



Nation Rise Wind Farm **Natural Heritage Environmental Impact Study Report**

Prepared for:
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NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Nation Rise Wind Farm
Natural Heritage Environmental Impact Study Report

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Significant Woodlands and Wetlands

Significant Seasonal Concentration Areas

Significant Rare Vegetation Communities and Specialized Wildlife Habitats

Significant Habitats for Species of Conservation Concern

Generalized Significant Wildlife Habitats

1.0 Project Description

Natural Resource Solutions Inc. (NRSI) was retained in April 2016 by DNV-GL, 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), and is located in the Township of North Stormont, Ontario. 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.

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 38 of the REA Regulation, O.Reg. 359/09, NRSI has prepared an Environmental Impact Study (EIS) that identifies and assesses negative environmental effects on significant natural features located in and within 120m the Project Location. This includes areas within 120m of proposed turbines, measured from blade tip, as well as 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 the Project Location as the 'Project Area'. See Map 1 for an illustration of the Project Area and natural features.

2.0 REA Requirements

Ontario Regulation 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 Project is classified as a Class 4 wind facility and is required to obtain a REA.

Section 38 of the REA Regulation specifies that no development activities shall be permitted within 120m of a significant natural feature unless an EIS report is prepared in accordance with any procedures established by the Ministry of Natural Resources and Forestry (MNR). As per Subsection 2, this report should:

1. *Identify and assess any negative environmental effects of the project on a natural feature, provincial park or conservation reserve,*
2. *Identify mitigation measures in respect of any negative environmental effects mentioned in the subclause above,*
3. *Describe how the environmental effects monitoring plan...addresses any negative environmental effects mentioned in subclause 1, and*
4. *Describe how the construction plan report...addresses any negative environmental effects mentioned in subclause 1.*

This NHA report has been organized and prepared to satisfy the requirements of the EIS as outlined in the REA Regulation.

Additional information relating to the development of this Project, including detailed descriptions of the construction activities, has been provided in the Draft *Nation Rise Wind Farm Construction Plan Report* (DNV-GL 2017a). This document provides construction details and potential environmental impacts associated with the construction of the Project. Additional information relating to the operation and decommissioning of this Project has been provided in the Draft *Nation Rise Wind Farm Design and Operations Report* (DNV-GL 2017b) and Draft *Nation Rise Wind Farm Decommissioning Plan Report* (DNV-GL 2017c). A summary of the potential environmental effects, proposed mitigation measures, and monitoring programs that will be implemented during the construction and operational phases of the Project is also provided in Table 6-1 of the Draft *Nation Rise Wind Farm Construction Plan Report* (DNV-GL 2017a) and Table 11-1 of the Draft *Nation Rise Wind Farm Design and Operations Report* (DNV-GL 2017b) to satisfy the requirements as outlined in the REA Regulation.

Section 23.1 of the REA Regulation states that “a person who proposes to engage in a renewable energy project in respect of a Class 3, 4 or 5 wind facility shall prepare an environmental effects monitoring plan in respect of birds and bats. O. Reg. 521/10, s. 14.” As per Subsection 2, this Environmental Effects Monitoring Plan (EEMP) should be prepared in accordance with the following MNRF publications:

1. “*Birds and Bird Habitats: Guidelines for Wind Power Projects*” dated October 2010, as amended from time to time and available from the Ministry of Natural Resources.
2. “*Bats and Bat Habitats: Guidelines for Wind Power Projects*” dated March 2010, as amended from time to time and available from the Ministry of Natural Resources.

Updates to the above MNRF publications were made in December 2011 and July 2011, respectively.

A separate Bird and Bat EEMP report will be prepared to satisfy the requirements as outlined in the REA Regulation. The Bird and Bat EEMP will be completed in a manner that fully implements monitoring, methodologies, thresholds and proposed mitigation measures as outlined in the most current guidelines released by the MNRF with respect to Birds and Bats as outlined in Section 23.1 of O. Reg. 359/09 or uses best practices approved by the MNRF for other similar sites. The Bird and Bat EEMP for the Project will be provided to the MNRF for review prior to the submission of an application to the Ministry of the Environment and Climate Change (MOECC) for a REA, and will require approval from the MNRF before a full Project approval is issued.

3.0 Summary of Evaluation of Significance

In accordance with the REA Regulation, NRSI biologists have completed a detailed evaluation of significance of all potentially significant natural features or wildlife habitats within the Project Area. The results of these determinations have been discussed in detail within the *Nation Rise Wind Farm: Natural Heritage Evaluation of Significance Report* (NRSI 2017a), and are summarized in Table 1. This table summary includes the results of the evaluation of significance for the woodlands, wetlands, and significant wildlife habitats (SWHs), including species of conservation concern, and whether each of these features or wildlife habitats require detailed consideration as part of this EIS.

As part of the evaluation of significance (NRSI 2017a), natural features and wildlife habitats were evaluated for significance following the evaluation criteria identified by the MNRF. As outlined in Appendix D of the *NHA Guide for Renewable Energy Projects* (OMNR 2012), where surveys could not be conducted in the appropriate season for the wildlife habitat type, wildlife habitats have been treated as significant with a commitment to conduct pre-construction surveys during the appropriate season to determine significance. Some habitats were also considered to be treated as significant where access to the habitat to conduct site investigation and/or evaluation of significance surveys has been denied.

In addition, as outlined in Appendix D of the *NHA Guide for Renewable Energy Projects* (OMNR 2012), any habitats that are not required to be individually identified and delineated within 50m or 120m of a project component, and which are not overlapped by project infrastructure (excepting where overlap may occur within existing developed public road rights-of-way), have been treated as significant and are discussed in this report as generalized significant wildlife habitat (SWH).

All significant or treated as significant natural features (woodlands and wetlands) are shown on Maps 2-1 to 2-12. The location of SWHs and treated as significant wildlife habitats are shown on Maps 3-1 to 3-12 through 5-1 to 5-12. Generalized SWHs (treated as significant) are shown on Maps 6-1 to 6-12.

Table 1. Summary of Candidate Significant Natural Features and Wildlife Habitats within the Project Area

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
Woodlands			
WOD-001	Yes	Yes	No
WOD-002	Yes	Yes	Yes
WOD-003	Yes	Yes	No
WOD-004	Yes	Yes	Yes
WOD-005	Yes	Yes	Yes
WOD-006	Yes	Yes	Yes
WOD-007	Yes	Yes	Yes
WOD-008	Yes	Yes	No
WOD-009	Yes	Yes	Yes
WOD-010	Yes	Yes	Yes
WOD-011	Yes	Yes	Yes
WOD-012	Yes	Yes	Yes
WOD-013	Yes	Yes	Yes
WOD-014	Yes	Yes	Yes
WOD-015	Yes	Yes	Yes
WOD-016	Yes	Yes	No
WOD-017	Yes	Yes	Yes
WOD-018	Yes	Yes	No
WOD-019	Yes	Yes	No
WOD-020	Yes	Yes	Yes
WOD-021	Yes	Yes	Yes
WOD-022	Yes	Yes	No
WOD-023	Yes	Yes	No
WOD-024	Yes	Yes	No
WOD-025	Yes	Yes	No
WOD-026	Yes	Yes	No
WOD-027	Yes	Yes	No
WOD-028	Yes	Yes	No
WOD-029	Yes	Yes	No
WOD-030	Yes	Yes	No
WOD-031	Yes	Yes	Yes
WOD-032	Yes	Yes	No
WOD-033	Yes	Yes	No
WOD-034	Yes	Yes	No
WOD-035	Yes	Yes	Yes
WOD-036	Yes	Yes	No
WOD-037	Yes	Yes	Yes
WOD-038	Yes	Yes	Yes
WOD-039	Yes	Yes	Yes
WOD-040	Yes	Yes	No
WOD-041	Yes	Yes	No
WOD-042	Yes	Yes	Yes

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
WOD-043	Yes	Yes	Yes
WOD-044	Yes	Yes	Yes
WOD-045	Yes	Yes	No
WOD-046	Yes	Yes	Yes
WOD-047	Yes	Yes	Yes
WOD-048	Yes	Yes	Yes
WOD-049	Yes	Yes	Yes
WOD-050	Yes	Yes	No
WOD-051	Yes	Yes	Yes
WOD-052	Yes	Yes	No
WOD-053	Yes	Yes	Yes
WOD-054	Yes	Yes	Yes
WOD-055	Yes	Yes	Yes
Wetlands			
WET-001	Yes	Yes	Yes (Treated as Significant) ¹
WET-002	Yes	Yes	Yes (Treated as Significant) ¹
WET-003	Yes	Yes	Yes (Treated as Significant) ¹
WET-004	Yes	Yes	Yes (Treated as Significant) ¹
WET-005	Yes	Yes	Yes (Treated as Significant) ¹
WET-006	Yes	Yes	Yes (Treated as Significant) ¹
WET-007	Yes	Yes	Yes (Treated as Significant) ¹
WET-008	Yes	Yes	Yes (Treated as Significant) ¹
WET-009	Yes	Yes	Yes (Treated as Significant) ¹
WET-011	Yes	Yes	Yes (Treated as Significant) ¹
WET-012	Yes	Yes	Yes (Treated as Significant) ¹

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
WET-013	Yes	Yes	Yes (Treated as Significant) ¹
WET-014	Yes	Yes	Yes (Treated as Significant) ¹
WET-015	Yes	Yes	Yes (Treated as Significant) ¹
WET-016	Yes	Yes	Yes (Treated as Significant) ¹
WET-017	Yes	Yes	Yes (Treated as Significant) ¹
WET-018	Yes	Yes	Yes (Treated as Significant) ¹
WET-019	Yes	Yes	Yes (Treated as Significant) ¹
WET-020	Yes	Yes	Yes (Treated as Significant) ¹
Candidate Significant Wildlife Habitats			
WST-001	Yes	Yes	No
WST-002	Yes	Yes	No
WST-004	Yes	Yes	No
WST-005	Yes	Yes	No
WST-006	Yes	Yes	No
WST-007	Yes	Yes	No
WST-010	Yes	Yes	No
WST-011	Yes	Yes	No
WST-012	Yes	Yes	No
WST-013	Yes	Yes	No
WST-015	Yes	Yes	No
WST-016	Yes	Yes	No
WST-017	Yes	Yes	No
WST-018	Yes	Yes	No
WST-020	Yes	Yes	No
WST-021	Yes	Yes	No
WST-023	Yes	Yes	No
WST-024	Yes	Yes	No
WST-026	Yes	Yes	No
WST-027	Yes	Yes	No
WST-028	Yes	Yes	No
WST-029	Yes	Yes	No

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
WST-030	Yes	Yes	No
WST-031	Yes	Yes	No
WST-032	Yes	Yes	No
WST-033	Yes	Yes	No
WST-034	Yes	Yes	No
WST-035	Yes	Yes	No
WST-036	Yes	Yes	No
WSA-001	Yes	Yes	Yes
RWA-001	Yes	Yes	No
RWA-002	Yes	Yes	No
BMA-001	Yes	Yes	Yes (Treated as Significant)²
BMA-002	Yes	Yes	Yes (Treated as Significant)³
BMA-003	Yes	Yes	Yes (Treated as Significant)²
TWA-001	Yes	Yes	Yes (Treated as Significant)²
SNH-001	Yes	Yes	No
SNH-002	Yes	Yes	No
SNH-003	Yes	Yes	No
SNH-005	Yes	Yes	No
SNH-006	Yes	Yes	Yes (Treated as Significant)³
SNH-007	Yes	Yes	No
SNH-008	Yes	Yes	No
SNH-009	Yes	Yes	No
SNH-010	Yes	Yes	No
SNH-011	Yes	Yes	No
SNH-012	Yes	Yes	No
ALV-001	Yes	Yes	Yes (Treated as Significant)²
ALV-002	Yes	Yes	Yes (Treated as Significant)²
OGF-001	Yes	Yes	Yes (Treated as Significant)⁴
SAV-001	Yes	Yes	Yes (Treated as Significant)²

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
TGP-001	Yes	Yes	Yes (Treated as Significant) ²
TGP-002	Yes	Yes	Yes (Treated as Significant) ²
AWO-001	Yes	Yes	Yes (Treated as Significant) ²
AWO-002	Yes	Yes	Yes (Treated as Significant) ⁵
AWO-003	Yes	Yes	Yes (Treated as Significant) ⁵
AWO-004	Yes	Yes	Yes (Treated as Significant) ²
AWO-005	Yes	Yes	Yes (Treated as Significant) ⁵
AWO-006	Yes	Yes	Yes (Treated as Significant) ²
AWO-007	Yes	Yes	Yes (Treated as Significant) ²
AWO-008	Yes	Yes	Yes (Treated as Significant) ²
AWO-009	Yes	Yes	Yes (Treated as Significant) ⁵
AWO-010	Yes	Yes	Yes (Treated as Significant) ²
AWO-011	Yes	Yes	Yes (Treated as Significant) ²
AWO-012	Yes	Yes	Yes (Treated as Significant) ²
AWO-013	Yes	Yes	Yes (Treated as Significant) ²
AWO-014	Yes	Yes	Yes (Treated as Significant) ²

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
AWO-015	Yes	Yes	Yes (Treated as Significant) ²
AWO-016	Yes	Yes	Yes (Treated as Significant) ²
AWO-017	Yes	Yes	Yes (Treated as Significant) ²
AWO-018	Yes	Yes	Yes
AWO-019	Yes	Yes	Yes (Treated as Significant) ²
AWO-020	Yes	Yes	Yes (Treated as Significant) ²
AWO-021	Yes	Yes	Yes (Treated as Significant) ⁵
AWO-022	Yes	Yes	Yes (Treated as Significant) ²
AWO-023	Yes	Yes	Yes (Treated as Significant) ²
AWO-024	Yes	Yes	Yes (Treated as Significant) ²
OCB-001	Yes	Yes	Yes (Treated as Significant) ²
CONI-001	Yes	Yes	Yes (Treated as Significant) ²
CONI-002	Yes	Yes	Yes (Treated as Significant) ²
CONI-003	Yes	Yes	Yes (Treated as Significant) ²
CONI-004	Yes	Yes	Yes (Treated as Significant) ²
CONI-005	Yes	Yes	Yes (Treated as Significant) ²
CONI-006	Yes	Yes	Yes (Treated as Significant) ²

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
CONI-007	Yes	Yes	Yes (Treated as Significant) ²
CONI-008	Yes	Yes	Yes (Treated as Significant) ²
CONI-009	Yes	Yes	Yes (Treated as Significant) ²
EAWP-001	Yes	Yes	Yes (Treated as Significant) ²
EAWP-002	Yes	Yes	Yes (Treated as Significant) ²
EAWP-003	Yes	Yes	Yes (Treated as Significant) ²
EAWP-004	Yes	Yes	Yes (Treated as Significant) ²
EAWP-005	Yes	Yes	Yes (Treated as Significant) ²
EAWP-006	Yes	Yes	Yes (Treated as Significant) ²
EAWP-007	Yes	Yes	Yes (Treated as Significant) ²
EAWP-008	Yes	Yes	Yes (Treated as Significant) ²
EAWP-009	Yes	Yes	Yes (Treated as Significant) ²
EAWP-010	Yes	Yes	Yes (Treated as Significant) ²
EAWP-011	Yes	Yes	Yes (Treated as Significant) ²
EAWP-012	Yes	Yes	Yes (Treated as Significant) ³
EAWP-013	Yes	Yes	Yes (Treated as Significant) ²

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
EAWP-014	Yes	Yes	Yes (Treated as Significant) ²
EAWP-015	Yes	Yes	Yes (Treated as Significant) ²
EAWP-016	Yes	Yes	Yes (Treated as Significant) ²
EAWP-017	Yes	Yes	Yes (Treated as Significant) ²
EAWP-018	Yes	Yes	Yes (Treated as Significant) ²
WOTH-001	Yes	Yes	Yes (Treated as Significant) ²
WOTH-002	Yes	Yes	Yes (Treated as Significant) ²
WOTH-003	Yes	Yes	Yes (Treated as Significant) ³
WOTH-004	Yes	Yes	Yes (Treated as Significant) ²
WOTH-005	Yes	Yes	Yes (Treated as Significant) ²
MUWE-001	Yes	Yes	Yes (Treated as Significant) ²
MUWE-002	Yes	Yes	Yes (Treated as Significant) ²
MUWE-003	Yes	Yes	Yes (Treated as Significant) ²
MUWE-004	Yes	Yes	Yes (Treated as Significant) ²
MUWE-005	Yes	Yes	Yes (Treated as Significant) ²
MUWE-006	Yes	Yes	Yes (Treated as Significant) ⁵

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
MUWE-007	Yes	Yes	Yes (Treated as Significant) ²
MUWE-008	Yes	Yes	Yes (Treated as Significant) ⁵
MUWE-009	Yes	Yes	Yes (Treated as Significant) ²
MUWE-010	Yes	Yes	Yes (Treated as Significant) ²
MONA-001	Yes	Yes	Yes (Treated as Significant) ²
MONA-002	Yes	Yes	Yes (Treated as Significant) ²
MONA-003	Yes	Yes	Yes (Treated as Significant) ²
MONA-004	Yes	Yes	Yes (Treated as Significant) ²
MONA-005	Yes	Yes	Yes (Treated as Significant) ²
MONA-006	Yes	Yes	Yes (Treated as Significant) ²
Generalized Significant Wildlife Habitats			
Waterfowl Stopover and Staging Areas (Terrestrial)	Yes	No	Yes (Treated as Significant)
Raptor Wintering Area	Yes	No	
Bat Maternity Colonies	Yes	No	
Reptile Hibernaculum	Yes	No	
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Yes	No	
Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs)	Yes	No	
Alvar	Yes	No	
Other Rare Vegetation Community Types	Yes	No	
Woodland Raptor Nesting Habitat	Yes	No	

Feature ID	Feature Within 120m of Project Location (Y/N)	Individually Delineated Feature Within 120m of the Project Location (Y/N)*	Significant/EIS Required (Y/N)
Seeps and Springs	Yes	No	
Amphibian Breeding Habitat (Woodland)	Yes	No	
Woodland Area-sensitive Bird Breeding Habitat	Yes	No	
Shrub/Early Successional Bird Breeding Habitat	Yes	No	
Common Nighthawk	Yes	No	
Eastern Wood-Pewee	Yes	No	
Wood Thrush	Yes	No	
Eastern Musk Turtle	Yes	No	
Mühlenberg's Weissia	Yes	No	
Monarch	Yes	No	
West Virginia White	Yes	No	

*As per Appendix D of the NHA Guide for Renewable Energy Projects (OMNR 2012).

Superscripts:

- 1: This feature has been treated as significant, as per Appendix C of the NHA Guide (OMNR 2012).
- 2: This habitat has been treated as significant with a commitment to conduct pre-construction surveys.
- 3: This habitat has been treated as significant with no commitment to conduct pre-construction surveys, due to denied site access to the habitat.
- 4: This feature has been treated as significant based on the mature age of this eco-element and the lack of non-native species that would be indicative of disturbance. In order to refrain from coring trees to determine their exact age, this eco-element has been assumed to be old-growth forest. No further surveys are required at this habitat.
- 5: This habitat is located greater than 30m from the Project Location with more potentially impactful existing activities (i.e. agricultural activities, residential properties, and/or Municipal roads) located between the habitat and the Project Location. As such, this habitat will be treated as significant since potential negative effects are negligible relative to existing activities that located considerably closer to the habitat than the Project Location. No further surveys are required at this habitat.

4.0 Description of the Proposed Undertaking

In accordance with the REA Regulation, the presence of significant natural features within the Project Area has been reviewed by NRSI biologists. Based on natural features, vegetation communities, and wildlife habitats present within the Project Area and summarized in the previous section, NRSI biologists have examined the potential for this Project, and associated activities, to impact the surrounding features. NRSI biologists have completed a detailed records review, site investigation, and evaluation of significance of all potentially significant natural features and wildlife habitats within the Project Area in accordance with the *NHA Guide for Renewable Energy Projects* (OMNR 2012), *SWH Technical Guide* (OMNR 2000), and the *SWH Criteria Schedules for Ecoregion 6E* (MNRF 2015). NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the Project Area which require detailed consideration in this EIS. All impacts and associated mitigation measures, monitoring and contingency measures relating to water bodies have been included under separate cover in the *Nation Rise Wind Farm: Water Body Report* (NRSI 2017b).

The specific environmental impacts relating to the natural features and wildlife habitats are discussed in detail within the following sections. All identified impacts are discussed in this section assuming no mitigation measures are applied, and therefore are described in a conservative context relative to potential impacts to natural features and wildlife habitats. Recommendations to mitigate identified impacts as well as monitoring of effectiveness of these proposed mitigation measures are discussed in Sections 5.0 and 6.0.

A total of 34 proposed wind turbine locations will be permitted for the Project. The construction phase of the Project will involve the installation of up to 34 of the permitted wind turbine locations, as well as all supporting infrastructure.

The Project will be made up of the following main components:

- Wind turbine generators;
- Meteorological towers;
- Access roads and crane pads;
- Electrical collector lines, substation and switchyard; and

- Construction staging and laydown areas (including temporary staging areas).

The details of these construction activities and potential negative effects that may be associated with each activity are outlined in Table 2.

The operational phase of the Project will include the operation of up to 34 wind turbines, as well as all associated regular maintenance activities. The potential negative effects of this facility during the operational phase of the Project are summarized in Table 2.

The decommissioning phase of the Project will include the disassembly and removal of the Project infrastructure associated with this Project. The details of this project phase, along with potential negative effects, are provided in Table 2.

