural Heritage Information Centre Query Results

Appendix I. Natural Heritage Information Centre Query Results*

Scientific Name	Common Name	EO ID	Atlas Square(s)	Last Observed Date
Herpetofauna				
Chelydra serpentina	Snapping Turtle	95702	18VR8103	2009-07-10
		95705	18VR8703	2009-08-14
Vegetation				
Carex atlantica	Atlantic Sedge	23111	18VQ9396, 18VR9402, 18VR9401, 18VR9301	1982-06-19 (only observed date)
Weissia muhlenbergiana	Mühlenberg's Weissia	35648	18VQ8695, 18VQ8696, 18VQ8792, 18VQ8793, 18VQ8794, 18VQ8795, 18VQ8796, 18VQ8797, 18VQ8798, 18VQ8892, 18VQ8893, 18VQ8894, 18VQ8895, 18VQ8896, 18VQ8897, 18VQ8898, 18VQ8899, 18VQ8994, 18VQ8995, 18VQ8996, 18VQ8997, 18VQ8998, 18VQ8999, 18VQ9095, 18VQ9096, 18VQ9097, 18VQ9098, 18VQ9099, 18VQ9194, 18VQ9195, 18VQ9196, 18VQ9197, 18VQ9199, 18VQ9295, 18VQ9296, 18VQ9396, 18VR8900, 18VR9000, 18VR9001, 18VR9100, 18VR9101, 18VR9301, 18VR9302, 18VR9401, 18VR9402	1985-04-29 (only observed date)

* This query does not include any Provincially Threatened or Endangered Species at Risk, which will be addressed separately with the MNRF when considering any permitting requirements relating to the *Endangered Species Act* (2007).

Appendix II
Summary of Habitat Descriptions for Species of Conservation Concern

Appendix II. Summary of Habitat Descriptions for Species of Conservation Concern (SCC) Identified Near the Nation Rise Wind Farm Project Area