Table 2. Summary of Construction, Operation, and Decommissioning Activities and Potential Negative Environmental Effects Within the Project Area

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
Construction				
Ancillary Facility Construction	<p>Two types of supporting facilities may be associated with the Project. These include a substation and up to 3 meteorological towers.</p> <p>The power generated at each of the wind turbines will be transported through 34.5kV underground or overhead cables to the Project's substation. After the power is transformed to a transmission voltage (230 kV) at the substation, power will be fed into the existing Hydro One Network Inc. (HONI) transmission system adjacent to the Project substation. An access road to the substation will be required and will be designed and constructed as described in this table.</p> <p>Of the 7 meteorological towers permitted for the Project, up to 3 will be constructed. Access roads to the towers will also be required and will be designed and constructed as described in this table.</p>	N/A	<ul style="list-style-type: none"> • Bat Maternity Colonies • Amphibian Breeding Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Reduced flood attenuation • Reduced water quality (i.e. increased turbidity) • Noise disturbance/avoidance behaviour • Erosion and sedimentation • Fugitive dust emission • Spills and leaks (i.e. oil, gasoline, grease, etc.) • Changes in soil moisture
Turbine Foundation and Turbine Erection	<p>A total of 34 proposed turbine locations will be permitted for the Project. The total number of turbines will depend on the nominal turbine power rating of each turbine.</p> <p>As part of the turbine erection, laydown areas and crane pads will be placed around the base of the turbine.</p> <p>The crane pads, measuring approximately</p>	N/A	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Old Growth Forest • Amphibian Breeding Habitats 	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Temporary noise, and potential avoidance or disturbance of wildlife species • Accidental vegetation removal • Fugitive dust emission • Reduced flood attenuation • Reduced infiltration

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>0.2ha, will require the removal of topsoil and crane pad locations will be filled with clean compacted crushed gravel, which will be imported as needed.</p> <p>Following the erection of wind turbines, the portions of the crane pad areas not required during the operations phase will be restored to a state similar to pre-existing conditions.</p> <p>It is possible that during excavation for turbine foundations, groundwater or precipitation entering the excavation will require pumping.</p> <p>Blasting of bedrock for installation of the foundation for turbine T4 is possible. As the blast excavation for the turbine foundation will be up to a maximum of 30m in diameter, this activity will not occur within 30m of any natural feature, including significant wildlife habitats.</p> <p>Relatively minor grading activities are expected to occur throughout the Project Area. Grading is important to ensure crane pads, staging areas, and other construction areas are level.</p>		<p>(Woodland)</p> <ul style="list-style-type: none"> • Open Country Bird Breeding Habitat • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	<ul style="list-style-type: none"> • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Increased erosion, sedimentation, and turbidity • Changes in soil moisture and compaction • Increased vegetation species competition through introduction of invasive vegetation species <p>If dewatering of excavated wind turbine foundations is required:</p> <ul style="list-style-type: none"> • Reduced groundwater discharge • Reduced stream baseflows and upwelling • Increased water temperatures • Reduced water quality (i.e. increased turbidity) • Increased water quantity to receiving features <p>If blasting for excavation of turbine foundation is required:</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission
Access Road Construction	Access roads will be constructed to be up to 20m wide. Areas adjacent to the access road within the larger construction disturbance area may be utilized during the construction phase in order to accommodate cranes, transportation equipment and other construction activities. After construction, these roads may be reduced in size to	<ul style="list-style-type: none"> • Alvar • Bird Species of Conservation Concern Habitats • Vegetation Species of 	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Reptile Hibernacula • Alvar 	<ul style="list-style-type: none"> • Accidental vegetation removal • Reduced infiltration • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>approximately 5-6m in width, to allow access to turbines and associated infrastructure for maintenance and repairs.</p> <p>Relatively minor grading activities are expected to occur throughout the Project Area. Grading is important to ensure crane pads, staging areas, and other construction areas are level.</p>	<ul style="list-style-type: none"> Conservation Concern Habitats Butterfly Species of Conservation Concern Habitats 	<ul style="list-style-type: none"> Old Growth Forest Tallgrass Prairie Amphibian Breeding Habitats (Woodland) Open Country Bird Breeding Habitat Bird Species of Conservation Concern Habitats Vegetation Species of Conservation Concern Habitats Butterfly Species of Conservation Concern Habitats Generalized Significant Wildlife Habitats 	<ul style="list-style-type: none"> Changes in surface water drainage Changes in soil moisture and compaction Increase in impervious surfaces and increased surface run-off Loss of wildlife habitat Barriers to wildlife movement Increased wildlife mortality due to vehicle collisions Disturbance of wildlife species Increased vegetation species competition through introduction of invasive vegetation species
<p>Electrical Collector Line Installation (Overhead or Underground)</p>	<p>Underground and overhead electrical collector lines are proposed for this Project.</p> <p>The power generated at each of the wind turbines will be transported through 34.5kV</p>	<ul style="list-style-type: none"> Woodlands Waterfowl Stopover and Staging Area (Aquatic) 	<ul style="list-style-type: none"> Woodlands Wetlands Bat Maternity Colonies Reptile 	<ul style="list-style-type: none"> Accidental vegetation removal Increased erosion, sedimentation, and turbidity Fugitive dust emission Changes in soil moisture and compaction

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>underground or overhead cables to the Project's substation. Electrical collector lines will generally follow public road allowances to reach the Project substation. Junction boxes will also be installed below or above ground in instances where more than one circuit must be connected together. Most of the underground cabling system will be buried at a depth of approximately 1 to 1.5m by way of open cut trenches or plowing.</p> <p>Horizontal directional drilling will also be required within the Project. Directional drilling will be used in some locations to extend electrical collector lines beneath natural features, wildlife habitats, or water bodies without direct impact. Although the exact locations of directional drilling are currently unknown, impacts associated with this construction activity have been considered as part of this EIS.</p> <p>Trenching, sawing, or hammering of bedrock for installation of underground collection line is possible, particularly in areas where bedrock is within 2m of the surface. This is specific to 6 areas, including:</p> <ol style="list-style-type: none"> 1) cabling between T2 and T4 (including along Concession Road 11/12); 2) cabling between T4 and T5 (including along Concession Road 11/12); 3) cabling between T4 and T7 (including along Concession Road 10/11); 4) cabling between T25 and T32 (including along County Road 9); 5) cabling between T27 and T28 (including 	<ul style="list-style-type: none"> • Bat Maternity Colonies • Turtle Wintering Area • Reptile Hibernacula • Alvar • Savannah • Tallgrass Prairie • Amphibian Breeding Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats 	<ul style="list-style-type: none"> Hibernacula • Old Growth Forest • Savannah • Tallgrass Prairie • Amphibian Breeding Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	<ul style="list-style-type: none"> • Disturbance of wildlife species • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features • 'Frac-out' (the escape of drilling mud and/or fluids into the environment as a result of a spill, drilling tunnel collapse or rupture of mud to the surface due to excessive pressure from an obstruction within the borehole) into significant natural features and/or wildlife habitats where directional drilling is proposed • Reduced water quality (i.e. increased turbidity) • Reduced infiltration • Reduced groundwater discharge • Increased vegetation species competition through introduction of invasive vegetation species • Removal of vegetation within the existing public road allowance <p>If dewatering of excavated trenches for underground electrical collector lines is required:</p> <ul style="list-style-type: none"> • Reduced groundwater discharge • Reduced stream baseflows and upwelling • Increased water temperatures • Reduced water quality (i.e. increased turbidity) • Increased water quantity to receiving area or water body

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>along County Road 12 and Concession Road 6/7); and 6) cabling between T47 and T48 (including along County Road 43).</p> <p>Construction constraints or municipal recommendations for public road allowances may require the electrical collector lines be installed in conduits or overhead on wooden or steel poles similar to the distribution lines in the area. Overhead electrical collector lines may be used in some locations to extend electrical collector lines above natural features and wildlife habitats without direct impact. Although the exact locations of overhead electrical collector lines are currently unknown, the potential impacts associated with both underground and overhead electrical collector lines have been considered throughout this EIS.</p> <p>Where possible, underground and overhead electrical collector lines will be installed within the access road construction disturbance area and/or will follow public road allowances in order to minimize the area of disturbed land.</p> <p>Vegetation removal may occur within woodlands where they occur within the public road allowance. Vegetation removal will be required in order to facilitate installation of overhead electrical collector lines. Vegetation removal will be limited to the extents of the public road allowance.</p>			

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
<p>Temporary Construction Staging Areas and Laydown Areas</p>	<p>Up to 3 temporary construction staging areas will be located within the Project Area and will be approximately 5-7ha in size each.</p> <p>In addition, a temporary area of approximately 3ha around each wind turbine will be constructed for the laydown and assembly of wind turbine components.</p> <p>Topsoil will be stripped, stockpiled, and reused to the extent possible for site landscaping and reclamation. Gravel will be laid and compacted. The depth of the gravelled areas will vary and will be dependent on conditions encountered during the time of construction.</p> <p>Following construction, the temporary construction staging and laydown areas will be restored to pre-existing conditions to allow agricultural or prior activities to resume, at the discretion of landowners.</p>	<p>N/A</p>	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Amphibian Breeding Habitats (Woodland) • Open Country Bird Breeding Habitat • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Old Growth Forest • Generalized Significant Wildlife Habitats 	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Reduced flood attenuation • Reduced water quality (i.e. increased turbidity) • Noise disturbance/avoidance behaviour • Erosion and sedimentation • Fugitive dust emission • Spills and leaks (i.e. oil, gasoline, grease, etc.) • Changes in soil moisture • Soil compaction
Operation				
<p>Turbine Operation</p>	<p>A total of 34 proposed turbine locations will be permitted for the Project. The total</p>	<p>N/A</p>	<ul style="list-style-type: none"> • Woodlands • Wetlands 	<ul style="list-style-type: none"> • Disturbance to wildlife species • Direct wildlife (avian and bat) mortality

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	number of turbines will depend on the nominal turbine power rating of each turbine.		<ul style="list-style-type: none"> • Bat Maternity Colonies • Old Growth Forest • Amphibian Breeding Habitats (Woodland) • Open Country Bird Breeding Habitat • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	due to collisions with turbines
Turbine Maintenance	<p>Regular maintenance activities will occur at all of the operational turbines at the Project.</p> <p>In addition to regularly scheduled maintenance, occasional unscheduled</p>	N/A	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Old Growth 	<ul style="list-style-type: none"> • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance to wildlife species • Increased wildlife mortality due to vehicle collisions

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	maintenance activities may be required.		Forest <ul style="list-style-type: none"> • Amphibian Breeding Habitats (Woodland) • Open Country Bird Breeding Habitat • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	
Vegetation Maintenance Along Overhead Electrical Collector Lines	Routine vegetation removal, including tree removal or pruning, may be required for clearance of the electrical collector lines during operations. This may include tree removal or pruning within significant woodlands.	<ul style="list-style-type: none"> • Woodlands • Waterfowl Stopover and Staging Area (Aquatic) • Bat Maternity Colonies • Turtle 	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Reptile Hibernacula • Old Growth Forest 	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Noise disturbance/avoidance behaviour • Soil compaction

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
		Wintering Area <ul style="list-style-type: none"> • Reptile Hibernacula • Savannah • Tallgrass Prairie • Alvar • Amphibian Breeding Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats 	<ul style="list-style-type: none"> • Savannah • Tallgrass Prairie • Amphibian Breeding Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	
Decommissioning				
Removal of Ancillary Facilities	Two types of supporting facilities may be associated with the Project. These include a substation, which may include a control building, and up to 3 meteorological towers (7 meteorological towers will be permitted). The substation, which may include a control building, as well as all associated above-	N/A	<ul style="list-style-type: none"> • Woodlands • Bat Maternity Colony • Amphibian Breeding Habitat (Woodland) • Bird Species 	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Reduced flood attenuation • Reduced water quality (i.e. increased turbidity) • Noise disturbance/avoidance behaviour • Erosion and sedimentation • Fugitive dust emission

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>ground infrastructure, will be dismantled and removed from the Project Area. Any concrete foundations will be removed to at least 1m below original grade or to the depth originally installed if less than 1m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p> <p>Up to 3 meteorological tower will be built during construction and will be removed unless otherwise requested by the Township of North Stormont or local aviation groups (and agreed to by the Proponent and the property owner) for it to remain in place. Any concrete foundations would be removed to at least 1m below original grade or to the depth originally installed if less than 1m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p>		<ul style="list-style-type: none"> • of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	<ul style="list-style-type: none"> • Changes in soil moisture • Spills and leaks (i.e. oil, gasoline, grease, etc.)
Removal of Turbine Infrastructure	<p>Up to 34 wind turbines will be constructed for the Project. All constructed turbines will be removed as per the decommissioning plan.</p> <p>A crane pad and wind turbine laydown area will be constructed at each turbine location to accommodate the dismantling of the wind turbines.</p> <p>Following the removal of turbines, crane</p>	N/A	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Old Growth Forest • Amphibian Breeding Habitats (Woodland) 	<ul style="list-style-type: none"> • Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Changes in surface water drainage • Disturbance of wildlife species • Increased vegetation species competition

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>pads will be removed and the land will be restored to land use similar to what was present prior to turbine installation, to allow for agricultural activities or prior activities to resume.</p> <p>Removal of turbine components will also include the removal of 1m of the underground foundation below the original elevation (prior to construction). Excavated foundation areas will be backfilled with clean fill and stockpiled topsoil to match the original elevation, and the area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p>		<ul style="list-style-type: none"> • Open Country Bird Breeding Habitat • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	<p>through introduction of invasive vegetation species</p> <p>If dewatering of excavated wind turbine foundations is required:</p> <ul style="list-style-type: none"> • Reduced groundwater discharge • Reduced stream baseflows and upwelling • Increased water temperatures • Reduced water quality (i.e. increased turbidity) • Increased water quantity to receiving area or water body
Removal of Access Roads	<p>Access road removal will be dependent on the requirements and agreements in place with the individual landowner.</p> <p>Impacted lands will be restored to land use prior to access road construction, at the discretion of landowners.</p>	<ul style="list-style-type: none"> • Alvar • Tallgrass Prairie • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly 	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Reptile Hibernacula • Alvar • Old Growth Forest • Amphibian Breeding Habitats (Woodland) 	<ul style="list-style-type: none"> • Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Changes in surface water drainage • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species • Increased vegetation species competition through introduction of invasive vegetation species

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
		Species of Conservation Concern Habitats	<ul style="list-style-type: none"> • Open Country Bird Breeding Habitat • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	
Removal of Electrical Collector Lines (Overhead or Underground)	<p>Underground and overhead electrical collector lines are proposed for this Project.</p> <p>Underground electrical collector lines are expected to remain in place at the end of the Project life; however, at their connection points in the substation or in junction boxes, where the underground electrical collector lines come to the surface, the electrical collector lines will be cut to a depth of approximately 1m below original grade.</p> <p>Overhead electrical collector lines are</p>	<ul style="list-style-type: none"> • Woodlands • Waterfowl Stopover and Staging Area (Aquatic) • Bat Maternity Colonies • Turtle Wintering Area • Reptile Hibernacula • Alvar • Savannah 	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Reptile Hibernacula • Old Growth Forest • Savannah • Tallgrass Prairies • Amphibian Breeding 	<ul style="list-style-type: none"> • Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species • Increased vegetation species competition through introduction of invasive vegetation species • Removal of vegetation within the existing public road allowance

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>expected to be removed at the end of the Project life; however, the poles on which the collector lines will be installed that are not shared with HONI will be cut to a depth of approximately 1m below original grade or may be completely removed from the ground, where feasible.</p> <p>Any electrical collector lines located at directionally drilled watercourse crossings or underneath significant natural features and wildlife habitats will also remain in place; however, the connection point will be severed at a point located outside of the South Nation Conservation Authority (SNCA) Regulation Area, where possible, and outside of significant natural features and/or wildlife habitats.</p> <p>The Proponent is responsible for decommissioning of the electrical connector line from the substation, after which point the infrastructure is owned by HONI.</p>	<ul style="list-style-type: none"> • Tallgrass Prairie • Amphibian Breeding Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats 	<ul style="list-style-type: none"> • Habitats (Woodland) • Bird Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Vegetation Species of Conservation Concern Habitats • Generalized Significant Wildlife Habitats 	
Removal of Staging Area	<p>Upon decommissioning of the Project, temporary staging and laydown areas will be constructed and appropriate decommissioning activities will be carried out within these designated areas.</p> <p>After completion of the decommissioning, temporary staging areas and any associated temporary decommissioning improvements (e.g., temporary construction trailer) used during the decommissioning phase will be removed. Any foundations associated with these facilities will be removed to a depth of</p>	N/A	<ul style="list-style-type: none"> • Woodlands • Wetlands • Bat Maternity Colonies • Amphibian Breeding Habitats (Woodland) • Open Country Bird Breeding Habitat • Bird Species 	<ul style="list-style-type: none"> • Accidental damage to habitat • Reduced flood attenuation • Reduced water quality (i.e. increased turbidity) • Noise disturbance/avoidance behaviour • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, etc.) • Changes in soil moisture • Soil compaction

Project Activity	Extent of Effect	Significant Feature(s) Overlapping Project Activity	Significant Feature(s) within 120m of Project Activity	Potential Negative Effects to Significant Feature or Habitat
	<p>at least 1m below original grade or to the depth originally installed if less than 1m below original grade. The area will be graded, contoured, and restored to land use similar to what was present prior to foundation installation, to allow for prior activities to resume.</p>		<p>of Conservation Concern Habitats</p> <ul style="list-style-type: none"> • Vegetation Species of Conservation Concern Habitats • Butterfly Species of Conservation Concern Habitats • Old Growth Forest • Generalized Significant Wildlife Habitats 	

4.1 Approach to Impact Assessment

For the purposes of this report, the analysis of potential impacts has been divided into the different classifications of significant natural features, consistent with the summary of evaluation of significance section of this report, with SWH further subdivided based on the distance to Project Location, type of wildlife habitat, and methods of determining significance, as follows:

- Significant Woodlands and Wetlands
- SWH
 - Project Location in and within 120m Confirmed SWH
 - Project Location in and within 120m SWH Treated as Significant
 - Generalized Impacts to Wildlife Habitat

Potential impacts to each of the significant features or wildlife habitats within the Project Area are discussed collectively based on their respective distance to the closest Project Location. Although grouped by closest distance to Project Location, all potential impacts of the proposed development in and within 120m each feature are encompassed within the tables. Given the potential impacts at various distances to the Project Location, NRSI has grouped the natural features or wildlife habitats that are in and within 120m the Project Location where an operational impact may occur into 3 more specific distance categories from the Project Location, as follows:

- Overlapping the Project Location
- 0.1m to 30m from the Project Location
- >30m to 120m from the Project Location

These distance categories have been chosen as they each have the potential for different types of impacts on wildlife habitats and natural features. Although there is an expected gradual increase in potential impacts as development occurs closer to natural features or wildlife habitats, a distance of 30m has been chosen as a conservative division where the potential for impact substantially decreases with certain types of potential impacts. For example, areas where the Project Location is within 30m of a natural feature or SWH, there is increased potential for erosion and sedimentation, visual and noise disturbance to wildlife, impacts from accidental spills, and other localized impacts, if not properly mitigated. The impacts within each of these distance categories are expected to be relatively consistent within the given distance.

For certain features including woodlands, wetlands, amphibian breeding habitats (woodland) and old-growth forest habitats located greater than 30m from the Project Location, there are no anticipated potential negative effects from the construction, decommissioning or operational phases of the Project. As there are no anticipated impacts, these habitat types located more than 30m from Project activities have been treated as significant and have been determined not to require specific evaluation of significance surveys since potential negative effects to these habitats have been mitigated by siting the Project Location greater than 30m from their location.

5.0 Environmental Impact Study

In accordance with the REA Regulation, *NHA Guide for Renewable Energy Projects* (OMNR 2012) and the *SWH Criteria Schedules for Ecoregion 6E* (MNRF 2015), NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the Project Area. Each of these significant natural features are discussed in more detail below, including potential impacts and recommended mitigation measures.

This report identifies potential environmental effects of the Project, proposed mitigation measures, and details the monitoring programs that will be implemented during the various phases of the Project. A summary of the potential environmental effects, proposed mitigation measures, and monitoring programs that will be implemented during the construction and operational phases of the Project is also provided in Table 6-1 of the Draft *Nation Rise Wind Farm Construction Plan Report* (DNV-GL 2017a) and Table 11-1 of the Draft *Nation Rise Wind Farm Design and Operations Report* (DNV-GL 2017b).

Additional consideration will be given to mitigation measures and monitoring programs for this Project in the Bird and Bat EEMP, which will be prepared under a separate cover.

5.1 Significant Woodlands and Wetlands

NRSI biologists have identified several significant woodlands and wetlands within the Project Area. Each of these natural features is addressed in Table 3, including the identification of potential negative impacts and recommended mitigation measures based on the general distances that they are found from the Project Location. As described above, for the purposes of the impact assessment and recommended mitigation measures, the general distance categories have been established as overlapping, 0.1m to 30m, and from 30m to 120m to the Project Location.

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 3 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site

Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operational phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

Table 3. Potential Negative Effects and Mitigation Measures for Significant Woodlands and Wetlands within the Project Area

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
Woodlands			
Overlapping: Direct Impact (i.e. vegetation removal limited to within the public road allowance)	WOD-005 WOD-009 WOD-014 WOD-020 WOD-021 WOD-031 WOD-038 WOD-044 WOD-046 WOD-047 WOD-048 WOD-053 WOD-054	<ul style="list-style-type: none"> • Vegetation removal (limited to public road allowance) • Accidental damage or removal of vegetation (in areas adjacent to where vegetation removal is proposed) • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases • Changes in soil moisture • Soil compaction <p>If blasting for excavation of T4 turbine foundation is required (blasting will not occur within 30m of significant woodlands):</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission from blasting (WOD-009) 	<ul style="list-style-type: none"> • Implement Proper Arboricultural Techniques^{1,2} • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Posting of On-site Speed Limits^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Fugitive Dust and Debris Emission from Blasting³ • Minimization of Spills^{1,2} • Minimization of Impacts to Soil Moisture¹ • Minimization of Soil Compaction¹
0.1m - 30m	WOD-002 WOD-006 WOD-007* WOD-012 WOD-017 WOD-042 WOD-043* WOD-049* WOD-051 WOD-055	<ul style="list-style-type: none"> • Accidental damage or removal of vegetation (the Project Location is sited outside of and/or underneath of woodlands - vegetation damage or removal is not anticipated) • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases • Changes in soil moisture 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Posting of On-site Speed Limits^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Spills^{1,2} • Minimization of Impacts to Soil Moisture¹
>30m - 120m	WOD-004 WOD-010 WOD-011	No identified potential negative effects	None applicable

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
	WOD-013 WOD-015 WOD-035 WOD-037 WOD-039		
Wetlands			
Overlapping	N/A	N/A	N/A
0.1m - 30m	WET-001 WET-002 WET-003* WET-004* WET-008 WET-009* WET-011* WET-013 WET-016* WET-017* WET-018* WET-019* WET-020*	<ul style="list-style-type: none"> • Reduced flood attenuation • Reduced water quality (i.e. increased turbidity) • Reduced infiltration • Reduced groundwater discharge • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases • Changes in soil moisture <p>If blasting for excavation of T4 turbine foundation is required (blasting will not occur within 30m of significant wetlands):</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission from blasting (WET-004) 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Minimization of Impacts to Flood Attenuation¹ • Minimization of Impacts to Water Quality¹ • Minimization of Impacts to Infiltration¹ • Minimization of Impacts to Groundwater Discharge¹ • Herbicide Avoidance^{1,2} • Posting of On-site Speed Limits^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Fugitive Dust and Debris Emission from Blasting³ • Minimization of Spills^{1,2} • Minimization of Impacts to Soil Moisture¹
>30m - 120m	WET-005 WET-006 WET-007 WET-012 WET-014 WET-015	No identified potential negative effects	None applicable

¹ Mitigation measure is applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

² Mitigation measure is applicable during the operational phase of the Project; please refer to Table 9 for more details.

³ Mitigation measure is applicable during the construction phase of the Project; please refer to Table 8 for more details.

*Mapping depicts this feature as being overlapped by the Project Location; however, all project components, including the construction disturbance area, will be located adjacent to the feature (>0.1m), or collector lines may be installed beneath the feature via directional drilling.

5.2 Significant Wildlife Habitat

The evaluation of significance completed by NRSI biologists has determined the presence of 95 SWHs within the Project Area (NRSI 2017a). Two (2) of these wildlife habitats have been confirmed as SWH, and the remaining 93 have been treated as significant. Seventy-eight (81) of the 90 SWHs have been treated as significant with a

commitment to conduct seasonal surveys to update the significant designation prior to the construction phase of the Project. Four (4) of the remaining SWHs have been treated as significant as access to the habitat to conduct site investigation and/or evaluation of significance surveys has been denied; seven (7) of the remaining SWHs have been treated as significant with no recommendation to conduct additional studies, as the habitat is located greater than 30m from the Project Location with more potentially impactful existing activities (i.e. agricultural activities, residential properties, and/or Municipal roads) located between the habitat and the Project Location. As such, any potential negative effects that may result from Project activities will be negligible relative to existing activities that are located considerably closer to the habitat than the Project Location. One (1) of the remaining SWHs has been treated as significant in order to refrain from coring trees to determine their exact age, and as a result the habitat has been assumed to be SWH, with no further surveys required.

In accordance with the REA Regulation, any feature that is determined to be overlapping a Project component or within 50m or 120m of a Project component that is required to be individually identified and delineated, as per Appendix D of the NHA Guide (OMNR 2012), has been specifically addressed below. Other wildlife habitats, treated as significant, that are present within 50m or 120m of (but not overlapping) Project components that are not required to be individually identified and delineated, as per Appendix D of the NHA Guide (OMNR 2012), have been collectively mapped as generalized significant wildlife habitat and are addressed as part of the generalized mitigation measures. As described above, for the purposes of impact assessment and recommended mitigation measures, the distance categories have been established as overlapping, 0.1m to 30m, and greater than 30m to 120m from the Project Location. These measurements coincide with the distance from a SWH to the closest Project component.

5.2.1 Project Location within 120m Confirmed Significant Wildlife Habitat

NRSI biologists have identified two confirmed SWH, representing two habitat types, within 120m of, or overlapping, project components, which may incur impacts. These wildlife habitats, potential negative effects, and mitigation measures to be implemented are discussed in Table 4 below.

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 4 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operational phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

Table 4. Potential Negative Effects and Mitigation Measures for Confirmed Significant Wildlife Habitats within the Project Area

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
Waterfowl Stopover and Staging Area (Aquatic)			
Overlapping ¹ : Direct Impact (i.e. underground collector lines will be installed by horizontal directional drilling with entry/exit pits that will be located at least 30m from the South Nation River or by installation of overhead electrical collector line, with poles that will be located outside of the core habitat and within the 100m habitat buffer; tree pruning or removal may be required for the installation and/or operation of the overhead electrical collector lines).	WSA-001	<ul style="list-style-type: none"> • Reduced water quality (i.e. increased turbidity) • Noise disturbance/avoidance behaviour • Avoidance of habitat, if overhead collector lines are used • Direct mortality of individuals, if overhead collector lines are used • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases 	<ul style="list-style-type: none"> • Implement Proper Arboricultural Techniques^{2,3} • Delineation of Work Area² • Minimization of Impacts to Water Quality² • Herbicide Avoidance^{2,3} • Adherence to Wildlife Timing Windows (Waterfowl Stopover and Staging)^{2,3} • Develop a Bird and Bat EEMP³ • Installation of High Visibility Markers on Overhead Lines³ • Minimization of Spills^{2,3}
0.1m - 30m	N/A	N/A	N/A
>30m - 120m	N/A	N/A	N/A
Amphibian Breeding Habitat (Woodland)			
Overlapping: Indirect Impact (Overlap is limited to within the public road allowance)	AWO-018	<ul style="list-style-type: none"> • Accidental damage to habitat • Noise disturbance/avoidance behaviour • Avoidance of habitat during operation phase • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac- 	<ul style="list-style-type: none"> • Delineation of Work Area² • Herbicide Avoidance^{2,3} • Adherence to Wildlife Timing Windows (Amphibian Breeding Habitat)^{2,3} • Posting of On-site Speed Limits^{2,3} • Minimization of Erosion and Sedimentation² • Minimization of Fugitive Dust

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
		out, etc.) during the construction, operation, and decommissioning phases <ul style="list-style-type: none"> • Changes in soil moisture • Soil compaction 	Emission ² <ul style="list-style-type: none"> • Minimization of Spills^{2,3} • Minimization of Impacts to Soil Moisture² • Minimization of Soil Compaction²
0.1m - 30m	N/A	N/A	N/A
>30m - 120m	N/A	N/A	N/A

¹ Both underground and overhead electrical collector lines are being considered for this Project. As the specific locations are currently unknown, impacts associated with each construction activity type have been considered.

² Mitigation measure is applicable during the construction and decommissioning phases of the Project; refer to Table 8 for more details.

³ Mitigation measure is applicable during the operational phase of the Project; refer to Table 9 for more details.

5.2.2 Project Location within 120m Wildlife Habitat Treated as Significant

NRSI biologists have identified 80 individual treated as significant wildlife habitats, representing 12 habitat types, that are overlapping Project components or within 120m of (but not overlapping) Project components, that are required to be individually identified and delineated, as per Appendix D of the NHA Guide (OMNR 2012). For the purpose of this report, 68 of these wildlife habitats have been conservatively treated as significant with a commitment to complete detailed surveys to confirm significance prior to the construction phase of the Project. The remaining 12 habitats have been treated as significant with no further assessments required, as outlined in more detail below.

As identified in Section 4.0, there are certain features located greater than 30m from the Project Location that have no anticipated potential negative impacts from the construction, decommissioning or operational phases of the Project. There are a total of eight of these habitats, including five amphibian breeding habitats (woodland), one old growth forest habitat, and two vegetation species of conservation concern habitats. These eight habitats have been treated as significant and have been determined to not require the completion of evaluation of significance surveys, as potential negative effects to these habitats have been mitigated by siting the Project Location greater than 30m from their location.

The remaining four wildlife habitats have been treated as significant due to a conservative approach to habitats where site-specific property access was denied and therefore detailed significance studies could not be completed. In these locations, no

suitable alternative survey location (e.g. property line, roadside, etc.) was available and/or an alternative survey location was determined not suitable to collect the information required to confirm significance. Therefore, these habitats have been conservatively treated as significant with no requirement for additional studies.

Each of these 80 wildlife habitats that have been treated as significant are addressed in Table 5, including potential negative effects of the Project and recommended mitigation measures if pre-construction surveys (where applicable) confirm significance of the habitat. The details of the surveys required for each of the 68 wildlife habitats that have been treated as significant with a commitment to conduct pre-construction surveys are provided in Table 7.

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 5 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operations phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

Table 5. Potential Negative Effects and Mitigation Measures for Treated as Significant Wildlife Habitats Within the Project Area

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
Bat Maternity Colony			
Overlapping: Indirect Impact (Overlap is limited to within the public road allowance)	BMA-003*	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Noise disturbance/avoidance behaviour • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines • Fugitive dust emission 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Bat Maternity Colony)^{1,2} • Develop a Bird and Bat EEMP² • Posting of On-site Speed Limits^{1,2} • Minimization of Fugitive Dust Emission¹
0.1m - 30m	BMA-001* BMA-002	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Noise disturbance/ avoidance behaviour • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines • Fugitive dust emission 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Bat Maternity Colony)^{1,2} • Develop a Bird and Bat EEMP² • Posting of On-site Speed Limits^{1,2} • Minimization of Fugitive Dust Emission¹
>30m - 120m	N/A	N/A	N/A
Turtle Wintering Area			
Overlapping ⁴ : Indirect Impact (i.e. overhead electrical collector lines will extend above the habitat to avoid direct impact or underground collector lines will be installed by horizontal directional drilling under feature)	TWA-001*	<ul style="list-style-type: none"> • Accidental damage to habitat • Noise disturbance/ avoidance behaviour • Erosion and sedimentation • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Turtle Wintering Area)¹ • Posting of On-site Speed Limits¹ • Minimization of Erosion and Sedimentation¹ • Minimization of Spills^{1,2}
0.1m - 30m	N/A	N/A	N/A
>30m - 120m	N/A	N/A	N/A
Reptile Hibernaculum			
Overlapping: Indirect Impact (Overlap is limited to within the public road allowance)	SNH-006	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Noise disturbance/ avoidance behaviour • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Reptile Hibernacula)¹ • Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Reptile Hibernacula)³ • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Spills^{1,2}
0.1m - 30m	N/A	N/A	N/A
>30m - 120m			
Alvar			
Overlapping: Direct Impact (i.e. temporary and/or	ALV-001* ALV-002*	<ul style="list-style-type: none"> • Removal of up to 0.81ha of habitat (ALV-001*), representing 18% of the individual habitat 	<ul style="list-style-type: none"> • Develop an Alvar Compensation Plan² • Implement Proper Arboricultural Techniques^{1,2}

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
permanent Project component types within features – ALV-001*) Or Indirect Impact (Overlap limited to within the public road allowance – ALV-002*)		<ul style="list-style-type: none"> Accidental damage to <0.01ha of habitat (ALV-002*), representing 0.3% of the total habitat Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases Changes in soil moisture Soil compaction 	<ul style="list-style-type: none"> Delineation of Work Area¹ Herbicide Avoidance^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Spills^{1,2} Minimization of Invasive Seed Transfer¹ Minimization of Impacts to Soil Moisture¹ Minimization of Soil Compaction¹
0.1m - 30m	N/A	N/A	N/A
>30m - 120m			
Old Growth Forest			
Overlapping	N/A	N/A	N/A
0.1m - 30m			
>30m - 120m	OGF-001	No identified potential negative effects	None applicable
Savannah			
Overlapping: Indirect Impact (Overlap limited to within the public road allowance – SAV-001*)	SAV-001*	<ul style="list-style-type: none"> Accidental damage to <0.03ha of habitat (SAV-001*), representing <0.1% of the total habitat Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases Changes in soil moisture Soil compaction 	<ul style="list-style-type: none"> Implement Proper Arboricultural Techniques^{1,2} Delineation of Work Area¹ Herbicide Avoidance^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Spills^{1,2} Minimization of Invasive Seed Transfer¹ Minimization of Impacts to Soil Moisture¹ Minimization of Soil Compaction¹
0.1m - 30m	N/A	N/A	N/A
>30m - 120m			
Tallgrass Prairie			
Overlapping: Direct Impact (i.e. temporary and/or permanent Project component types within features – TGP-001*)	TGP-001*	<ul style="list-style-type: none"> Removal of up to 0.12ha of habitat (TGP-001*), representing 8.7% of the total habitat Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and 	<ul style="list-style-type: none"> Develop an Tallgrass Prairie Compensation Plan² Delineation of Work Area¹ Herbicide Avoidance^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Spills^{1,2}

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
		<ul style="list-style-type: none"> decommissioning phases Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases Changes in soil moisture Soil compaction 	<ul style="list-style-type: none"> Minimization of Invasive Seed Transfer¹ Minimization of Impacts to Soil Moisture¹ Minimization of Soil Compaction¹
0.1m - 30m	TGP-002*	<ul style="list-style-type: none"> Accidental damage to habitat Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases Changes in soil moisture Soil compaction 	<ul style="list-style-type: none"> Delineation of Work Area¹ Herbicide Avoidance^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Spills^{1,2} Minimization of Invasive Seed Transfer¹ Minimization of Impacts to Soil Moisture¹ Minimization of Soil Compaction¹
>30m - 120m	N/A	N/A	N/A
Amphibian Breeding Habitat (Woodland)			
Overlapping: Indirect Impact (Overlap limited to within the public road allowance)	AWO-001* AWO-012* AWO-014* AWO-015* AWO-016* AWO-022*	<ul style="list-style-type: none"> Accidental damage to habitat Noise disturbance/ avoidance behaviour Avoidance of habitat during operation phase Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases Changes in soil moisture Soil compaction 	<ul style="list-style-type: none"> Delineation of Work Area¹ Herbicide Avoidance^{1,2} Adherence to Wildlife Timing Windows (Amphibian Breeding Habitat)^{1,2} Posting of On-site Speed Limits^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Spills^{1,2} Minimization of Impacts to Soil Moisture¹ Minimization of Soil Compaction¹
0.1m - 30m	AWO-004* [‡] AWO-006* AWO-007* AWO-008* AWO-010* AWO-011* [‡] AWO-013* [‡] AWO-017* [‡] AWO-019* [‡] AWO-020* AWO-023* AWO-024*	<ul style="list-style-type: none"> Accidental damage to habitat Noise disturbance/ avoidance behaviour Avoidance of habitat during operation phase Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases Changes in soil moisture <p>If the results of the evaluation of significance surveys</p>	<ul style="list-style-type: none"> Delineation of Work Area¹ Herbicide Avoidance^{1,2} Adherence to Wildlife Timing Windows (Amphibian Breeding Habitat)^{1,2} Posting of On-site Speed Limits^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Spills^{1,2} Minimization of Impacts to Soil Moisture¹

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
		indicate that Bullfrog (<i>Lithobates catesbeiana</i>) is present within any habitat with permanent water with abundant emergent vegetation, amphibian breeding habitat (wetland) and amphibian movement corridors will also be considered. The potential negative effects and mitigation measures identified for amphibian breeding habitats (woodland) are also applicable to amphibian breeding habitat (wetland) and amphibian movement corridors.	
>30m - 120m	AWO-002 AWO-003 AWO-005 AWO-009 AWO-021	No identified potential negative effects	None applicable
Open Country Bird Breeding Habitat			
Overlapping	N/A	N/A	N/A
0.1m - 30m	OCB-001*	<ul style="list-style-type: none"> Accidental damage to habitat Noise disturbance/ avoidance behaviour Avoidance of habitat during operation phase Direct mortality of individuals resulting from collisions with operational turbines Erosion and sedimentation Fugitive dust emission Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases <p>If blasting for excavation of T4 turbine foundation is required (blasting will not occur within 30m of significant open country bird breeding habitats),</p> <ul style="list-style-type: none"> Fugitive dust and debris emission from blasting <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> Noise disturbance/ avoidance behaviour 	<ul style="list-style-type: none"> Delineation of Work Area¹ Herbicide Avoidance^{1,2} Adherence to Wildlife Timing Windows (Open Country Bird Breeding Habitats)^{1,2} Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Open Country Bird Breeding Habitats)³ Develop a Bird and Bat EEMP² Posting of On-site Speed Limits^{1,2} Minimization of Erosion and Sedimentation¹ Minimization of Fugitive Dust Emission¹ Minimization of Fugitive Dust and Debris Emission from Blasting³ Minimization of Spills^{1,2}
>30m - 120m	N/A	N/A	N/A
Habitats for Species of Conservation Concern – Birds (Common Nighthawk)			
Overlapping: Direct Impact (i.e. temporary and/or permanent Project component types within features – CONI-002*, 003*, 004*, 006*) or	CONI-002* CONI-003* CONI-004* CONI-005* CONI-006* Common	<ul style="list-style-type: none"> Removal of up to 2.47ha of habitat (CONI-002*, 003*, 004*, 006*), averaging 0.51ha per habitat, representing and 5.5% of each overall habitat. Accidental damage to <0.01ha of habitat (CONI-005*), representing <0.1% of the total habitat Noise disturbance/ avoidance behaviour 	<ul style="list-style-type: none"> Remediation of Disturbed Habitat¹ Delineation of Work Area¹ Herbicide Avoidance^{1,2} Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern – Crepuscular Species)^{1,2} Adherence to Wildlife Timing Windows During Rock Blasting,

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
Indirect Impact (Overlap limited to within the public road allowance – CONI-005*)	Nighthawk Habitat	<ul style="list-style-type: none"> • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines** • Direct mortality of individuals resulting from collisions with access roads • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> • Noise disturbance/ avoidance behaviour 	<ul style="list-style-type: none"> • Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Crepuscular Species)³ • Develop a Bird and Bat EEMP² • Posting of On-site Speed Limits^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Spills^{1,2}
0.1m - 30m	CONI-001* CONI-008* CONI-009* Common Nighthawk Habitat	<ul style="list-style-type: none"> • Accidental damage to habitat • Noise disturbance/ avoidance behaviour • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases <p>If blasting for excavation of T4 turbine foundation is required (blasting will not occur within 30m of significant common nighthawk habitats),</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission from blasting (CONI-001*) <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> • Noise disturbance/ avoidance behaviour (only applicable to CONI-001*) 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Crepuscular Species)^{1,2} • Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Crepuscular Species)³ • Develop a Bird and Bat EEMP² • Posting of On-site Speed Limits^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Fugitive Dust and Debris Emission from Blasting³ • Minimization of Spills^{1,2}
>30m - 120m	CONI-007* Common Nighthawk Habitat	<ul style="list-style-type: none"> • Direct mortality of individuals resulting from collisions with operational turbines <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> • Noise disturbance/ avoidance behaviour 	<ul style="list-style-type: none"> • Develop a Bird and Bat EEMP² • Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Crepuscular Species)³
Habitats for Species of Conservation Concern – Birds (Eastern Wood-Pewee and Wood Thrush)			
Overlapping:	EAWP-007*	<ul style="list-style-type: none"> • Removal of habitat (EAWP-007*) 	<ul style="list-style-type: none"> • Develop an Eastern Wood-Pewee Compensation Plan²

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
<p>Direct Impact (i.e. temporary and/or permanent Project component types within features – EAWP-007*) or Indirect Impact (Overlap limited to within the public road allowance – EAWP-012*, 015*)</p>	<p>EAWP-012 EAWP-015* Eastern Wood-Pewee Habitat</p>	<ul style="list-style-type: none"> • Accidental damage to habitat (EAWP-012*, 015*) • Noise disturbance/ avoidance behaviour • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines** • Fugitive dust emission <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> • Noise disturbance/ avoidance behaviour (only applicable to EAWP-015*) 	<ul style="list-style-type: none"> • Implement Proper Arboricultural Techniques^{1,2} • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Diurnal Species)^{1,2} • Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Diurnal Species)³ • Develop a Bird and Bat EEMP² • Posting of On-site Speed Limits^{1,2} • Minimization of Fugitive Dust Emission¹
<p>0.1m - 30m</p>	<p>EAWP-001* EAWP-005* EAWP-006* EAWP-008* EAWP-009* EAWP-011** EAWP-013** EAWP-016* EAWP-017** EAWP-018* Eastern Wood-Pewee Habitat</p> <p>WOTH-001* WOTH-002* WOTH-003 WOTH-004** WOTH-005* Wood Thrush Habitat</p>	<ul style="list-style-type: none"> • Accidental damage to habitat, including tree limbs • Noise disturbance/ avoidance behaviour • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines • Fugitive dust emission <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> • Noise disturbance/ avoidance behaviour (only applicable to EAWP-001*, 008*, 009*, WOTH-001*, 002*, 005*) 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Diurnal Species)^{1,2} • Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Diurnal Species)³ • Develop a Bird and Bat EEMP² • Posting of On-site Speed Limits^{1,2} • Minimization of Fugitive Dust Emission¹
<p>>30m - 120m</p>	<p>EAWP-002* EAWP-003* EAWP-004* EAWP-010* EAWP-014* Eastern Wood-Pewee Habitat</p>	<ul style="list-style-type: none"> • Direct mortality of individuals resulting from collisions with operational turbines <p>If blasting for excavation of T4 turbine foundation is required,</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission from blasting (EAWP-003*) • Noise disturbance/ avoidance behaviour (EAWP-003*) <p>If rock trenching, sawing, or hammering is required to install underground electrical collector lines:</p> <ul style="list-style-type: none"> • Noise disturbance/ avoidance behaviour (EAWP-002*, 003*, 014*) 	<ul style="list-style-type: none"> • Develop a Bird and Bat EEMP² • Minimization of Fugitive Dust and Debris Emission from Blasting³ • Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Diurnal Species)³ • Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Diurnal Species)³

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
Habitats for Species of Conservation Concern – Vegetation			
Overlapping: Direct Impact (i.e. temporary and/or permanent Project component types within features)	MUWE-002* MUWE-003* MUWE-004* MUWE-005* Mühlenberg's Weissia Habitat	<ul style="list-style-type: none"> • Removal of up to 2.7ha of habitat, averaging 0.68ha per habitat and 25.9% of each individual habitat • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases • Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases • Changes in soil moisture • Soil compaction 	<ul style="list-style-type: none"> • Transplanting of Individuals¹ • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Spills^{1,2} • Minimization of Invasive Seed Transfer¹ • Minimization of Impacts to Soil Moisture¹ • Minimization of Soil Compaction¹
0.1m - 30m	MUWE-001* MUWE-007** MUWE-009** MUWE-010** Mühlenberg's Weissia Habitat	<ul style="list-style-type: none"> • Accidental damage to habitat • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases • Increased vegetation species competition through introduction of invasive vegetation species during the construction, operation, and decommissioning phases • Changes in soil moisture • Soil compaction <p>If blasting for excavation of T4 turbine foundation is required (blasting will not occur within 30m of significant Mühlenberg's Weissia Habitats),</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission from blasting (MUWE-001*) 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Minimization of Erosion and Sedimentation¹ • Minimization of Fugitive Dust Emission¹ • Minimization of Fugitive Dust and Debris Emission from Blasting³ • Minimization of Spills^{1,2} • Minimization of Invasive Seed Transfer¹ • Minimization of Impacts to Soil Moisture¹ • Minimization of Soil Compaction¹
>30m - 120m	MUWE-006* MUWE-008* Mühlenberg's Weissia Habitat	<ul style="list-style-type: none"> • No identified potential negative effects 	<ul style="list-style-type: none"> • None applicable
Habitats for Species of Conservation Concern – Insects			
Overlapping: Direct Impact (i.e. temporary and/or permanent Project component types within features– MONA-002*, 003*, 004*, 006*) or	MONA-002* MONA-003* MONA-004* MONA-005* MONA-006* Monarch Habitat	<ul style="list-style-type: none"> • Removal of up to 2.47ha of habitat (MONA-002*, 003*, 004*, 006*), averaging 0.62ha per habitat and 5.6% of each individual habitat. • Accidental damage to <0.01ha of habitat (MONA-005*), representing <0.1% of the total habitat • Disturbance/ avoidance behaviour 	<ul style="list-style-type: none"> • Remediation of Disturbed Habitat¹ • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Documenting Incidental Mortalities of Butterfly Species of Conservation Concern² • Minimization of Erosion and Sedimentation¹

Closest Distance to Project Location	Feature ID	Potential Negative Effects	Mitigation Measures
Indirect Impact (Overlap limited to within the public road allowance – MONA-005*)		<ul style="list-style-type: none"> • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines** • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases 	<ul style="list-style-type: none"> • Posting of On-site Speed Limits^{1,2} • Minimization of Fugitive Dust Emission¹ • Minimization of Spills^{1,2}
0.1m - 30m	MONA-001* Monarch Habitat	<ul style="list-style-type: none"> • Accidental damage to habitat • Disturbance/ avoidance behaviour • Avoidance of habitat during operation phase • Direct mortality of individuals resulting from collisions with operational turbines • Erosion and sedimentation • Fugitive dust emission • Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.) during the construction, operation, and decommissioning phases <p>If blasting for excavation of T4 turbine foundation is required (blasting will not occur within 30m of significant monarch habitats),</p> <ul style="list-style-type: none"> • Fugitive dust and debris emission from blasting 	<ul style="list-style-type: none"> • Delineation of Work Area¹ • Herbicide Avoidance^{1,2} • Adherence to Wildlife Timing Windows (Butterfly Species of Conservation Concern Habitats)^{1,2} • Documenting Incidental Mortalities of Butterfly Species of Conservation Concern² • Minimization of Erosion and Sedimentation¹ • Posting of On-site Speed Limits^{1,2} • Minimization of Fugitive Dust Emission¹ • Minimization of Fugitive Dust and Debris Emission from Blasting³ • Minimization of Spills^{1,2}
>30m - 120m	N/A	N/A	N/A

¹ Mitigation measure is applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

² Mitigation measure is applicable during the operational phase of the Project; please refer to Table 9 for more details.