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Birds					
Asio flammeus	Short-eared Owl	• Prefers large open areas including grasslands, meadows that are grassy or bushy, marshes, bogs, and tundra[1,2]. • Requires 75-100 ha of contiguous open habitat[2]. • Considered to be a SCC for its rarity during the non-breeding season and because it is listed as a species of Special Concern provincially and nationally. • Potential habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species is addressed under the consideration of Open Country Bird Breeding Habitat. • Overwintering habitat for this species is addressed under the consideration of Raptor Wintering Areas. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Open Country Bird Breeding Habitat** **Raptor Wintering Area**
Cardellina canadensis	Canada Warbler	• Breeds in a range of deciduous and coniferous (usually wet) forest types, all with a well- developed, dense shrub layer.[3] • Nests are usually located on or near the ground on mossy logs or roots, along stream banks or on hummocks.[3] • Considered to be a SCC because it is listed as a species of Special Concern provincially and is listed as Threatened nationally and on Schedule 1 of Species at Risk Act. • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species has been determined through the consideration of Woodland Area-sensitive Bird Breeding Habitats. • This species overwinters in South America[10]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Woodland Area-Sensitive Bird Breeding Habitat**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Chlidonias niger	Black Tern	• Prefers wetlands, specifically large coastal or inland cattail marshes[2]. • Occupy marshy edges of rivers, lakes or ponds, wet open fens and wet meadows[2]. • Returns to same area to nest each year in loose colonies[2]. • Must have shallow water (0.5-1.0m deep) and areas of open water near nests[2]. • Marshes greater than 20ha in size are generally required for suitable habitat, with a minimum recorded size of 5.3ha[2,4] • Grasslands adjacent to nesting habitat are also required for foraging of insects; however, this species will also feed on fish, crayfish and frogs[2] • Considered to be a SCC because it is listed as a species of Special Concern provincially. • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species has been determined through the consideration of Marsh Bird Breeding Habitat. • This species overwinters in South America[4]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Marsh Bird Breeding Habitat**
Chordeiles minor	Common Nighthawk	• Prefers open habitats, such as forest clearings, open woodlands, ploughed fields, or gravel beaches[2]. • Nests on open ground, in clearings in dense forests, ploughed fields, gravel beaches or barren areas with rocky soils, in open woodlands and on flat gravel roofs.[2] • Considered to be a SCC because it is listed as a species of Special Concern provincially and is listed as Threatened nationally. • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species (if present) is addressed through Species of Conservation Concern (Common Nighthawk). • This species overwinters in South America[11]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Common Nighthawk)**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Contopus cooperi	Olive-sided Flycatcher	• Prefers semi-open conifer forest, especially spruce, near ponds, lakes or rivers.[2] • Uses treed wetlands for nesting and burns with dead trees for perching.[2] • Considered to be a SCC because it is listed as a species of Special Concern provincially and is listed as Threatened nationally. • Potential habitat for this species may be found in the Project Area and Project Location. • Breeding habitat for this species (if present) is addressed through Species of Conservation Concern (Olive-sided Flycatcher). • This species overwinters in South America[12]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Olive-sided Flycatcher)**
Contopus virens	Eastern Wood-Pewee	• Prefers open, deciduous, mixed or coniferous forests, and forests predominated by oak containing little understory[2]. • Also utilizes forest clearings, forest edges, farm woodlots, and parks[2]. • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species (if present) is addressed through Species of Conservation Concern (Eastern Wood-Pewee). • This species overwinters in South America[13]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Eastern Wood-Pewee)**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Falco peregrinus anatum	Peregrine Falcon	• Nests on rock cliffs and crags, especially situated near water, and on tall buildings in urban centres[5]. • Considered to be a SCC for its rarity during the breeding season and because it is listed as a species of Special Concern provincially and nationally. • Potential habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species (if present) is addressed through Species of Conservation Concern (Peregrine Falcon). • This species overwinters along lake shores with concentrations of waterbirds, pigeons, or doves[14]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Peregrine Falcon)**
Haliaeetus leucocephalus	Bald Eagle	• Requires large continuous areas of deciduous or mixed woods near large lakes or rivers[2]. • Requires an area of 255ha for nesting, shelter, feeding and roosting[2]. • Prefers open woods with 30 to 50% canopy cover and will nest in trees 50 to 200m from the shore of a water body. Bald eagles require tall, dead or partially dead trees within 400m of a nest for perching[2]. • Considered to be a SCC for its rarity during the non-breeding season and because it is listed as a species of Special Concern provincially. • Potential habitat for this species may be found in the Project Area and Project Location. • Breeding habitat for this species is addressed under the consideration of Bald Eagle and Osprey Nesting, Foraging and Perching Habitat. • Overwintering habitat for this species is addressed under the consideration of Raptor Wintering Areas.	**Y**	**Y**	**Bald Eagle and Osprey Nesting, Foraging and Perching Habitat** **Raptor Wintering Area**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Hylocichla mustelina	Wood Thrush	• Prefers undisturbed, moist, mature deciduous or mixed forest with deciduous sapling growth[2, 5]. • Considered to be a SCC because it is listed as a species of Special Concern provincially and is listed as Threatened nationally. • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Breeding habitat for this species (if present) is addressed through Species of Conservation Concern (Wood Thrush). • This species overwinters in South America[15]. As such, overwintering habitat for this species is not applicable in or within 120m of the Project Location. • Migratory habitat for this species has been determined through the consideration of Landbird Migratory Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Wood Thrush)**
Phalaropus tricolor	Wilson's Phalarope	• Uses open wetlands, ponds, lakes, marshes and sloughs with wet meadow vegetation. Can be found in freshwater and coastal marshes.[2] • Nests on ground in loose colonies; sewage lagoons with grassy edges, may nest in loose colonies where nests are 9 to 12m apart.[2] • Considered to be a SCC for its rarity during breeding. • Potential habitat for this species may be found in the Project Area and Project Location. • Breeding habitat for this species (if present) is addressed through Species of Conservation Concern (Wilson's Phalarope). • Since this species is considered rare during the breeding season only[1], overwintering and migratory habitat considerations are not applicable.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Wilson's Phalarope)**
Herpetofauna					
Chelydra serpentina	Snapping Turtle	• Resides in habitat that consists of permanent or semi-permanent fresh water, including marshes, swamps or bogs, or rivers and streams with soft muddy banks or bottoms[2]. • Uses soft soil or clean dry sand on south-facing slopes for nest sites, which can be some distance from water. They will also take advantage of man-made structures for nest sites, including roads (especially with gravel shoulders), dams and aggregate pits[2]. • Often hibernate together in groups in mud under water[2]. • Potential breeding and over-wintering habitat for this species may be found within the Project Area and Project Location. • Suitable habitat for this species is addressed under the consideration of Turtle Wintering Areas and Turtle Nesting Areas.	**Y**	**Y**	**Turtle Nesting Areas** **Turtle Wintering Areas**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Graptemys geographica	Northern Map Turtle	• Found in large bodies of water with soft bottoms and aquatic vegetation[2]. • Basks in groups on logs, rocks, beaches or sandy edges and uses soft soil or clean dry sand for nest sites that can be some distance from water[2]. • Home range size is larger for females (approximately 70ha) than males (approximately 30ha) and includes hibernation, basking, nesting and feeding areas, while aquatic corridors (e.g. streams) are required for movement[2]. • Potential breeding and over-wintering habitat for this species may be found within the Project Area and Project Location. • Suitable habitat for this species is addressed under the consideration of Turtle Wintering Areas and Turtle Nesting Areas.	**Y**	**Y**	**Turtle Nesting Areas** **Turtle Wintering Areas**
Pseudacris triseriata population 2	Western Chorus Frog (Great Lakes/St. Lawrence - Canadian Shield Population)	• Inhabits forest openings around woodlands ponds but can also be found in or near damp meadows, marshes, roadside ditches, bottomland swamps and temporary ponds in open country or even urban areas.[2,6] • Breeds in almost any fishless pond with at least 10cm of water including quiet, shallow, usually temporary waterbodies with vegetation that is submerged or protrudes from the water, and especially in rain-flooded meadows and ditches, and in temporary ponds on floodplains[6]. • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Suitable habitat for this species is addressed under the consideration of Amphibian Breeding Habitat (Woodland) and Amphibian Breeding Habitat (Wetland).	**Y**	**Y**	**Amphibian Breeding Habitat (Woodland)** **Amphibian Breeding Habitat (Wetland)**
Sternotherus odoratus	Eastern Musk Turtle	• Uses aquatic habitats, except when laying eggs.[2] • Uses shallow, slow-moving water of lakes, streams, marshes and ponds.[2] • Hibernates in underwater mud, in banks or in muskrat lodges and sometimes congregates at hibernation sites.[2] • Underwater shelters (e.g. rocks, sunken logs etc.) are necessary.[7] • Eggs are laid in debris or under stumps or fallen logs near the waters' edge; this species often shares nest sites with others or with other species of turtles.[2,7] • The home range of this species averages 1.75ha or less, and it is likely confined to one body of water unless drought causes the water body to dry up. Studies examining terrestrial movements indicate an average movement of only 13m from the water body and a maximum of 49m.[7] • Potential breeding and over-wintering habitat for this species may be found within the Project Area and Project Location. • Nesting and overwintering habitat for this species (if present) is addressed through Species of Conservation Concern (Eastern Musk Turtle).	**Y**	**Y**	**Habitat for Species of Conservation Concern (Eastern Musk Turtle)**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Thamnophis sauritus septentrionalis	Eastern Ribbonsnake	• Inhabits sunny, grassy areas with low dense vegetation near bodies of shallow, permanent, quiet water; wet meadows, grassy marshes or sphagnum bogs; borders of ponds, lakes or streams.[2] • Generally found near forested areas, and tends to be absent from non-forested areas.[6] • Hibernates in groups.[2] • Potential habitat for this species may be found within the Project Area and Project Location. • Suitable overwintering habitat for this species is addressed under the consideration of Reptile Hibernacula.	**Y**	**Y**	**Reptile Hibernacula**
Vegetation					
Carex atlantica	Atlantic Sedge	• Prefers clearings in shrubby bogs.[2] • Potential habitat for this species may be found within the Project Area and Project Location.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Atlantic Sedge)**
Weissia muhlenbergiana	Mühlenberg's Weissia	• Prefers soils, lawns, fields, roadsides; may grow amongst grasses.[8] • Grows at moderate elevations.[8] • Potential habitat for this species may be found within the Project Area and Project Location.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Mühlenberg's Weissia)**
Insects					
Callophrys lanoraieensis	Bog Elfin	• Found in black spruce (*Picea mariana*) bog habitats.[9] • Caterpillars rely exclusively on black spruce needles for feeding.[9] • Potential breeding habitat for this species may be found within the Project Area and Project Location.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Bog Elfin)**
Danaus plexippus	Monarch	• Utilizes a variety of open habitats including fields, meadows, weedy areas, marshes, and roadsides, where a variety of nectar-producing wildflowers can be found for feeding.[9] • Caterpillars rely on a variety of milkweed species, including common milkweed (*Asclepias syriaca*) and swamp milkweed (*A. incarnata*), among others.[9] • Potential breeding habitat for this species may be found within the Project Area and Project Location. • Migratory habitat for this species has been determined through the consideration of Migratory Butterfly Stopover Areas, which is not applicable as the Project is located >5km from Lake Ontario.	**Y**	**Y**	**Habitat for Species of Conservation Concern (Monarch)**