³ Mitigation measure is applicable during the construction phase of the Project; please refer to Table 8 for more details.

⁴ Both underground and overhead electrical collector lines are being considered for this Project. As the specific locations are currently unknown, impacts associated with each construction activity type have been considered.

*Mitigation measures are only applicable if the habitats described in this table are determined to be significant through pre-construction surveys (if applicable), as described in Section 6.1

**This potential negative effect is only applicable to habitats within 120m of a wind turbine.

‡ Mapping depicts this feature as being overlapped by the Project Location; however, all project components, including the construction disturbance area, will be located adjacent to the feature (>0.1m), or collector lines may be installed beneath the feature via directional drilling.

5.2.3 Generalized Impacts to Wildlife Habitat

In addition to the SWHs identified above, NRSI biologists have identified a number of wildlife habitat types that are, or may be, present within the Project Area, but are located within 50m or 120m of, and not overlapping, Project components that are not expected to have an operational impact on these habitats, and are not required to be individually identified and delineated, as outlined Appendix D of the *NHA Guide for Renewable Energy Projects* (OMNR 2012). In accordance with the *NHA Guide for Renewable Energy Projects* (OMNR 2012), potential impacts to these habitats are typically associated with the temporary disturbance caused by construction activity, which can be grouped together as generalized impacts and can be addressed through general construction mitigation measures. By definition, general construction mitigation measures are intended to be tailored to the proposed construction activity(ies) and not required to address any specific habitat(s) which have the potential to occur within a generalized SWH area (OMNR 2012).

NRSI biologists have reviewed the full suite of wildlife habitats that require generalized consideration, and have compiled a comprehensive list of proposed mitigation measures that will be implemented during the construction and decommissioning phases of the Project (Table 6).

Many of the recommended mitigation measures, performance objectives, monitoring commitments, and contingency plans are consistent between natural features, SWH, and generalized SWH. As such, recommended mitigation measures have been listed in Table 6 below (e.g. Minimization of Erosion and Sedimentation, Posting of On-site Speed Limits, etc.), while the details of each listed mitigation measure, including performance objectives, monitoring commitments, and contingency plans, are provided in Table 8 (applicable to the construction and decommissioning phases of the Project) and/or Table 9 (applicable to the operations phase of the Project). Table 8 and Table 9 also identify the location(s) where the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply, depending on the natural feature type and distance to the Project Location.

Table 6. Potential Negative Effects and Mitigation Measures for Generalized Significant Wildlife Habitats During the Construction and Decommissioning Phases of the Project

Project Component	Project Activity	Potential Negative Effects to Generalized SWHs Located within 120m	Mitigation Measures ¹
Structures (Substation, which may include a control building, and up to 3 meteorological towers)	Clearing, grubbing, grading, excavation, and topsoil removal	<ul style="list-style-type: none"> • Erosion and sedimentation • Fugitive dust emission • Changes in soil moisture 	<ul style="list-style-type: none"> • Minimization of Erosion and Sedimentation • Minimization of Fugitive Dust Emission • Minimization of Impacts to Soil Moisture
	Noise/human activity	<ul style="list-style-type: none"> • Disturbance and/or mortality to local wildlife 	<ul style="list-style-type: none"> • Adherence to Wildlife Timing Windows (Generalized SWHs) • Post On-site Speed Limits
	Accidental damage or removal of vegetation	<ul style="list-style-type: none"> • Damage or removal of vegetation adjacent to the Project Location 	<ul style="list-style-type: none"> • Delineation of Work Area
	Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.)	<ul style="list-style-type: none"> • Soil or water contamination 	<ul style="list-style-type: none"> • Minimization of Spills
	Installation of impervious surfaces	<ul style="list-style-type: none"> • Changes in soil moisture • Reduced infiltration 	<ul style="list-style-type: none"> • Minimization of Impacts to Soil Moisture • Minimization of Impacts to Infiltration
	Dewatering activities (if necessary)	<ul style="list-style-type: none"> • Reduced groundwater discharge 	<ul style="list-style-type: none"> • Minimization of Impacts to Groundwater Discharge
Turbines (Erection/Dismantling)	Clearing, grubbing, grading, excavation, and topsoil removal	<ul style="list-style-type: none"> • Erosion and sedimentation • Fugitive dust emission • Changes in soil moisture 	<ul style="list-style-type: none"> • Minimization of Erosion and Sedimentation • Minimization of Fugitive Dust Emission • Minimization of Impacts to Soil Moisture
	Noise/human activity	<ul style="list-style-type: none"> • Disturbance and/or mortality to local wildlife 	<ul style="list-style-type: none"> • Adherence to Wildlife Timing Windows (Generalized SWHs) • Post On-site Speed Limits
	Accidental damage or removal of vegetation	<ul style="list-style-type: none"> • Damage or removal of vegetation adjacent to the Project Location 	<ul style="list-style-type: none"> • Delineation of Work Area
	Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.)	<ul style="list-style-type: none"> • Soil or water contamination 	<ul style="list-style-type: none"> • Minimization of Spills
	Dewatering activities (if necessary)	<ul style="list-style-type: none"> • Reduced groundwater discharge 	<ul style="list-style-type: none"> • Minimization of Impacts to Groundwater Discharge
	Installation of impervious surfaces	<ul style="list-style-type: none"> • Changes in soil moisture • Reduced infiltration 	<ul style="list-style-type: none"> • Minimization of Impacts to Soil Moisture • Minimization of Impacts to Infiltration
Access Roads	Clearing, grubbing, grading, and topsoil removal	<ul style="list-style-type: none"> • Erosion and sedimentation • Fugitive dust emission • Changes in soil moisture 	<ul style="list-style-type: none"> • Minimization of Erosion and Sedimentation • Minimization of Fugitive Dust Emission • Minimization of Impacts to Soil Moisture
	Noise/human activity	<ul style="list-style-type: none"> • Disturbance and/or mortality to local wildlife 	<ul style="list-style-type: none"> • Adherence to Wildlife Timing Windows (Generalized SWHs) • Post On-site Speed Limits
	Accidental damage or removal of vegetation	<ul style="list-style-type: none"> • Damage or removal of vegetation adjacent to the Project Location 	<ul style="list-style-type: none"> • Delineation of Work Area
	Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.)	<ul style="list-style-type: none"> • Soil or water contamination 	<ul style="list-style-type: none"> • Minimization of Spills
	Installation of impervious surfaces	<ul style="list-style-type: none"> • Changes in soil moisture 	<ul style="list-style-type: none"> • Minimization of Impacts to Soil Moisture

Project Component	Project Activity	Potential Negative Effects to Generalized SWHs Located within 120m	Mitigation Measures ¹
		<ul style="list-style-type: none"> • Reduced infiltration 	<ul style="list-style-type: none"> • Minimization of Impacts to Infiltration
Electrical Collector Lines (Overhead or Underground)	Clearing, grubbing, grading, excavation, and topsoil removal	<ul style="list-style-type: none"> • Erosion and sedimentation • Fugitive dust emission • Changes in soil moisture 	<ul style="list-style-type: none"> • Minimization of Erosion and Sedimentation • Minimization of Fugitive Dust Emission • Minimization of Impacts to Soil Moisture
	Noise/human activity	<ul style="list-style-type: none"> • Disturbance and/or mortality to local wildlife 	<ul style="list-style-type: none"> • Adherence to Wildlife Timing Windows (Generalized SWHs) • Adherence to Wildlife Timing Windows During Rock Trenching, Sawing, or Hammering (Generalized SWHs)² • Post On-site Speed Limits
	Accidental damage or removal of vegetation	<ul style="list-style-type: none"> • Damage or removal of vegetation adjacent to the Project Location 	<ul style="list-style-type: none"> • Delineation of Work Area
	Spills or accidental fluid release (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.)	<ul style="list-style-type: none"> • Soil or water contamination 	<ul style="list-style-type: none"> • Minimization of Spills
	Dewatering activities (if necessary)	<ul style="list-style-type: none"> • Reduced groundwater discharge 	<ul style="list-style-type: none"> • Minimization of Impacts to Groundwater Discharge
Construction Staging Areas and Laydown Areas	Clearing, grubbing, grading, and topsoil removal	<ul style="list-style-type: none"> • Erosion and sedimentation • Fugitive dust emission • Changes in soil moisture 	<ul style="list-style-type: none"> • Minimization of Erosion and Sedimentation • Minimization of Fugitive Dust Emission • Minimization of Impacts to Soil Moisture
	Noise/human activity	<ul style="list-style-type: none"> • Disturbance and/or mortality to local wildlife 	<ul style="list-style-type: none"> • Adherence to Wildlife Timing Windows (Generalized SWHs) • Post On-site Speed Limits
	Accidental damage or removal of vegetation	<ul style="list-style-type: none"> • Damage or removal of vegetation adjacent to the Project Location 	<ul style="list-style-type: none"> • Delineation of Work Area
	Spills or accidental fluid release (i.e. oil, gasoline, grease, etc.)	<ul style="list-style-type: none"> • Soil or water contamination 	<ul style="list-style-type: none"> • Minimization of Spills
	Installation of impervious surfaces	<ul style="list-style-type: none"> • Changes in soil moisture • Reduced infiltration 	<ul style="list-style-type: none"> • Minimization of Impacts to Soil Moisture • Minimization of Impacts to Infiltration

¹ Mitigation measures are applicable during the construction and decommissioning phases of the Project; please refer to Table 8 for more details.

² Mitigation measure is applicable during the construction phase of the Project; please refer to Table 8 for more details.

6.0 Summary of Commitments

For each natural feature or wildlife habitat that has been determined to be significant, including treated as significant, NRSI biologists have identified potential negative effects, proposed mitigation measures, performance objectives, monitoring commitments, and contingency plans associated with the construction, operation, and decommissioning phases of the Project.

NRSI has summarized the full extent of commitments for the Project in the sections below, including:

- Pre-Construction Monitoring Commitments
- Construction and Decommissioning Phase Commitments
 - Detailed Mitigation Measures
 - Performance Objectives
 - Monitoring Commitments
 - Contingency Plans
- Operational Phase Commitments
 - Detailed Mitigation Measures
 - Performance Objectives
 - Monitoring Commitments
 - Contingency Plans
- Post-Construction Monitoring Commitments

6.1 Pre-Construction Monitoring Commitments

In accordance with the NHA, NRSI biologists have identified 68 natural features that have been treated as significant until additional pre-construction surveys can be completed to confirm (or deny) the significance based on provincially accepted evaluation criteria as outlined in the *SWH Criteria Schedules for Ecoregion 6E* (MNRF 2015). The pre-construction surveys that will be conducted as part of the commitments made in the EOS, and reiterated in this EIS, are summarized in Table 7.

Table 7. Summary of Pre-Construction Monitoring Commitments for the Project

Wildlife Habitat Type	Generalized Methods*	Applicable Feature(s)
Bat Maternity Colony	<p>Surveys within candidate bat maternity colony habitats where access is fully (BMA-001) or partially granted (BMA-003) will be conducted according to the methods outlined below. Site access was denied for BMA-002 and therefore no studies can occur within this feature.</p> <p><u>Where site access is granted</u>, exit surveys will be conducted during the month of June. Observers will choose a viewing station with a clear aspect of a cavity opening or crevice, which</p>	BMA-001 BMA-003

Wildlife Habitat Type	Generalized Methods*	Applicable Feature(s)
	<p>will be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats entering or exiting. An acoustic bat detector paired with a digital audio recorder will be used in conjunction with visual surveys to determine species. Each candidate tree will only be monitored once. Night-vision or infrared video equipment may be substituted for observers. Once an evening's monitoring is completed (60 minutes after sunset), the cameras will be collected by the NRSI staff members conducting visual surveys in the same candidate significant habitat and the visual recordings for each video recorder will be reviewed for evidence of significant bat roosting activity.</p> <p>The locations of monitoring sites within the candidate significant habitats will be determined based on conditions of the site and in accordance with the criteria listed in <i>Bats and Bat Habitats: Guidelines for Wind Power Projects</i> (OMNR 2011b). The locations of the candidate significant habitats can be seen on Maps 3-1 to 3-12.</p>	
Turtle Wintering Area	<p>Surveys for emerging turtles will be completed in the single candidate turtle wintering area (TWA-001) using daytime basking surveys from land on 4 separate visits between March and May. Turtle basking surveys will be completed at temperatures above 10°C on calm, clear, or partly cloudy days, where possible.</p> <p>Turtle basking surveys will generally follow the Visual Encounter Survey protocol developed by the MNRF for Blanding's Turtle (MNRF 2013). Sites will be approached slowly and visually scanned for turtles for a minimum of 20 minutes to allow for turtles to return to basking behaviour, if initially startled by approaching surveyors.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on the conditions of the site. The locations of the significant habitat can be seen on Maps 3-1 to 3-12.</p>	TWA-001
Alvar	<p>One standardized area search will be conducted within the 2 candidate significant alvar habitats within the Project Area. Surveys will be conducted during a time period when indicator species exhibit characteristics that allow for confident identification, preferably during the flowering period of June and July. The location of the candidate significant habitat can be seen on Maps 5-1 to 5-12.</p>	ALV-001 ALV-002
Savannah	<p>One standardized area search will be conducted within the candidate significant savannah habitat within the Project Area. Surveys will be conducted during a time period when indicator plant species exhibit characteristics that allow for confident identification. Given the flowering and identification characteristics of the indicator species, field surveys will occur during the period of July to September. The location of the candidate significant habitat can be seen on Maps 5-1 to 5-12.</p>	SAV-001
Tallgrass Prairie	<p>One standardized area search will be conducted within each of the 2 candidate significant tallgrass prairie habitats within the Project Area. Surveys will be conducted during a time period when indicator plant species exhibit characteristics that allow for confident identification. Given the flowering and identification characteristics of the indicator species, field surveys will occur</p>	TGP-001 TGP-002

Wildlife Habitat Type	Generalized Methods*	Applicable Feature(s)
Amphibian Breeding Habitat (Woodland)	<p>during the period of July to September. The location of the candidate significant habitats can be seen on Maps 5-1 to 5-12.</p> <p>NRSI will conduct 3 evening amphibian call surveys within or adjacent to any candidate significant amphibian woodland breeding habitat, once in each of April, May and June. Each survey will last 3 minutes, following the accepted Marsh Monitoring Program protocol, and will begin no earlier than one half hour after sunset and end before midnight. Semi-circular point counts will be conducted to monitor calling amphibians. Several point counts may be required in order to adequately survey the area. Point counts will be located at least 500m apart to prevent counting duplicate amphibian calls.</p> <p>During each survey, biologists will record species and calling abundance codes, along with other appropriate information (date, time, weather, etc.). A UTM will be taken for each call location to ensure consistency between survey visits.</p> <p>Where site access is granted, 2 amphibian egg mass searches will also be conducted during daylight hours. The exact timing of the surveys will be dependent on spring conditions and when amphibians are expected to be breeding within the general vicinity of the Project Area, but are expected to occur once in April and again in either May or June. A minimum search effort of 30 minutes will be used on each visit, and in each habitat. These area searches will include walking within the wetland or vernal pool along the perimeter, looking for egg masses. Due to the composition and attributes of the candidate amphibian breeding habitats, special equipment will not be required to identify egg masses; however, visual surveys conducted in breeding ponds with high water levels will require the use of chest waders. This approach is expected to effectively identify egg masses, while minimizing any disturbance effects caused by sampling.</p> <p>If candidate significant habitat (vernal pools) is determined to not be present during the first site visit, no specific studies will be conducted and the habitat will be confirmed not significant.</p> <p>If Bullfrog is identified during evaluation of significance surveys in any candidate Amphibian Breeding Habitat (Woodland) containing permanent water with abundant emergent vegetation, the applicable habitat(s) will also be considered against criteria of significance for Amphibian Breeding Habitat (Wetland) and any applicable amphibian movement corridors will be identified.</p> <p>The locations of monitoring sites within the candidate significant habitats will be determined based on conditions of the site. The locations of the candidate significant habitats can be seen on Maps 4-1 to 4-12.</p>	<p>AWO-001 AWO-004 AWO-006 AWO-007 AWO-008 AWO-010 AWO-011 AWO-012 AWO-013 AWO-014 AWO-015 AWO-016 AWO-017 AWO-019 AWO-020 AWO-022 AWO-023 AWO-024</p>
Open Country Bird Breeding Habitat	<p>NRSI will conduct 3 open country breeding bird point count surveys at the single candidate open country bird breeding habitat (OCB-001) in June and early July, with no less than 10 days between visits, following the monitoring protocol for point count surveys in <i>Birds and Bird Habitats: Guidelines for Wind Power Projects</i> (OMNR 2011a) . Surveys will be carried out between dawn (half hour before sunrise) and 3 hours after sunrise, during a time period when males are singing and</p>	<p>OCB-001</p>

Wildlife Habitat Type	Generalized Methods*	Applicable Feature(s)
	<p>defending territories. Where site access permits, the observer will walk along a standardized transect, stopping at each point count to undertake 10 minutes of observations and listening. Optimal weather conditions for these surveys are clear, calm, sunny days with little to no precipitation. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>If candidate significant habitat (meadow habitat) is determined to not be present during the first site visit, no specific studies will be conducted and the habitat will be confirmed not significant.</p> <p>The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The location of the candidate significant habitat can be seen on Maps 5-1 to 5-12.</p>	
<p>Common Nighthawk (<i>Chordeiles minor</i>)</p>	<p>NRSI will conduct 10-minute point counts within, or adjacent to, the 9 candidate common nighthawk habitats (CONI-001, CONI-002, CONI-003, CONI-004, CONI-005, CONI-006, CONI-007, CONI-008 and CONI-009) on 3 survey dates between late May and early July. Survey dates will be selected based on evenings (after sunset) or early morning (before sunrise) that fit the following parameters:</p> <p>At least 50% of the visible moon surface is illuminated, i.e. between 1st quarter and last quarter moon phases. Little or no cloud-cover so that the moon is visible. Calm or light winds up to 3 on the Beaufort scale. No precipitation. Temperatures above 10°C.</p> <p>Surveys will begin at sunset and finish no later than 90 minutes after sunset.</p> <p>The monitoring site locations within these candidate significant habitats will be determined based on conditions of the site. The locations of each of the candidate significant habitats can be seen on Maps 5-1 to 5-12.</p>	<p>CONI-001 CONI-002 CONI-003 CONI-004 CONI-005 CONI-006 CONI-007 CONI-008 CONI-009</p>
<p>Eastern Wood-Pewee (<i>Contopus virens</i>)</p>	<p>NRSI will conduct 10-minute point count surveys within or adjacent to each candidate SWH for eastern wood-pewee in June and early July. Each point count station will be surveyed 3 times, once during each of early, mid and late season (spring and early summer) and no less than 10 days apart.</p> <p>The number of point counts required depends on the size and habitat diversity at each site. Following the monitoring protocol for point count surveys in <i>Birds and Bird Habitats: Guidelines for Wind Power Projects</i> (OMNR 2011a) and where site access allows, point counts will be spaced at least 250m apart in forests, ideally with the center point at least 100m from the habitat edge. Where more than one point count will be conducted within each candidate habitat, a standardized transect will also be conducted between point count sites.</p> <p>Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are expected to be actively singing and defending territories.</p>	<p>EAWP-001 EAWP-002 EAWP-003 EAWP-004 EAWP-005 EAWP-006 EAWP-007 EAWP-008 EAWP-009 EAWP-010 EAWP-011 EAWP-013 EAWP-014 EAWP-015 EAWP-016 EAWP-017 EAWP-018</p>

Wildlife Habitat Type	Generalized Methods*	Applicable Feature(s)
	<p>Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>The monitoring site locations within these candidate significant habitats will be determined based on conditions of the site. The locations of each of the candidate significant habitats can be seen on Maps 5-1 to 5-12.</p>	
<p>Wood Thrush (<i>Hylocichla mustelina</i>)</p>	<p>NRSI will conduct 10-minute point count surveys within candidate habitat identified for wood thrush in June and early July. Each point count station will be surveyed 3 times, once during each of early, mid and late season (spring and early summer) no less than 10 days apart.</p> <p>The number of point counts required depends on the size and habitat diversity at each site. Following the monitoring protocol for point count surveys in <i>Birds and Bird Habitats: Guidelines for Wind Power Projects</i> (OMNR 2011a) and where site access allows, point counts will be spaced at least 250m apart in forests, ideally with the center point at least 100m from the habitat edge. Where more than one point count will be conducted within each candidate habitat, a standardized transect will also be conducted between point count sites.</p> <p>Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are expected to be actively singing and defending territories.</p> <p>Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species.</p> <p>The monitoring site locations within these candidate significant habitats will be determined based on conditions of the site. The locations of each of the candidate significant habitats can be seen on Maps 5-1 to 5-12.</p>	<p>WOTH-001 WOTH-002 WOTH-004 WOTH-005</p>
<p>Mühlenberg's Weissia (<i>Weissia muhlenbergiana</i>)</p>	<p>NRSI will conduct one standardized area search within each candidate SWH for Mühlenberg's weissia. The UTM location of any individuals will be recorded. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, which is during the period of February to mid-June.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 5-1 to 5-12.</p>	<p>MUWE-001 MUWE-002 MUWE-003 MUWE-004 MUWE-005 MUWE-007 MUWE-009 MUWE-010</p>
<p>Monarch (<i>Danaus plexippus</i>)</p>	<p>Standardized area searches will be conducted within each of the candidate monarch habitats, where full or partial access is granted. As a result of the ease of identification of this species, surveys will be carried out through visual surveys using binoculars, where appropriate. No netting or capture of individuals is anticipated.</p> <p>Surveys will be conducted once in each of late June, early July, and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when</p>	<p>MONA-001 MONA-002 MONA-003 MONA-004 MONA-005 MONA-006</p>

Wildlife Habitat Type	Generalized Methods*	Applicable Feature(s)
	<p>temperatures exceed 15°C.</p> <p>Search effort will cover the extent of all candidate significant habitats; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual.</p> <p>If, on the first site visit, host species are not found, the habitat will be confirmed to be not significant.</p> <p>The locations of each of the candidate significant habitats can be seen on Maps 5-1 to 5-12.</p>	

* The survey methods described have assumed that site access will be granted. In the event that specific site access is not available for all, or part, of a specific feature, a potential alternative survey method will be conducted and/or the habitat will continue to be treated as significant.

6.2 Construction and Decommissioning Phase Commitments

The sections above list several mitigation measures that are recommended to limit potential impacts to the identified significant natural features and wildlife habitats during the construction and decommissioning of the Project. The specific details of these proposed mitigation measures, as well as the associated performance objectives, monitoring commitments, and contingency plans are provided in Table 8, along with the location(s) where each of the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply (dependent on the SWH type and distance to the Project Location).

The table below consolidates the construction and decommissioning mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the NHA process. These proposed mitigation measures, along with other proposed mitigation measures not associated with natural heritage, have been included in the Draft *Nation Rise Wind Farm Construction Plan Report* (DNV-GL 2017a) and Draft *Nation Rise Wind Farm Decommissioning Plan Report* (DNV-GL 2017c).

Table 8. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Construction and Decommissioning Phases of the Project

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
Adherence to Wildlife Timing Windows (Amphibian Breeding Habitat)	Within 30m of or overlapping the following SWH: AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*	<ul style="list-style-type: none"> No vegetation removal will occur within the habitat during the peak amphibian breeding season (April 15th-June 15th; to July 15th if American bullfrog is present), to avoid direct harm or disturbance to breeding amphibians. Avoid construction and decommissioning activities within 30m of the habitat during the peak amphibian breeding season (April 15th-June 15th; to July 15th if American bullfrog is present), unless determined that no direct impact to the species or its habitat is expected. Schedule construction or decommissioning activities during daylight hours, to limit potential impacts from light, noise, or vehicle interactions, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> To minimize disturbance, displacement, and mortality to breeding amphibians. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> If construction and decommissioning activities must occur during the peak amphibian breeding season, install temporary drift fencing (erosion fencing) to help control amphibian movements around construction activity. If construction and decommissioning activities must occur outside of daylight hours, spotlights will be directed downwards and/or away from the habitat to minimize potential impacts to breeding amphibians.
Adherence to Wildlife Timing Windows (Bat Maternity Colony)	Within 30m of or overlapping the following SWH: BMA-001* , 002, 003*	<ul style="list-style-type: none"> Avoid construction and decommissioning activities during the critical roosting period (June 1st – June 30th). 	<ul style="list-style-type: none"> To minimize disturbance, displacement, and mortality to roosting bats. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> No contingency plan required.
Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Crepuscular Species)	Within 30m of or overlapping any of the following: CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*	<ul style="list-style-type: none"> No vegetation removal will occur within the habitat during the breeding bird period (May 1st – July 31st), to avoid direct harm or disturbance to breeding birds. Avoid construction and decommissioning activities within 30m of the habitat during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is 	<ul style="list-style-type: none"> To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats To minimize impacts on species that are active at night. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. Regular biological monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding 	<ul style="list-style-type: none"> If construction or decommissioning activities must occur within 30m of (but not overlapping) the habitat, including portions of the habitat where vegetation has previously been removed, during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches in areas within 30m of proposed activities. If an

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		<p>expected.</p> <ul style="list-style-type: none"> Schedule construction and decommissioning activities to occur during daylight hours to increase visibility and to avoid light pollution effects during the night. 		<p>season.</p>	<p>active bird nest is identified, a nest buffer of at least 10m will be applied and no construction activities will occur within the applied buffer until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</p> <ul style="list-style-type: none"> If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds.
<p>Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Crepuscular Species)**</p>	<p>Within 120m of or overlapping any of the following: CONI-001*, 002*, 003*, 004*, 005*, 006*, 007*</p>	<ul style="list-style-type: none"> No rock blasting, trenching, sawing, or hammering will occur within habitat (except in areas where habitat has previously been removed) during the breeding season (May 1st – July 31st), to avoid direct harm or disturbance to breeding birds. Avoid rock blasting, trenching, sawing, or hammering within 120m of the habitat during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected. Schedule rock blasting, trenching, sawing, or hammering to occur during daylight hours to increase visibility and to avoid light pollution effects during the night. 	<ul style="list-style-type: none"> To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats. To minimize impacts on species that are active at night. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction phase. Regular biological monitoring of breeding birds is required if construction activities will occur during the peak breeding season. 	<ul style="list-style-type: none"> If construction activities must occur within 120m of (but not overlapping) the habitat, including portions of the habitat where vegetation has previously been removed, during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches within 30m of proposed activities. If an active bird nest is identified, a nest buffer of at least 20m will be applied and no blasting, trenching, sawing, or hammering will occur within the applied buffer until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist. If construction activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
					breeding birds.
Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Diurnal Species)	<p>Within 30m of or overlapping any of the following: EAWP-001*, 005*, 006*, 007*, 008*, 009*, 011*, 012*, 013*, 015*, 016*, 017*, 018*, WOTH-001*, 002*, 003*, 004*, 005*</p>	<ul style="list-style-type: none"> No vegetation removal will occur within the habitat during the breeding bird period (May 1st – July 31st), to avoid direct harm or disturbance to breeding birds. Avoid construction and decommissioning activities within 30m of the habitat during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected. Schedule construction and decommissioning activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats. To minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. Regular biological monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding season. 	<ul style="list-style-type: none"> If construction or decommissioning activities must occur within 30m of (but not overlapping) the habitat, including portions of the habitat where vegetation has previously been removed, during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches in areas within 30m of proposed activities. If an active bird nest is identified, a nest buffer of at least 10m will be applied and no construction activities will occur within the applied buffer until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist. If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds.
Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Bird Species of Conservation Concern Habitats – Diurnal Species)**	<p>Within 120m of or overlapping any of the following: EAWP-001*, 002*, 003*, 008*, 009*, 014*, 015*, WOTH-001*, 002*, 005*</p>	<ul style="list-style-type: none"> No rock blasting, trenching, sawing, or hammering will occur within habitat (except in areas where habitat has previously been removed) during the breeding season (May 1st – July 31st), to avoid direct harm or disturbance to breeding birds. Avoid rock blasting, trenching, sawing, or hammering within 120m of the habitat during the 	<ul style="list-style-type: none"> To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats. To minimize impacts on species that are relatively inactive at night and not 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction phase. Regular biological monitoring of breeding birds is required if construction activities will occur during the peak breeding season. 	<ul style="list-style-type: none"> If construction activities must occur within 120m of (but not overlapping) the habitat, including portions of the habitat where vegetation has previously been removed, during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches within 30m of proposed activities. If an

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		<p>breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected, trenching, sawing, or hammering to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, unless determined that no direct impact to the species or its habitat is expected.</p>	<p>accustomed to nighttime disturbances.</p>		<p>active bird nest is identified, a nest buffer of at least 20m will be applied and no blasting, trenching, sawing, or hammering will occur within the applied buffer until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.</p> <ul style="list-style-type: none"> • If construction activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds.
<p>Adherence to Wildlife Timing Windows (Generalized SWHs)</p>	<p>Within 30m of any of the following: Generalized SWHs</p>	<ul style="list-style-type: none"> • Avoid construction and decommissioning activities during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected. • Schedule construction and decommissioning activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> • To minimize the potential disturbance, displacement, and/or mortality to species that might be breeding within these habitats. • To minimize impacts on species that are not accustomed to nighttime disturbances. 	<ul style="list-style-type: none"> • Regular environmental monitoring will occur during the construction and decommissioning phase. • Regular biological monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding season. 	<ul style="list-style-type: none"> • If construction or decommissioning activities must occur during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches in areas where natural vegetation will be removed. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist. • If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
Adherence to Wildlife Timing Windows During Rock Trenching, Sawing, or Hammering (Generalized SWHs)**	Within 120m of any of the following: Generalized SWHs	<ul style="list-style-type: none"> • Avoid rock trenching, sawing, or hammering during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected. • Schedule rock trenching, sawing, or hammering to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> • To minimize the potential disturbance, displacement, and/or mortality to species that might be breeding within these habitats. • To minimize impacts on species that are not accustomed to nighttime disturbances. 	<ul style="list-style-type: none"> • Regular environmental monitoring will occur during the construction phase. • Regular biological monitoring of breeding birds is required if construction activities will occur during the peak breeding season. 	<ul style="list-style-type: none"> • If construction activities must occur during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches in areas where natural vegetation will be removed. If an active bird nest is identified in the location where natural vegetation clearing is proposed, the area will be protected and no construction activities will occur until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist. • If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance.
Adherence to Wildlife Timing Windows (Open Country Bird Breeding Habitat)	Within 30m of or overlapping any of the following: OCB-001*	<ul style="list-style-type: none"> • No vegetation removal will occur within the habitat during the breeding bird period (May 1st – July 31st), to avoid direct harm or disturbance to breeding birds. • Avoid construction and decommissioning activities within 30m of the habitat during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected. • Schedule construction and decommissioning activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> • To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats. • To minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances. 	<ul style="list-style-type: none"> • Regular environmental monitoring will occur during the construction and decommissioning phase. • Regular biological monitoring of breeding birds is required if construction and/or decommissioning activities will occur during the peak breeding season. 	<ul style="list-style-type: none"> • If construction or decommissioning activities must occur within 30m of (but not overlapping) the habitat, including portions of the habitat where vegetation has previously been removed, during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches in areas within 30m of proposed activities. If an active bird nest is identified, a nest buffer of at least 10m will be applied and no construction activities will occur within the applied buffer until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
					<ul style="list-style-type: none"> If construction or decommissioning activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds.
Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Open Country Bird Breeding Habitat)**	Within 120m of or overlapping any of the following: OCB-001*	<ul style="list-style-type: none"> No rock blasting, trenching, sawing, or hammering will occur within habitat (except in areas where habitat has previously been removed) during the breeding season (May 1st – July 31st), to avoid direct harm or disturbance to breeding birds. Avoid rock blasting, trenching, sawing, or hammering within 120m of the habitat during the breeding bird period (May 1st – July 31st), unless determined that no direct impact to the species or its habitat is expected. Schedule rock blasting, trenching, sawing, or hammering to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats. To minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction phase. Regular biological monitoring of breeding birds is required if construction will occur during the peak breeding season. 	<ul style="list-style-type: none"> If construction activities must occur within 120m of (but not overlapping) the habitat, including portions of the habitat where vegetation has previously been removed, during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches within 30m of proposed activities. If an active bird nest is identified, a nest buffer of at least 20m will be applied and no blasting, trenching, sawing, or hammering will occur within the applied buffer until the young have fledged or until the nest is no longer active, as confirmed by a qualified biologist. If construction activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to breeding birds.
Adherence to Wildlife Timing Windows (Reptile Hibernacula)	Within 30m of or overlapping the following SWH: SNH-006	<ul style="list-style-type: none"> No below-grade construction or decommissioning activities will occur within the habitat during the snake hibernation period (September 15th – May 15th). Schedule above-grade construction and decommissioning activities 	<ul style="list-style-type: none"> To minimize disturbance to hibernating snakes. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. Regular biological monitoring of hibernating snakes is required if 	<ul style="list-style-type: none"> If permissible activities must occur during the reptile hibernation season (September 15th – May 15th), daily construction monitoring will be required to ensure all activities occur above-grade such that potential impacts to

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		within the habitat, or any activity within 30m of the habitat, to occur outside of the snake hibernation period (September 15th – May 15th), unless determined that no direct impact to the species or its habitat is expected.		construction and/or decommissioning activities will occur during the peak snake hibernation season.	hibernating turtles are avoided. <ul style="list-style-type: none"> If a snake is identified where construction or decommissioning activities are proposed, including during habitat removal, the area will be protected and no construction activities will occur until the snake can be relocated by a qualified biologist. The above measures do not apply for vehicular transit on permanent or temporary access roads, which does not require area searches or exclusionary fencing.
Adherence to Wildlife Timing Windows During Rock Blasting, Trenching, Sawing, or Hammering (Reptile Hibernacula)**	Within 120m of the following SWH: SNH-006	<ul style="list-style-type: none"> Schedule rock blasting, trenching, sawing, or hammering to occur outside of the snake hibernation period (September 15th – May 15th). 	<ul style="list-style-type: none"> To avoid disturbance to hibernating snakes. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction phase. 	<ul style="list-style-type: none"> If a snake is identified outside of the snake hibernation period (September 15th – May 15th) where rock blasting, trenching, sawing, or hammering is proposed, including during habitat removal, the area will be protected and no construction activities will occur until the snake can be relocated by a qualified biologist.
Adherence to Wildlife Timing Windows (Turtle Wintering Area)	Within 30m of or overlapping the following SWH: TWA-001*	<ul style="list-style-type: none"> No below-grade construction or decommissioning activities will occur within the habitat during the turtle overwintering period (October 15th – April 15th). Schedule above-grade construction and decommissioning activities within the habitat, or any activity within 30m of the habitat, to occur outside of the turtle overwintering period (October 15th – April 15th), unless determined that no direct impact 	<ul style="list-style-type: none"> To minimize disturbance to overwintering turtles. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. Regular biological monitoring of overwintering turtles is required if construction and/or decommissioning activities will occur during the peak turtle wintering season. 	<ul style="list-style-type: none"> If permissible activities must occur during the turtle overwintering season (October 15th – April 15th), daily construction monitoring will be required to ensure all activities occur above-grade such that potential impacts to hibernating turtles are avoided. If a turtle is identified where construction or decommissioning activities are proposed, the area will be

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		to the species or its habitat is expected.			protected and no construction activities will occur until the turtle can be relocated by a qualified biologist. <ul style="list-style-type: none"> The above measures do not apply for vehicular transit on permanent or temporary access roads, which does not require area searches or exclusionary fencing.
Adherence to Wildlife Timing Windows (Waterfowl Stopover and Staging Area)	Within 30m of or overlapping the following SWH: WSA-001	<ul style="list-style-type: none"> Schedule construction and decommissioning activities within the habitat to occur outside of the most important period for staging waterfowl (March 1st – April 30th) to avoid direct impacts or disturbance to staging waterfowl. Schedule construction and decommissioning activities within 30m of the habitat to occur outside of the waterfowl staging period (March 1st – April 30th), unless determined that no direct impact to the species or its habitat is expected. Schedule construction or decommissioning activities during daylight hours to limit potential impacts from light, noise, or vehicle interactions, unless determined that no direct impact to the species or its habitat is expected. 	<ul style="list-style-type: none"> To minimize disturbance, displacement, and mortality to staging waterfowl. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. Regular biological monitoring of staging waterfowl is required if construction and/or decommissioning activities will occur during the peak stopover and staging season. 	<ul style="list-style-type: none"> If construction or decommissioning activities within 30m of the habitat must occur during the peak waterfowl staging season, have a biologist confirm birds will not be impacted by construction or decommissioning activities.
Delineation of Work Area	Within 30m of or overlapping any of the following: WOD-002, 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017,	<ul style="list-style-type: none"> Clearly delineate work area using erosion fencing or other suitable barrier to avoid accidental damage or removal of retained species. The on-site environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is 	<ul style="list-style-type: none"> To avoid accidental damage or removal of vegetation within significant woodlands, SWHs, and Generalized SWHs. To minimize potential risk associated with any 	<ul style="list-style-type: none"> Undertake regular monitoring of the dripline within 10m of construction activities for the duration of the construction and decommissioning phases of this Project. This monitoring will be conducted at a minimum 	<ul style="list-style-type: none"> Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques. Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
	018, 019, 020, WSA-001 , BMA-001* , 002, 003*, TWA-001* , SNH-006 , ALV-001* , 002*, SAV-001* , TGP-001* , 002*, AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001* , CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*, EAWP-001* , 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001* , 002*, 003, 004*, 005*, MUWE-001* , 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001* , 002*, 003*, 004*, 005*, 006*, Generalized SWHs	<p>determined that there is no apparent risk to significant woodlands, SWHs, or Generalized SWHs. This could include instances where the significant features are at a higher elevation than the occurring construction activity.</p> <ul style="list-style-type: none"> The on-site environmental monitor will be a contractor with experience providing environmental recommendations on a large-scale construction site. Erect erosion fencing, or other barrier, to correspond to the disturbance area limits. Place the erosion fencing, or other barrier, as far away as practicable from the feature or SWH, and no closer than the dripline. Locate all directional drill entry and exit pits a sufficient distance from the edge of significant natural features, SWHs, and Generalized SWHs, to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. This shall include a minimum setback for entry and exit pits of 30m from the bank of the South Nation River, and will not occur within any significant feature or core Significant Wildlife Habitat. 	potential direction drilling activities	<p>frequency of once per week when construction is anticipated within 10m of a significant woodland, SWH, or Generalized SWH.</p> <ul style="list-style-type: none"> Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant woodlands, SWHs, or Generalized SWHs, at a minimum frequency of once per month. 	<p>extent of damage incurred.</p> <ul style="list-style-type: none"> If accidental damage occurs to any Significant Feature or Significant Wildlife Habitat, the extent of damage will be reviewed and, where appropriate, a Rehabilitation Plan will be developed and implemented.
Herbicide Avoidance	<p>Within 30m of or overlapping any of the following:</p> <p>WOD-002, 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049,</p>	<ul style="list-style-type: none"> Avoid the use of herbicides (Project related activities only). 	<ul style="list-style-type: none"> To minimize potential impacts to natural vegetation species in significant woodlands/wetlands, SWHs, and Generalized SWHs. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> No contingency plan required.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
	051, 053, 054, 055, WET-001 , 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, WSA-001 , BMA-001* , 002, 003*, TWA-001* , SNH-006 , SAV-001* , TGP-001* , 002*, ALV-001* , 002, AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001* , CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*, EAWP-001* , 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001* , 002*, 003, 004*, 005*, MUWE-001* , 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001* , 002*, 003*, 004*, 005*, 006*				
Implement Proper Arboricultural Techniques	Overlapping any of the following: WOD-005 , 009, 014, 020, 021, 031, 038, 044, 046, 047, 048, 053, 054, WSA-001 , ALV-001* , 002*, SAV-001* , EAWP-007* , 012, 015*	<ul style="list-style-type: none"> Complete tree removal or pruning using proper arboricultural techniques. 	<ul style="list-style-type: none"> To minimize potential impacts to retained trees within significant woodlands and wildlife habitats. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. Depending on the amount of vegetation removal proposed and proximity to trees to be retained outside of public road allowances, the on-site environmental monitor may recommend monitoring by a Certified Arborist during tree removal or pruning. 	<ul style="list-style-type: none"> Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques. Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the extent of damage incurred.
Minimization of Erosion and Sedimentation	Within 30m of or overlapping the following: WOD-002 , 005, 006, 007,	<ul style="list-style-type: none"> Develop and implement an erosion and sediment control (ESC) plan. 	<ul style="list-style-type: none"> To minimize potential impacts associated with 	<ul style="list-style-type: none"> Undertake regular monitoring and routine inspections to ensure 	<ul style="list-style-type: none"> If deficiencies in sediment and erosion control measures are noted, the on-site

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
	009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, TWA-001* , SNH-006, ALV-001*, 002*, SAV-001*, TGP-001*, 002*, AWO-001*, 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001*, CONI-001*, 002*, 003*, 004*, 005*, 006*, 008*, 009*, MUWE-001*, 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001*, 002*, 003*, 004*, 005*, 006*, Generalized SWHs	<ul style="list-style-type: none"> • Install, monitor, and maintain ESC measures (i.e. erosion fencing) around the Project Location for the duration of the construction or decommissioning activities, as identified within the ESC plan. • Erect erosion fencing, or other barrier, to correspond to the construction disturbance area limits. • Place the erosion fencing, or other barrier, as far away as practicable from the identified feature(s), and no closer than the dripline. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the on-site environmental monitor may consider substituting other styles of fencing, when appropriate. • Utilize erosion blankets, silt fencing, straw bales, etc. for construction. • Store any stockpiled material more than 30m from significant natural features, SWHs, and Generalized SWHs throughout the construction and decommissioning phases. • Schedule grading to avoid times of high runoff volumes, whenever reasonable. Re-vegetate areas adjacent to the feature(s) as soon as practicable after construction activities are complete. • Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal. 	erosion and sedimentation in significant natural features, SWHs, and Generalized SWHs.	proper installation of erosion control measures are in place. <ul style="list-style-type: none"> • Monitor sediment and erosion control measures, such as erosion fencing, and check dams daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. 	environmental monitor will notify the general contractor and the Proponent and recommend remedial actions. <ul style="list-style-type: none"> • Silt fencing, or other applicable sediment and erosion control measures, that is not working properly will be corrected. • If sedimentation and erosion control measures fail or/and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas, depending on the extent of degradation incurred.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		<ul style="list-style-type: none"> Restore and re-vegetate, directional drill entry/exit pits to pre-construction conditions as soon as practicable after construction. 			
Minimization of Fugitive Dust Emission	<p>Within 30m of or overlapping the following: WOD-002, 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, BMA-001*, 002, 003*, SNH-006, ALV-001*, 002*, SAV-001*, TGP-001*, 002*, AWO-001*, 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001*, CONI-001*, 002*, 003*, 004*, 005*, 006*, 008*, 009*, EAWP-001*, 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001*, 002*, 003, 004*, 005*, MUWE-001*, 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001*, 002*, 003*, 004*, 005*, 006*, Generalized SWHs</p>	<ul style="list-style-type: none"> On-site speed limits will be clearly posted, applied, and followed by construction staff. Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the on-site environmental monitor and the general contractor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Re-vegetate cleared areas as soon as reasonably practicable after construction activities are complete. Install wind fences, where determined to be necessary by the on-site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. 	<ul style="list-style-type: none"> To minimize fugitive dust within significant natural features, SWHs, and Generalized SWHs. 	<ul style="list-style-type: none"> Undertake regular monitoring and routine inspections to ensure proper fugitive dust control measures are in place. Monitor dust control measures at a minimum frequency of weekly in areas where work is taking place. Monitor dust control measures at a minimum frequency of monthly in areas where active construction is not occurring until the construction phase is complete. 	<ul style="list-style-type: none"> If fugitive dust is noted, the on-site environmental monitor will notify the general contractor and the Proponent and recommend remedial actions, if necessary. If fugitive dust control measures fail and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.
Minimization of Fugitive Dust and Debris Emission from Blasting**	<p>Within 120m of or overlapping the following: WOD-009, WET-004, OCB-001*, CONI-001*, EAWP-003*, MUWE-001*, MONA-001*.</p>	<ul style="list-style-type: none"> Use blasting mats to contain debris and spray the surface of the blast site with water to reduce the amount of dust emitted. 	<ul style="list-style-type: none"> To minimize fugitive dust and debris within significant natural features and SWHs. 	<ul style="list-style-type: none"> Monitor to ensure proper fugitive dust and debris control measures for blasting are in place and functioning as intended for all blasting activities. 	<ul style="list-style-type: none"> If fugitive dust or debris is noted, the on-site environmental monitor will notify the general contractor and the Proponent and recommend remedial actions, if necessary. If fugitive dust and debris