Scientific Name	Common Name	Habitat Description	Potential Habitat Present Within the Project Area (Y/N)	Potential Habitat Present Within the Project Location (Y/N)	Site Investigation Consideration
Pieris virginiensis	West Virginia White	• Found in moist deciduous woodlands or mixed woods, with adults consuming nectar from toothworts (*Dentaria* spp.), spring beauty (*Claytonia* spp.), violets (*Viola* spp.) and other flowering plants.[9] • Caterpillars rely specifically on toothwort species (*Dentaria diphylla* and *D. laciniata*).[9] • Potential breeding habitat for this species may be found in the Project Area and Project Location.	**Y**	**Y**	**Habitat for Species of Conservation Concern (West Virginia White)**

1. Wiggins et al. (2006)
2. OMNR Significant Wildlife Habitat Technical Guide (2000)
3. Ministry of Natural Resources and Forestry (2016b)
4. Heath et al. (2009)
5. Cornell Lab of Ornithology (2015)
6. Ontario Nature (2016b)
7. Ernst and Lovich (2009)
8. eFloras (2008)
9. Butterflies and Moths of North America (2014)
10. Reitsma et al. (2009)
11. Brigham et al. (2011)
12. Altman et al. (2012)
13. McCarty (1996)
14. White et al. (2002)
15. Evans et al. (2011)