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
					control measures fail and degradation of the natural feature occurs, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.
Minimization of Impacts to Flood Attenuation	Within 30m of any of the following: WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020	<ul style="list-style-type: none"> Clearly delineate work area using erosion fencing, or other barrier, to minimize potential impacts to hydrological connectivity from loss of riparian vegetation. Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the on-site environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. Where the temporary construction area is proposed to be within 5m of, but not overlapping by a method other than directional drilling, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e., access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge as soon as reasonably practicable after construction. Re-vegetate cleared areas as soon as reasonably practicable after construction activities are 	<ul style="list-style-type: none"> To minimize direct impacts on vegetation communities and protect significant wetlands. To minimize impacts to hydrological connectivity of significant wetlands. 	<ul style="list-style-type: none"> Undertake regular monitoring of the identified feature(s) to ensure the work area is clearly delineated for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when activities are occurring within 10m of a feature. Undertake regular monitoring of the feature to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of the features, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will 	<ul style="list-style-type: none"> No contingency plan required.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		complete.		be increased at the discretion of the on-site environmental monitor.	
Minimization of Impacts to Groundwater Discharge	<p>Within 30m of any of the following: WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, Generalized SWHs</p>	<ul style="list-style-type: none"> • Monitor rate of water pumping and timing to meet requirement of less than 50,000L per day, or if water taking up to 400,000L per day is required, complete registration for the water taking on the MOECC's Environmental Activity and Sector Registry (EASR). If the Project encounters extraordinary conditions (i.e. an infrequent storm event) that necessitate additional water takings (i.e. construction dewatering) beyond 400,000 L/day per foundation site, contact the local MOECC District Office for consulted on direction on how to address the situation to allow the Project to proceed in a timely manner while maintaining environmental protection. • Restrict taking of groundwater and surface water during extreme low flow time periods. • Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands, SWHs, and Generalized SWHs. 	<ul style="list-style-type: none"> • To minimize direct impacts on significant wetlands and Generalized SWHs. 	<ul style="list-style-type: none"> • Undertake regular monitoring of significant wetlands and Generalized SWHs to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland or Generalized SWH. • Undertake regular monitoring of significant wetlands and Generalized SWHs to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of the features, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the on-site environmental monitor. 	<ul style="list-style-type: none"> • If impacts to groundwater discharge occur as a result of construction activities, the MNRF will be notified of appropriate contingency measures that will be implemented.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
Minimization of Impacts to Infiltration	Within 30m of any of the following: WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, Generalized SWHs	<ul style="list-style-type: none"> Minimize the use of impervious surfaces where practicable, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff. 	<ul style="list-style-type: none"> To minimize impacts to infiltration within significant wetlands and Generalized SWHs. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> No contingency plan required.
Minimization of Impacts to Soil Moisture	Within 30m of or overlapping any of the following: WOD-002, 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, ALV-001*, 002*, SAV-001*, TGP-001*, 002*, AWO-001*, 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, MUWE-001*, 002*, 003*, 004*, 005*, 007*, 009*, 010*, Generalized SWHs	<ul style="list-style-type: none"> Minimize the use of impervious surfaces where practicable, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff. Minimize paved surfaces and design roads to promote infiltration. 	<ul style="list-style-type: none"> To minimize impacts to soil moisture regime and vegetation species composition within significant natural features, SWHs, and Generalized SWHs. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> No contingency plan required.
Minimization of Impacts to Water Quality	Within 30m of any of the following: WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, WSA-001	<ul style="list-style-type: none"> Clearly delineate work area using erosion fencing, or other barrier, to minimize potential impacts to water quality which may result from accidental loss of riparian vegetation. Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the on-site environmental monitor and general contractor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. On site speed limits will be 	<ul style="list-style-type: none"> To minimize impacts to water quality (i.e. associated with increased turbidity) within significant wetlands. 	<ul style="list-style-type: none"> Undertake regular monitoring of significant wetlands to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of the Project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland. Undertake regular 	<ul style="list-style-type: none"> If reduced water quality (i.e. increased turbidity) as a result of construction activities is observed, the MNRF will be notified of appropriate contingency measures that will be implemented.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		<p>clearly posted, applied, and followed by construction staff.</p> <ul style="list-style-type: none"> • Re-vegetate areas adjacent to significant wetlands as soon as practicable after construction activities are complete. • Install wind fences, where determined to be necessary by the on-site environmental monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. • No use of herbicides (Project related activities only) within significant wetlands. 		<p>monitoring of significant wetlands to ensure the work area is clearly delineated and respected when construction is anticipated to occur within 10-30m of significant wetlands, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the on-site environmental monitor.</p>	
<p>Minimization of Invasive Seed Transfer</p>	<p>Within 30m of any of the following: ALV-001*, 002*, SAV-001*, TGP-001*, 002*, MUWE-001*, 002*, 003*, 004*, 005*, 007*, 009*, 010*</p>	<ul style="list-style-type: none"> • Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat. • All vehicles and equipment that are required for the establishment of access roads, or otherwise not using established access roads within these habitats will be cleaned, at a minimum, prior to each time it enters the habitat. Once access roads are established and utilized, regular vehicle cleaning is recommended but not required. • Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated. 	<ul style="list-style-type: none"> • To minimize impacts to sensitive habitats. • To maintain vegetated buffers, including riparian zones. 	<ul style="list-style-type: none"> • Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> • No contingency plan required.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
Minimization of Soil Compaction	Within 30m of any of the following: WOD-005, 009, 014, 020, 021, 031, 038, 044, 046, 047, 048, 053, 054, ALV-001*, 002*, SAV-001*, TGP-001*, 002*, AWO-001*, 012*, 014*, 015*, 016*, 018, 022*, MUWE-001*, 002*, 003*, 004*, 005*, 007*, 009*, 010*	<ul style="list-style-type: none"> Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and topsoil removal. Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or other barrier. 	<ul style="list-style-type: none"> To minimize soil compaction within significant natural features, and SHWs. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur during the construction and decommissioning phase. 	<ul style="list-style-type: none"> No contingency plan required.
Minimization of Spills	Within 30m of or overlapping the following: WOD-002, 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, WSA-001, TWA-001*, SNH-006, ALV-001*, 002*, SAV-001*, TGP-001*, 002*, AWO-001*, 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001*, CONI-001*, 002*, 003*, 004*, 005*, 006*, 008*, 009*, MUWE-001*, 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001*, 002*, 003*, 004*, 005*, 006*, Generalized SWHs	<ul style="list-style-type: none"> Develop a spill response plan and train staff on appropriate procedures. Develop a 'frac-out' contingency plan and train staff on appropriate procedures during the construction phase. Keep emergency spill kits on site. Keep contact information for the MOECC Spills Action Centre in a designated area on-site. Dispose of waste material by authorized and approved off-site vendors. Store hazardous materials in designated areas. Locate all vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from applicable feature(s). 	<ul style="list-style-type: none"> To minimize spills within 30m of significant natural features, SWHs, and Generalized SWHs. 	<ul style="list-style-type: none"> Regular environmental monitoring will occur at least once every 2 weeks during the construction and decommissioning phase to ensure vehicle refueling and storage of chemicals is occurring more than 30m from the applicable features. An on-site environmental monitor will be present when active directional drilling is occurring within 30m of significant natural features, SWHs, and Generalized SWHs. 	<ul style="list-style-type: none"> If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. In the event of a spill, notify the MOECC Spills Action Centre as required by O. Reg. 675/98, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events. If a spill occurs within a significant natural feature, SWH, or Generalized SWH, the on-site environmental monitor will be notified and a follow-up site inspection will be conducted to document extent of degradation of the features, if any. If degradation of significant natural features, SWHs, or Generalized SWHs occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
Posting of On-site Speed Limits	<p>Access roads within 30m of or overlapping any of the following:</p> <p>WOD-002, 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001, 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, BMA-001*, 002, 003*, TWA-001*, AWO-001*, 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001*, CONI-001*, 002*, 003*, 004*, 005*, 006*, 008*, 009*, EAWP-001*, 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001*, 002*, 003, 004*, 005*, MONA-001*, 002*, 003*, 004*, 005*, 006*, Generalized SWHs</p>	<ul style="list-style-type: none"> On-site speed limits will be clearly posted, applied, and followed by construction staff throughout the construction and decommissioning phases. 	<ul style="list-style-type: none"> To minimize disturbance, displacement, and mortality to wildlife. 	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> No contingency plan required.
Remediation of Disturbed Habitat	<p>Overlapping any of the following:</p> <p>CONI-002*, 003*, 004*, 006*, MONA-002*, 003*, 004*, 006*</p>	<ul style="list-style-type: none"> Re-vegetate disturbed areas of significant wildlife habitats as soon as practicable after construction activities are complete using an appropriate native plant species composition for the habitat type. Plant species or seed selection will be based on preferred vegetation associations for the target species, if any. Other artificial enhancement approaches should be considered within the habitat, if feasible, such as artificial creation of bare nesting surfaces 	<ul style="list-style-type: none"> To minimize disturbance and displacement to wildlife. To remediate disturbed areas for vegetation species of conservation concern. 	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> No contingency plan required.

Mitigation Measure	Applicable Features(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		for CONI features.			
Transplanting of Individuals	Overlapping any of the following: MUWE-002* , 003*, 004*, 005*	<ul style="list-style-type: none"> • Prior to any localized construction activity, all observed individuals of this species within the construction footprint will be transplanted to similar habitats within the same habitat. • During transplanting, a vegetation expert, with specialization in mosses, will be consulted to ensure the transplanting approach is suitable for this species. 	<ul style="list-style-type: none"> • To avoid loss of individual vegetation species of conservation concern. 	<ul style="list-style-type: none"> • Area of transplantation will be monitored in Years 1, 3, and 5 following the transplanting activities. 	<ul style="list-style-type: none"> • If transplanting is determined to be unsuccessful, habitat enhancement activities will be undertaken within the habitat to promote the growth of other existing individuals. • A vegetation expert, with specialization in mosses, will be consulted to determine an appropriate approach to habitat enhancement for this species.

* Only if these habitats are determined to be significant through pre-construction surveys described in Section 6.1.

** Mitigation measure is only applicable during the construction phase of the Project.

6.3 Operational Phase Commitments

The sections above have listed several mitigation measures that are recommended to limit potential impacts to significant natural features or wildlife habitats during the operation of the Project. The specific details of these proposed mitigation measures, as well as the associated performance objectives, monitoring commitments, and contingency plans are provided in Table 9, along with the location(s) where each of the mitigation measure(s) and associated performance objectives, monitoring commitments, and contingency plans apply (dependent on the SWH type and distance to the Project Location).

The table below consolidates the operational mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the NHA process. These proposed mitigation measures, along with other proposed mitigation measures not associated with natural heritage, have been included in the Draft *Nation Rise Wind Farm Design and Operations Report* (DNV-GL 2017b).

Table 9. Detailed Mitigation Measures, Performance Objectives, Monitoring Commitments, and Contingency Plans Recommended During the Operational Phase of the Project

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
Adherence of Wildlife Timing Windows (Amphibian Breeding Habitat)	Within 30m of the following SWH: AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities occur within 30m of significant amphibian habitats during the peak amphibian breeding season (April 15th-June 15th; to July 15th if American bullfrog is present), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances, whenever reasonable. If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to amphibians. 	To minimize the potential disturbance and displacement of breeding amphibians.	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> If regular Project maintenance activities within 30m of significant amphibian breeding habitats must occur outside of daylight hours, spotlights will be directed downwards and/or away from the woodland to limit potential impacts to breeding amphibians.
Adherence to Wildlife Timing Windows (Bat Maternity Colony)	Within 30m of the following SWH: BMA-001* , 002, 003*	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities occur within 30m of significant bat habitats during the critical roosting period (June 1st – June 30th), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, whenever reasonable. 	To minimize the potential disturbance and displacement of roosting bats.	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to bats.
Adherence of Wildlife Timing Windows (Butterfly Species of Conservation Concern Habitats)	Within 30m of the following SWH: MONA-001* , 002*, 003*, 004*, 005*, 006*	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities occur within 30m of significant butterfly habitats during the flight season (May 1st– September 30th), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, whenever reasonable. 	<p>To minimize the potential disturbance and displacement of butterflies within significant butterfly species of conservation concern habitats.</p> <p>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime</p>	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to butterflies.

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
			disturbances.		
Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Crepuscular Species)	Within 30m of or overlapping any of the following: CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities within 30m of significant bird SCC habitats occur during the breeding bird period (May 1st – July 31st), schedule these activities to occur during daylight hours to increase visibility and to avoid light pollution effects during the night. 	<p>To minimize the potential disturbance, displacement, and/or mortality to birds that might be breeding within these habitats.</p> <p>To minimize impacts on species that are active at night.</p>	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to bird species of conservation concern.
Adherence to Wildlife Timing Windows (Bird Species of Conservation Concern Habitats – Diurnal Species)	Within 30m of or overlapping any of the following: EAWP-001* , 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001* , 002*, 003, 004*, 005*	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities within 30m of significant bird SCC habitats occur during the breeding bird period (May 1st – July 31st), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, whenever reasonable. 	<p>To minimize the potential disturbance and displacement of breeding birds within significant natural features and significant bird species of conservation concern habitats.</p> <p>Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances.</p>	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to bird species of conservation concern.
Adherence to Wildlife Timing Windows (Open Country Bird Breeding Habitat)	Within 30m of or overlapping any of the following: OCB-001*	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities within 30m of significant open country bird breeding habitat occur during the breeding bird period (May 1st – July 31st), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, whenever reasonable. 	<p>To minimize the potential disturbance and displacement of breeding birds within significant natural features and significant open country bird breeding habitats.</p> <p>Minimize impacts on species that are relatively inactive at night and not accustomed to</p>	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to open country breeding birds.

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
			nighttime disturbances.		
Adherence to Wildlife Timing Windows (Waterfowl Stopover and Staging Area)	Within 30m of or overlapping the following SWH: WSA-001	<ul style="list-style-type: none"> If regular (non-critical) Project maintenance activities occur within 30m of waterfowl stopover and staging habitat during the most important period for staging waterfowl (March 1st – April 30th), schedule these activities to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, whenever reasonable. 	To minimize potential disturbance and displacement of staging waterfowl.	No monitoring required.	<ul style="list-style-type: none"> If Project maintenance activities within 30m of significant wildlife habitats must occur outside of daylight hours, spotlights will be directed downward and/or away from the features to limit potential light disturbance to staging waterfowl.
Develop a Bird and Bat EEMP	Applicable to the following: WSA-001, BMA-001* , 002, 003*, OCB-001* , CONI-001* , 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, EAWP-001* , 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, 010*, 011*, 012, 013*, 014*, 015*, 016*, 017*, 018*, WOTH-001* , 002*, 003, 004*, 005*	<ul style="list-style-type: none"> Develop a Bird and Bat EEMP in accordance with MNR's Birds and Bird Habitats (OMNR 2011a) and Bats and Bat Habitats (OMNR 2011b). Post-construction monitoring will be conducted following the Birds and Bird Habitats (OMNR 2011a) and Bats and Bat Habitats (OMNR 2011b) provincial guidelines for a minimum of 3 years after the Project has become operational. Turbines within 120m of a significant bird or bat habitat will be preferentially chosen as part of the twice-weekly mortality monitoring subset. 	To minimize the potential disturbance, displacement, and/or mortality of bird and bat species as a result of the operation of the Project.	The bird and bat EEMP will outline detailed methodology for conducting post-construction mortality monitoring and disturbance surveys in significant bird and bat habitats.	<ul style="list-style-type: none"> Annual reports which document the results of disturbance and mortality monitoring, will be prepared following each year that monitoring occurs. The reports will be submitted to the MNR and the results presented in these annual reports will be used to determine if any additional mitigation measures should be implemented during the operational phase of this Project.
Develop an Alvar Compensation Plan	Overlapping any of the following: ALV-001*	<ul style="list-style-type: none"> Develop an Alvar Compensation Plan in consultation with an ecologist with specialization in alvar habitat. Compensation activities will include the seeding and/or planting of native alvar species in suitable habitat, long-term management of the habitat to promote establishment of alvar species associations, and long-term monitoring of the habitat to ensure success. The compensation area will be a 	To minimize the potential disturbance and loss of alvar habitat.	The Alvar Compensation Plan will detail any specific monitoring requirements in relation to the compensation area(s).	<ul style="list-style-type: none"> Any required contingency plan will be detailed in the Alvar Compensation Plan.

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		<p>minimum ratio of 1:1 relative to the area removed and will occur, at a minimum, within the same Eco-District (6E) but preferably within the same, or immediately adjacent, County.</p> <ul style="list-style-type: none"> Habitat compensation must be initiated within 1 year of the completion of the construction phase. 			
Develop an Tallgrass Prairie Compensation Plan	Overlapping any of the following: TGP-001*	<ul style="list-style-type: none"> Develop a Tallgrass Prairie Compensation Plan in consultation with an ecologist with specialization in tallgrass prairie habitat. Compensation activities will include the seeding and/or planting of native tallgrass prairie species in suitable habitat, long-term management of the habitat to promote establishment of tallgrass prairie species associations, and long-term monitoring of the habitat to ensure success. The compensation area will be a minimum ratio of 1:1 relative to the area removed and will occur, at a minimum, within the same Eco-District (6E) but preferably within the same, or immediately adjacent, County. Habitat compensation must be initiated within 1 year of the completion of the construction phase. 	To minimize the potential disturbance and loss of tallgrass prairie habitat.	The Tallgrass Prairie Compensation Plan will detail any specific monitoring requirements in relation to the compensation area(s).	<ul style="list-style-type: none"> Any required contingency plan will be detailed in the Tallgrass Prairie Compensation Plan.
Develop an Eastern Wood-Pewee Compensation Plan	Overlapping any of the following: EAWP-007*	<ul style="list-style-type: none"> Develop an Eastern Wood-Pewee Compensation Plan in consultation with an ecologist with specialization in Eastern Wood-Pewee habitat. Compensation activities will include the seeding and/or planting of native trees in suitable habitat, long-term management of the habitat to promote establishment of forested habitat. 	To minimize the potential loss of Eastern Wood-Pewee habitat.	The Eastern Wood-Pewee Compensation Plan will detail any specific monitoring requirements in relation to the compensation area(s).	<ul style="list-style-type: none"> Any required contingency plan will be detailed in the Eastern Wood-Pewee Compensation Plan.

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
		<ul style="list-style-type: none"> The compensation area will be a minimum ratio of 1:1 relative to the area removed and will occur, at a minimum, within the same Eco-District (6E) but preferably within the same, or immediately adjacent, County. Preference should be given to planting and/or seeding the compensation area adjacent to an existing habitat to increase the size of a suitable habitat, rather than creating a small and/or isolated habitat. Habitat compensation must be initiated within 1 year of the completion of the construction phase. 			
Documenting Incidental Mortalities of Butterfly Species of Conservation Concern	Within 120m of or overlapping any of the following: MONA-001* , 002*, 003*, 004*, 005*, 006*	<ul style="list-style-type: none"> Record any incidental butterfly species of conservation concern mortalities observed during the first 3 years of post-construction mortality monitoring occurring for birds and bats (OMNR 2011a, OMNR 2011b). 	To identify the mortality of butterfly species of conservation concern resulting from collisions with operational turbines.	Incidental butterfly species of conservation concern mortalities will be documented concurrently with the post-construction mortality monitoring occurring for birds and bats.	<ul style="list-style-type: none"> If any mortality of a butterfly species of conservation concern is observed during the first 3 years of post-construction mortality monitoring, MNRF will be informed of the occurrence in the annual monitoring report.
Herbicide Avoidance	Within 30m of or overlapping any of the following: WOD-002 , 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001 , 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, WSA-001 , BMA-001* , 002, 003*, TWA-001* , SNH-006 , ALV-001* , 002*, SAV-001* , TGP-001* , 002*, AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*,	<ul style="list-style-type: none"> Avoid the use of herbicides (Project related activities only) within 30m of significant natural features and SWHs. 	To avoid impacts to natural vegetation species, significant natural features and SWHs.	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> No contingency plan required.

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
	016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001* , CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*, EAWP-001* , 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001* , 002*, 003, 004*, 005*, MUWE-001* , 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001* , 002*, 003*, 004*, 005*, 006*				
Implement Proper Arboricultural Techniques	Overlapping any of the following: WOD-005 , 009, 014, 020, 021, 031, 038, 044, 046, 047, 048, 053, 054, WSA-001 , ALV-001* , 002*, SAV-001* , EAWP-012 , 015*	<ul style="list-style-type: none"> Complete tree removal or pruning using proper arboricultural techniques. 	To minimize potential impacts to retained trees within significant woodlands and wildlife habitats.	<ul style="list-style-type: none"> No monitoring required. 	<ul style="list-style-type: none"> Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques. Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species, depending on the extent of damage incurred.
Installation of High Visibility Markers on Overhead Lines	Overlapping any of the following: WSA-001	<ul style="list-style-type: none"> Install high visibility markers on overhead lines installed within significant waterfowl stopover and staging area (aquatic) habitats. 	To minimize the potential disturbance, displacement and mortality of waterfowl.	<ul style="list-style-type: none"> No monitoring plan required. 	<ul style="list-style-type: none"> No contingency plan required.
Minimization of Spills	Within 30m of or overlapping the following: WOD-002 , 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001 , 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, WSA-001 , TWA-001* , SNH-006 , ALV-001* , 002*, SAV-001* , TGP-001* , 002*, AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*,	<ul style="list-style-type: none"> Develop a spill response plan and train staff on appropriate procedures. Keep emergency spill kits on site. Keep contact information for the MOECC Spills Action Centre in a designated area on-site. Dispose of waste material by authorized and approved off-site vendors. Store hazardous materials in designated areas. Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemicals and 	To minimize spills within 30m of significant natural features and SWHs.	<ul style="list-style-type: none"> No monitoring plan required. 	<ul style="list-style-type: none"> In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events. If degradation of a significant natural feature or SWH occurs as a result of the spill, appropriate contingency measures will be implemented, which may include re-establishing

Mitigation Measure	Applicable Feature(s)	Details of Proposed Mitigation Measure	Performance Objective(s)	Monitoring Commitment(s)	Contingency Plan(s)
	012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001* , CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*, MUWE-001* , 002*, 003*, 004*, 005*, 007*, 009*, 010*, MONA-001* , 002*, 003*, 004*, 005*, 006*	heavy equipment more than 30m from significant natural features and SWHs.			mitigation measures, habitat remediation, and/or seeding of permanently damaged areas depending on the extent of degradation incurred.
Posting of On-site Speed Limits	Access roads within 30m of or overlapping any of the following: WOD-002 , 005, 006, 007, 009, 012, 014, 017, 020, 021, 031, 038, 042, 043, 044, 046, 047, 048, 049, 051, 053, 054, 055, WET-001 , 002, 003, 004, 008, 009, 011, 013, 016, 017, 018, 019, 020, BMA-001* , 002, 003*, AWO-001* , 004*, 006*, 007*, 008*, 010*, 011*, 012*, 013*, 014*, 015*, 016*, 017*, 018, 019*, 020*, 022*, 023*, 024*, OCB-001* , CONI-001* , 002*, 003*, 004*, 005*, 006*, 008*, 009*, EAWP-001* , 005*, 006*, 007*, 008*, 009*, 011*, 012, 013*, 015*, 016*, 017*, 018*, WOTH-001* , 002*, 003, 004*, 005*, MONA-001* , 002*, 003*, 004*, 005*, 006*	<ul style="list-style-type: none"> On-site speed limits will be clearly posted, applied, and followed by all staff throughout the operational phase. 	To minimize the potential disturbance, displacement, and/or mortality of wildlife.	<ul style="list-style-type: none"> No monitoring plan required. 	<ul style="list-style-type: none"> No contingency plan required.

* Only if these habitats are determined to be significant through pre-construction surveys described in Section 6.1.

6.4 Post-Construction Monitoring Commitments

In accordance with appropriate provincial guidance and the commitments made as part of this report, several post-construction surveys are required at the Project. These post-construction monitoring commitments are outlined in Table 10 below.

Table 10. Summary of Post-Construction Monitoring Commitments for the Project

Survey Type	Location(s)	Generalized Methods*	Purpose
Mortality Monitoring	Entire Project	<p>Post-construction mortality monitoring will be conducted following both the <i>Birds and Bird Habitats</i> (OMNR 2011a) and <i>Bats and Bat Habitats</i> (OMNR 2011b) provincial guidelines for 3 years after the Project has become operational.</p> <p>Detailed bird and bat mortality monitoring methods will be addressed in the Bird and Bat EEMP, which will be prepared under separate cover and submitted to MNRF for approval.</p> <p>The selection of the bird and bat mortality monitoring turbine sub-sample will be finalized following the completion of all pre-construction bird and bat surveys to confirm the significance of wildlife habitat. At that time, turbine selections will follow provincially accepted methods and will preferentially include turbines that are within 120m of any bird or bat habitat that has either been treated as significant or confirmed significant when compared to provincial standards of significance.</p>	<p>To assess the direct impact of this facility on birds and bats.</p> <p>If mortality rates surpass provincially determined thresholds, mitigation measures will be discussed with the MNRF.</p>
Waterfowl Stopover and Staging Area (Aquatic) Surveys	WSA-001	<p>Post-construction waterfowl stopover and staging area surveys will be repeated at this habitat that is overlapped by Project Infrastructure for 3 years (if overhead collection lines are installed in the habitat) or for 1 year (if only underground collection lines are installed in the habitat), following the same methods utilized for pre-construction surveys. Detailed survey methods should be conducted as outlined within the Bird and Bat EEMP, which are consistent with the pre-construction surveys as described within the <i>Nation Rise Wind Farm Natural Heritage Evaluation of Significance Report</i> (NRSI 2017a).</p>	<p>To assess the potential disturbance impact of overlapping Project Infrastructure on significant waterfowl stopover and staging area (aquatic) habitat.</p>
Bat Maternity Colony Surveys	BMA-001* BMA-003*	<p>Post-construction bat exit surveys will be repeated at the significant habitats located within 120m of a wind turbine for 3 years following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7.</p>	<p>To assess the potential disturbance impact of wind turbines on significant bat maternity colony habitat.</p>
Turtle Wintering Area Surveys	TWA-001*	<p>Post-construction turtle emergence and basking surveys will be repeated at this habitat proposed to be indirectly overlapped by</p>	<p>To assess the potential disturbance impact of indirect</p>

Survey Type	Location(s)	Generalized Methods ^z	Purpose
		Project Infrastructure for 1 year following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7. After presenting results to the MNRF, the need for additional surveys will be addressed.	overlap on the significant turtle wintering area.
Alvar Surveys	ALV-001* ALV-002*	Post-construction alvar vegetation surveys will be repeated at the 2 habitats located within 30m of an access road in years 1, 3, and 5 of operation. For detailed survey methods, see Table 7.	To assess the potential disturbance impact of access roads on significant alvar habitats.
Savannah Surveys	SAV-001*	Post-construction savannah vegetation surveys will be repeated at the habitat overlapping the proposed cabling route in years 1, 3, and 5 of operation. For detailed survey methods, see Table 7.	To assess the potential disturbance impact of cabling on significant savannah habitats.
Tallgrass Prairie Surveys	TGP-001* TGP-002*	Post-construction tallgrass prairie vegetation surveys will be repeated at the 2 habitats located within 30m of a proposed access road and/or cabling route in years 1, 3, and 5 of operation. For detailed survey methods, see Table 7.	To assess the potential disturbance impact of access roads and/or cabling on significant tallgrass prairie habitats.
Amphibian Breeding Habitat (Woodland) Surveys	AWO-001* AWO-004* AWO-006* AWO-007* AWO-008* AWO-010* AWO-011* AWO-012* AWO-013* AWO-014* AWO-015* AWO-016* AWO-017* AWO-018 AWO-019* AWO-020* AWO-022* AWO-023* AWO-024*	Post-construction amphibian call surveys and egg mass surveys will be repeated at the habitats located within 30m of an access road for 1 year following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7. After presenting results to the MNRF, the need for additional surveys will be addressed.	To assess the potential disturbance impact of access roads on significant amphibian breeding habitat (woodland).
Open Country Bird Breeding Surveys	OCB-001*	Post-construction open country breeding bird surveys will be repeated at the significant habitat within 120m of a wind turbine for 3 years following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7.	To assess the potential disturbance impact of wind turbines on significant open country bird breeding habitat.
Bird Species of Conservation Concern Surveys: • Common Nighthawk • Eastern Wood-Pewee Habitat • Wood Thrush Habitat	CONI-001* CONI-002* CONI-003* CONI-004* CONI-005* CONI-006* CONI-007* CONI-008* CONI-009* EAWP-001* EAWP-002* EAWP-003*	Post-construction bird species of conservation concern monitoring will be repeated at all significant habitats within 120m of a wind turbine for 3 years following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7.	To assess the potential disturbance impact of wind turbines on significant habitats for bird species of conservation concern.

Survey Type	Location(s)	Generalized Methods [‡]	Purpose
	EAWP-004* EAWP-005* EAWP-006* EAWP-007* EAWP-008* EAWP-009* EAWP-010* EAWP-011* EAWP-013* EAWP-014* EAWP-015* EAWP-016* EAWP-017* EAWP-018* WOTH-001* WOTH-002* WOTH-004* WOTH-005*		
Vegetation Species of Conservation Concern Surveys: • Mühlenberg's weissia	MUWE-001* MUWE-002* MUWE-003* MUWE-004* MUWE-005* MUWE-007* MUWE-009* MUWE-010*	<p>Post-construction monitoring for vegetation species of conservation concern will be repeated at all significant habitats located within 30m of an access road, or overlapping any project infrastructure or proposed activities, and where access is granted in years 1, 3, and 5 of operation. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, which is during the period of February to mid-June and following pre-construction survey methods.</p> <p>Any areas where transplanting of individuals has occurred will also be monitored in years 1, 3, and 5 following the transplantation, and pending site access. These surveys will occur when this species exhibits characteristics that allow for confident identification, which is during the period of February to mid-June.</p> <p>Specific locations of vegetation species of conservation identified during pre-construction surveys will also be monitored post-construction.</p>	To assess the potential disturbance impact of access roads or overlapping features on significant habitats for vegetation species of conservation concern.
Insect Species of Conservation Concern Surveys: • Monarch	MONA-001* MONA-002* MONA-003* MONA-004* MONA-005* MONA-006*	<p>Post-construction butterfly surveys will be repeated at any of the significant habitats that is overlapped by Project Infrastructure or within 120m of wind turbines for 1 year following the same methods utilized during pre-construction surveys. For detailed survey methods, see Table 7.</p>	To assess the potential disturbance impact of overlapping Project Infrastructure and wind turbines on significant habitat for butterfly species of conservation concern.

[‡] If site access is denied to conduct post-construction surveys, and an alternative survey method will not provide enough information to re-evaluate the significance of the wildlife habitat, post-construction monitoring will not be conducted. This is applicable to all survey types, excluding post-construction mortality monitoring.

* These surveys are only required if the habitat is determined to be significant through pre-construction surveys described in Section 6.1.

7.0 Environmental Impact Summary

A total of 34 proposed turbine locations will be permitted for the Project, including the installation of supporting infrastructure, such as temporary staging and laydown areas, crane pads, access roads, electrical collector lines, substation, and meteorological towers. Through a comprehensive review of background material in conjunction with site-specific investigations and evaluation of significance surveys, NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the Project Area.

As part of this EIS, NRSI biologists have recommended a series of mitigation measures, monitoring commitments, and contingency plans to be implemented as part of the development of this Project. These recommendations have been developed in association with the specific natural features and wildlife habitats that have been identified within the Project Area. The proposed mitigation measures, monitoring commitments, and contingency plans outlined in Section 5 and Section 6 will also be provided in the Draft *Nation Rise Wind Farm Construction Plan Report* (DNV-GL 2017a), Draft *Nation Rise Wind Farm Design and Operations Report* (DNV-GL 2017b), and Draft *Nation Rise Wind Farm Decommissioning Plan Report* (DNV-GL 2017c) to address potential negative environmental effects of the Project on natural features, as well as in the Bird and Bat EEMP, with respect to birds and bats.

Assuming the implementation of the proposed mitigation measures, monitoring programs, and contingency plans (if necessary), there is unlikely to be any significant impacts to natural heritage features, including woodlands, wetlands, and SWH.

8.0 References

Publications

DNV-GL. 2017a. Nation Rise Wind Farm, Draft Construction Plan Report. March 2017.

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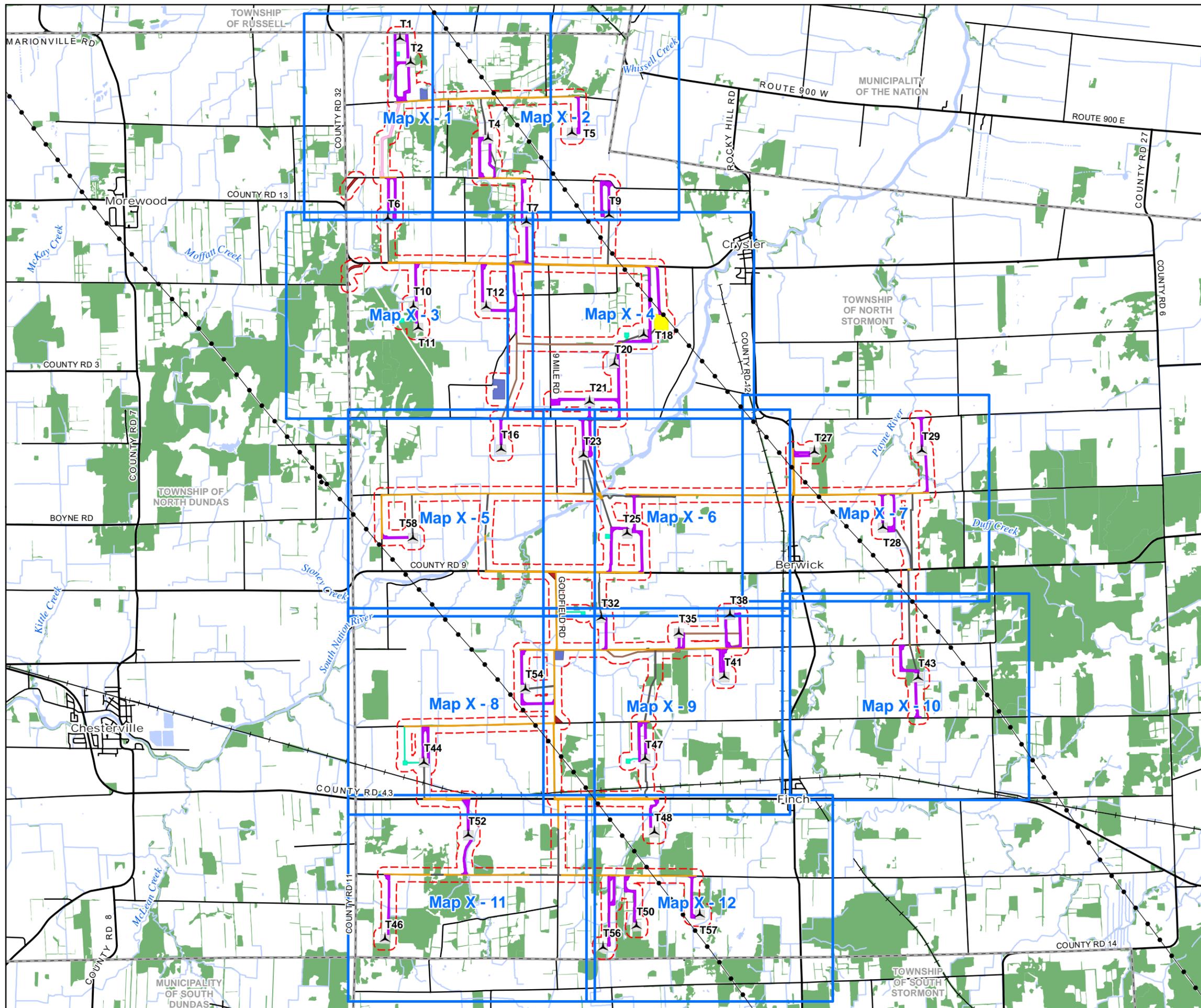
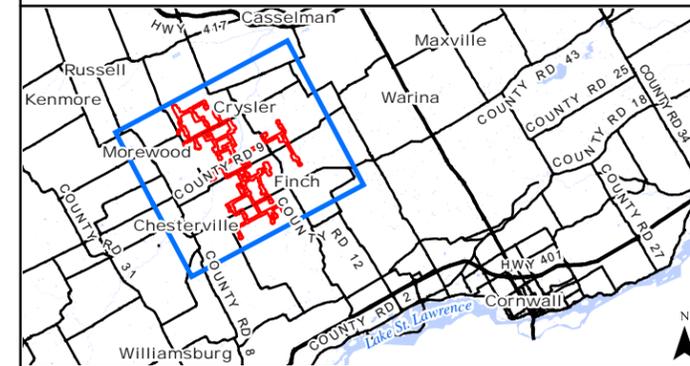
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Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. October 2000.

Map 1
Key Map

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)
- 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



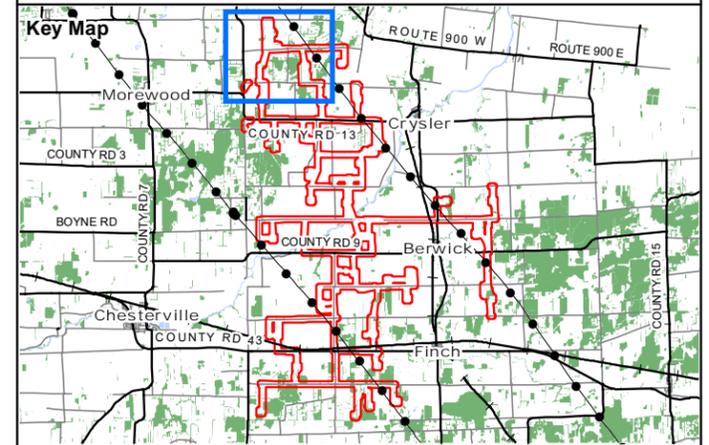
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Project: 1756 Date: April 6, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:68,000

Maps 2-1 to 2-12
Significant Woodlands and Wetlands

Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Significant Natural Features

- Woodland (WOD)
- Treated As Significant Natural Features***
- Wetland (WET)

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

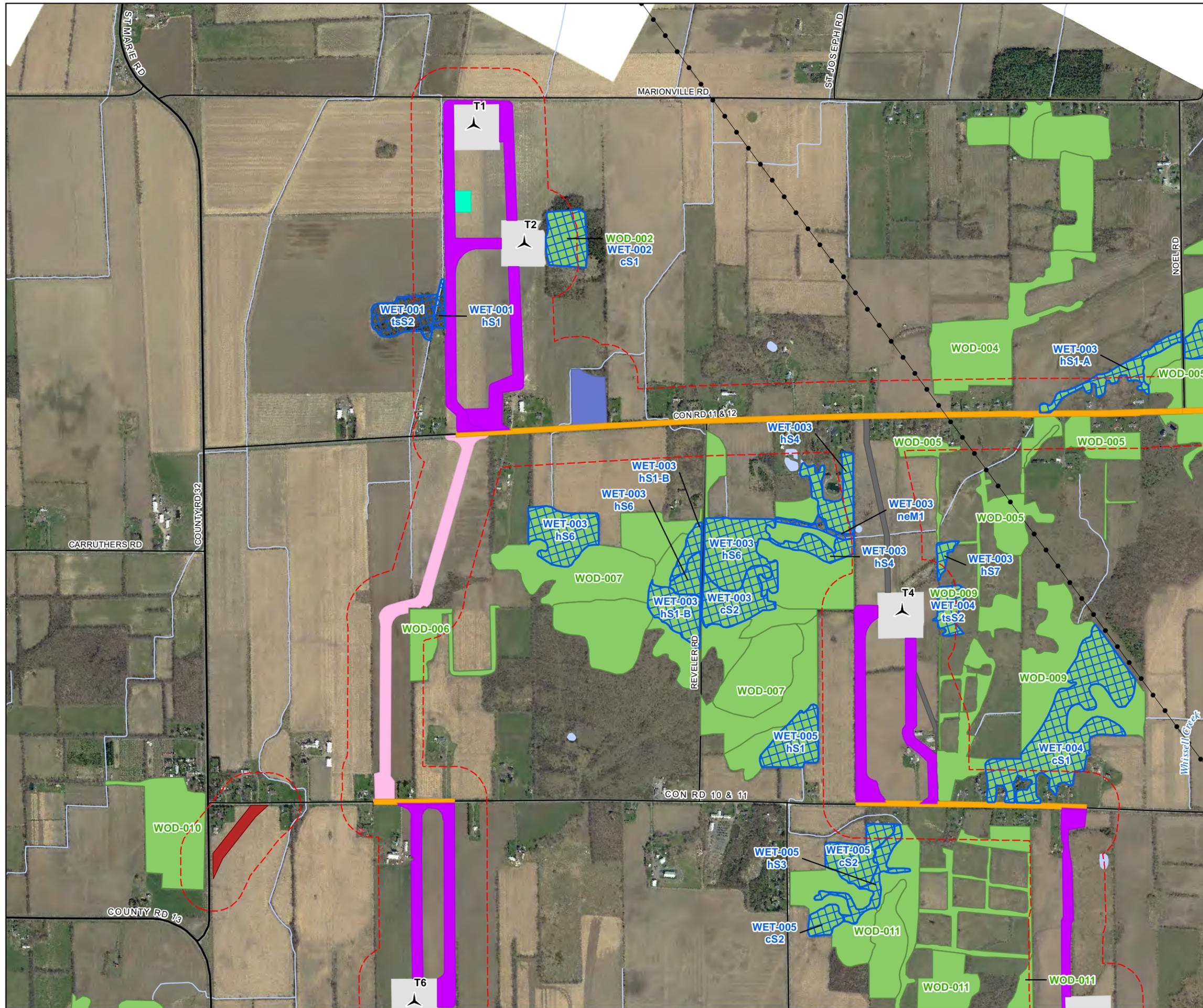
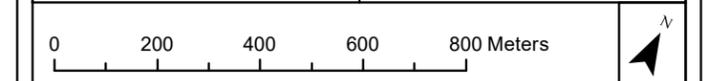
*Natural Features that have been Treated as Significant following Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects of the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

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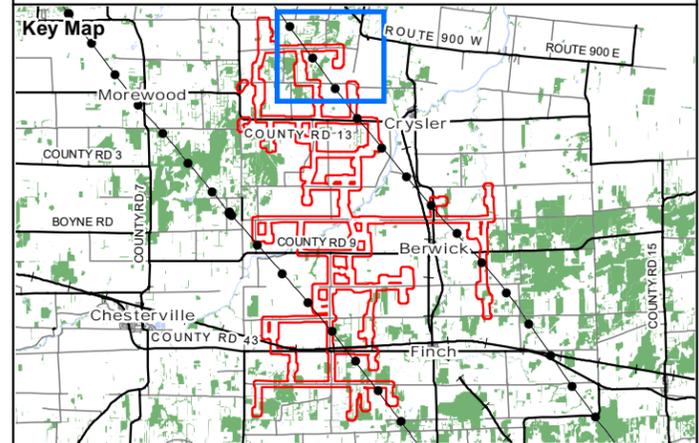
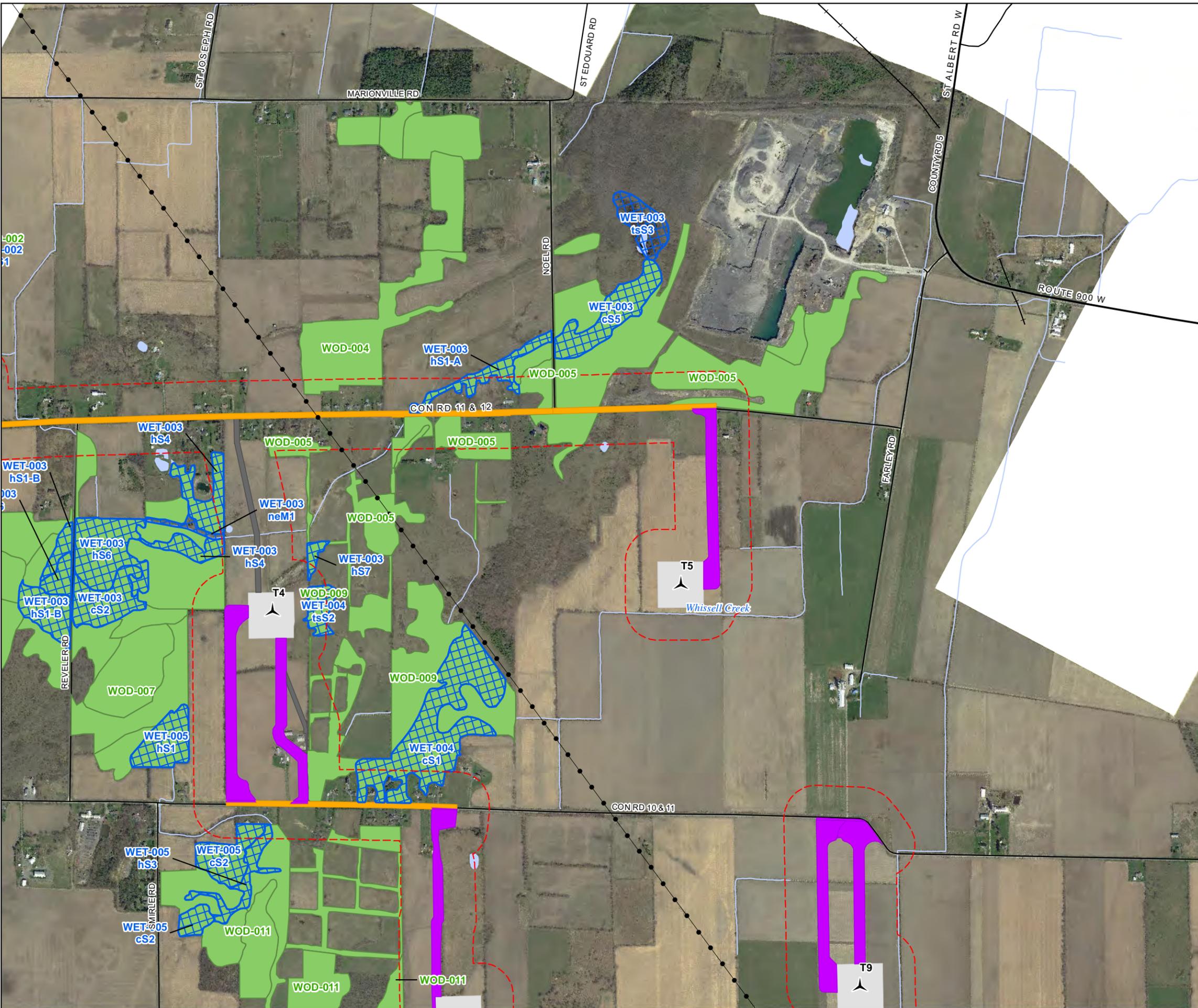
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Project: 1756
Date: June 19, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm Significant Woodlands and Wetlands



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

- Wetland (WET)

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

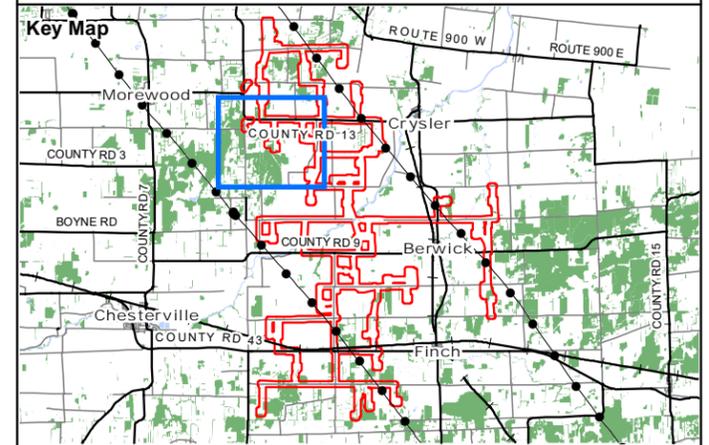
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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
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Nation Rise Wind Farm Significant Woodlands and Wetlands



Legend

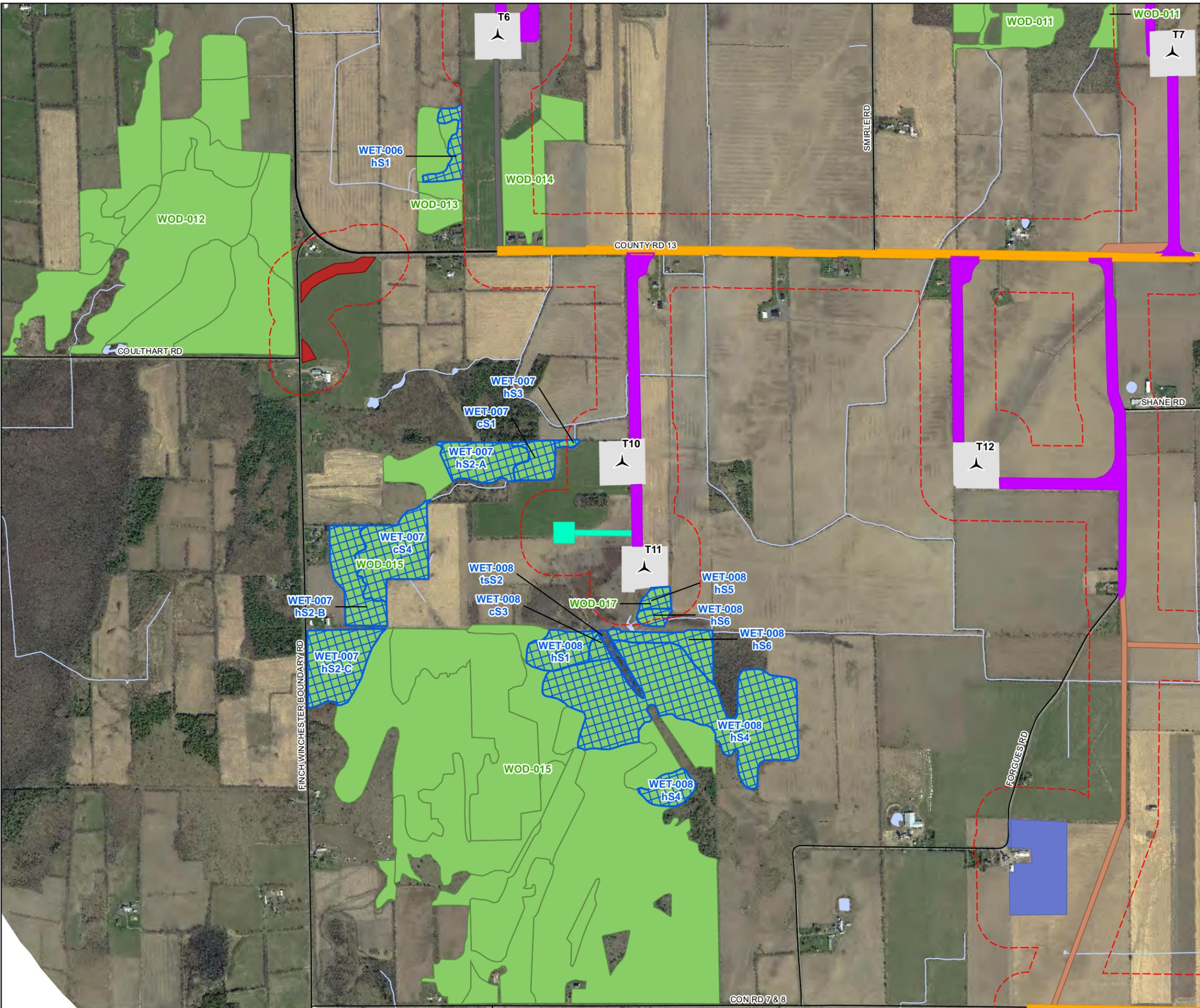
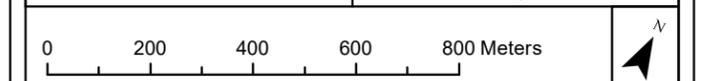
- | | |
|---|---|
| — Primary Road | Significant Natural Features |
| — Secondary Road | ■ Woodland (WOD) |
| ~ Permanent Watercourse (LIO) | Treated As Significant Natural Features* |
| ■ Open Water (LIO) | ■ Wetland (WET) |
| Project Components | |
| □ Project Area | |
| ▲ Proposed Turbine | |
| — 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 Features that have been Treated as Significant following Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects of the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).



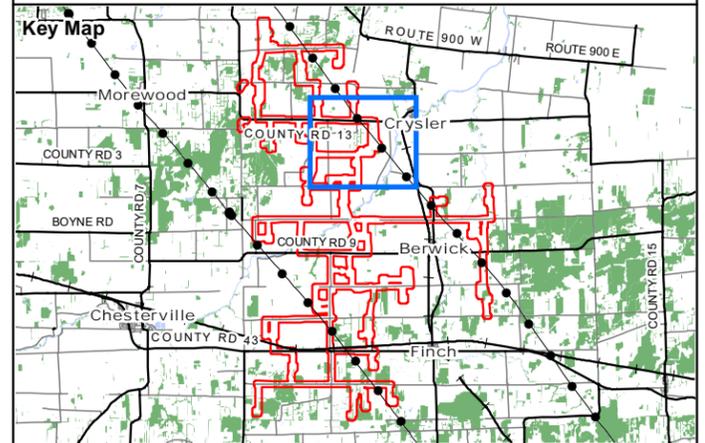
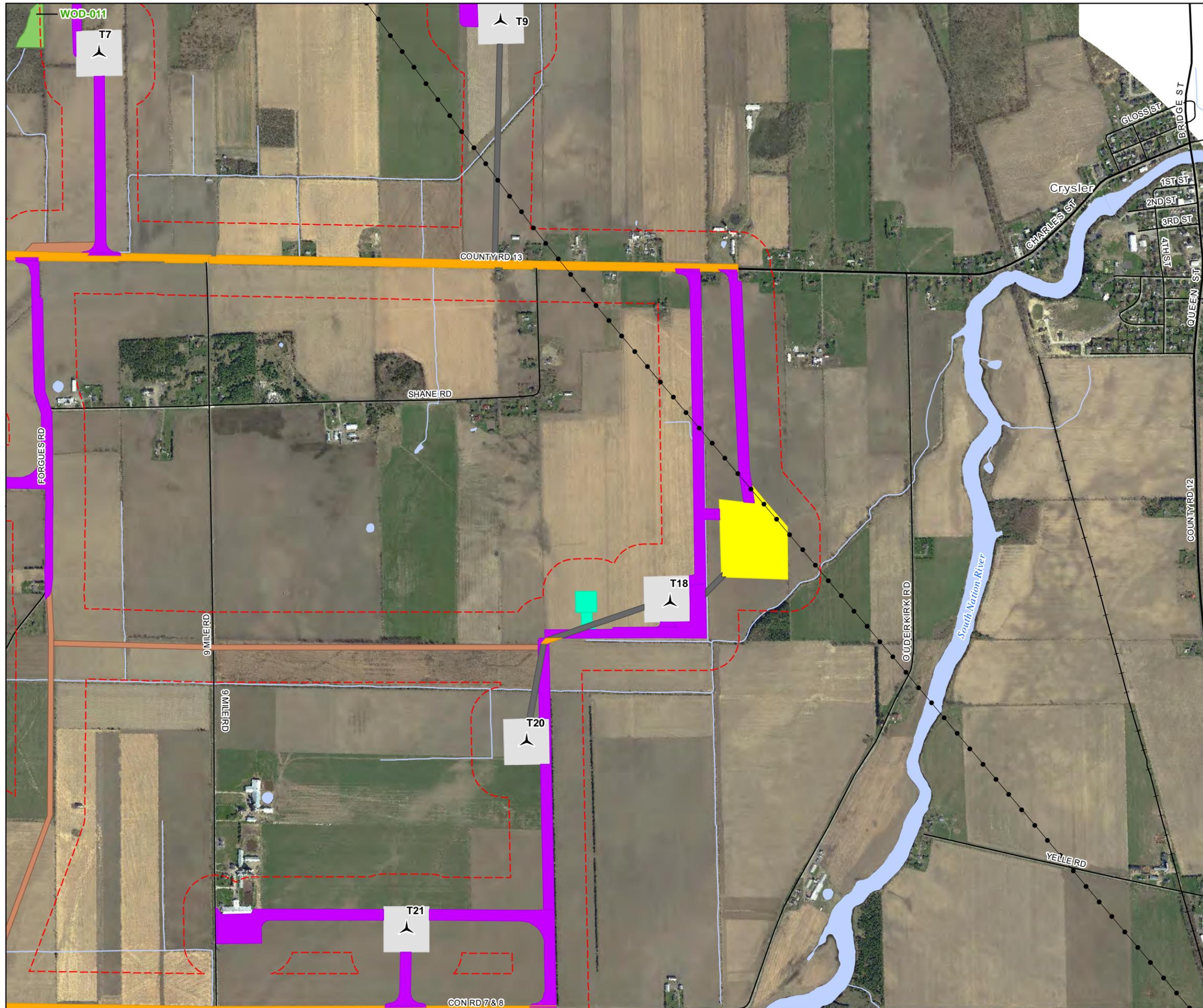
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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
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Nation Rise Wind Farm

Significant Woodlands and Wetlands



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
- Significant Natural Features**
- Woodland (WOD)

**Natural Features that have been Treated as Significant following Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects of the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).*

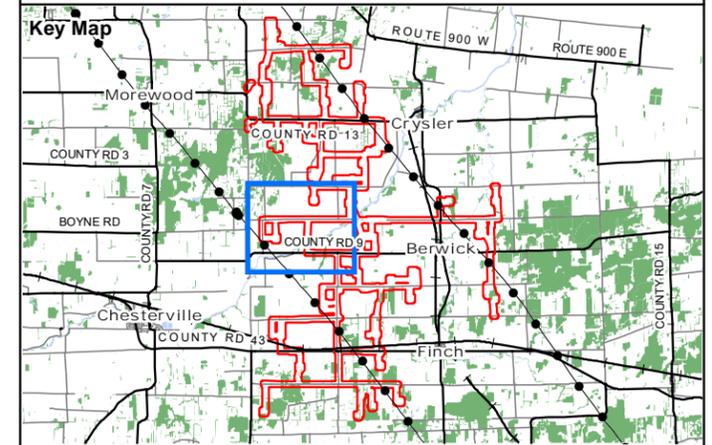


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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Project Components

- Project Area
- Proposed Turbine
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- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road

Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

- Wetland (WET)

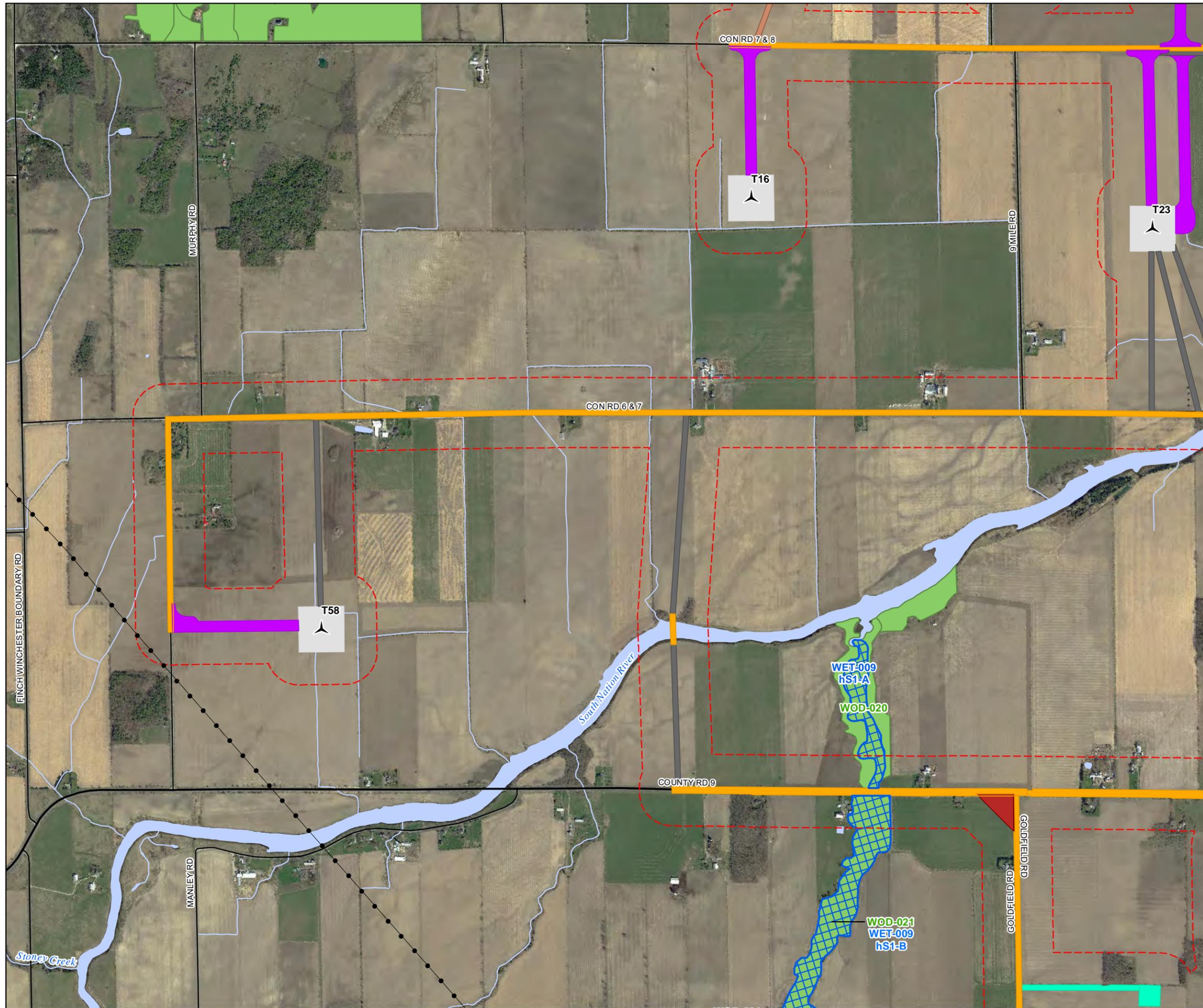
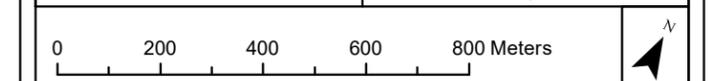
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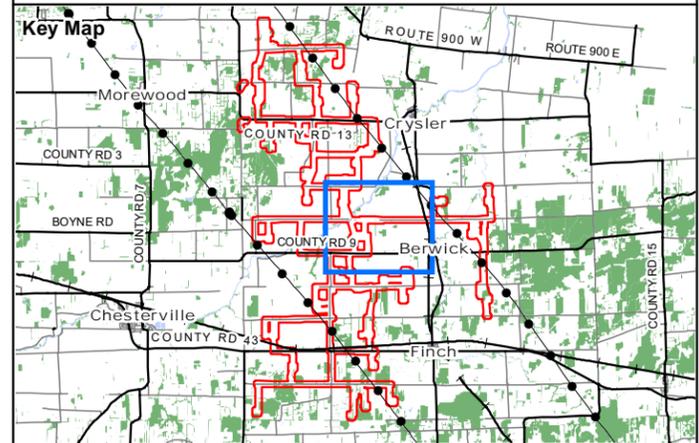
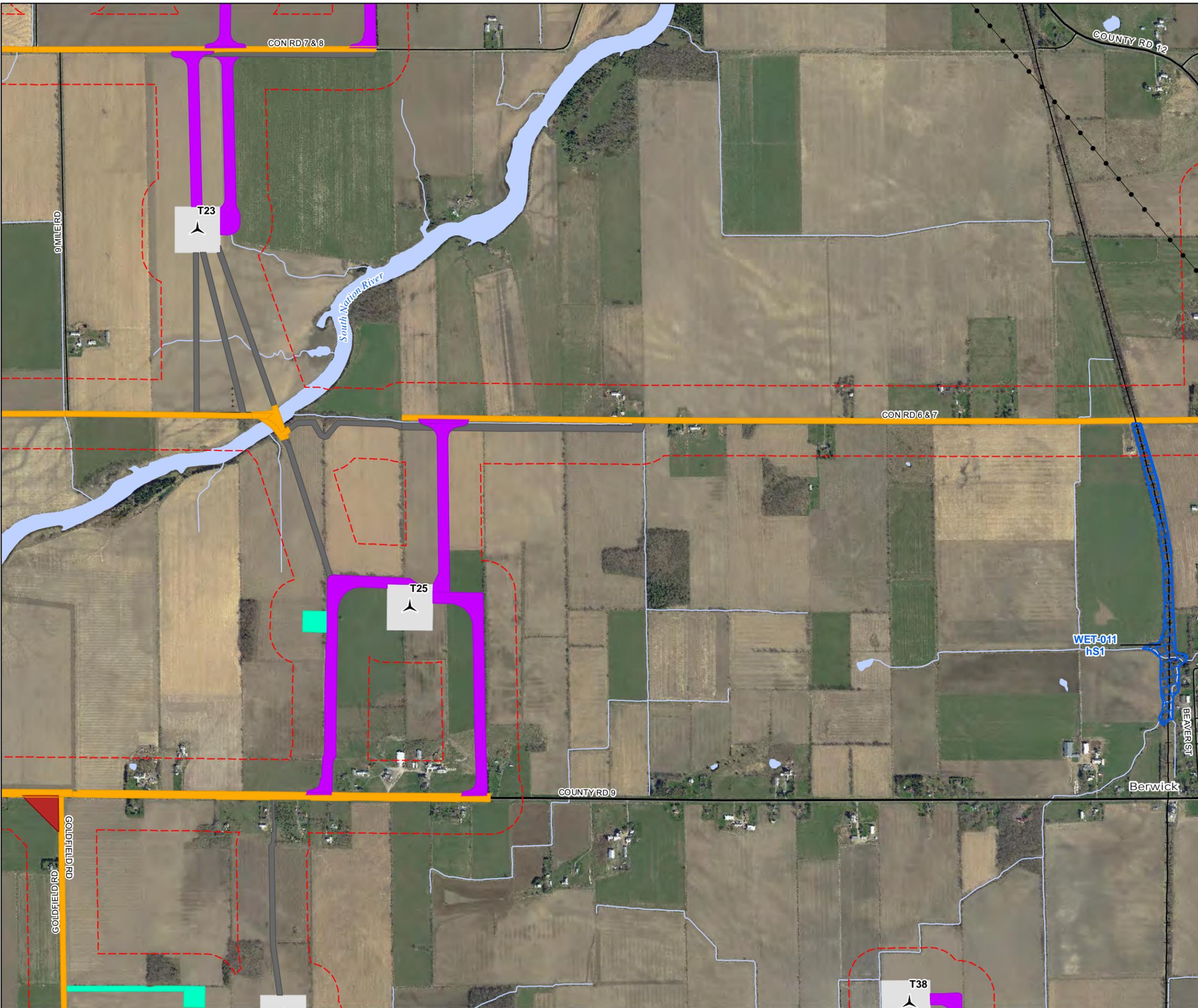
Project: 1756
Date: June 19, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (LIO)

Project Components

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Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

- Wetland (WET)

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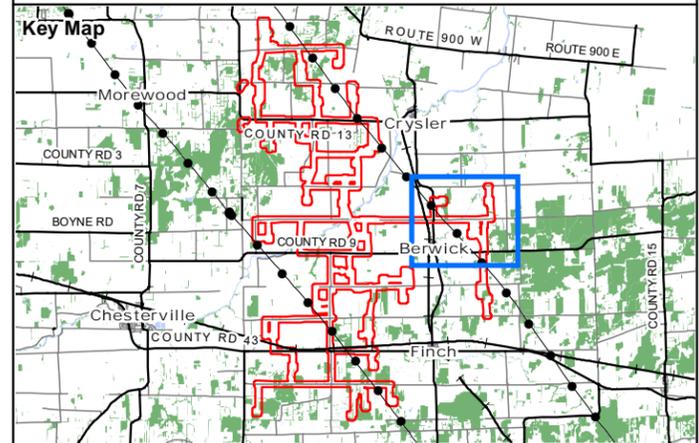
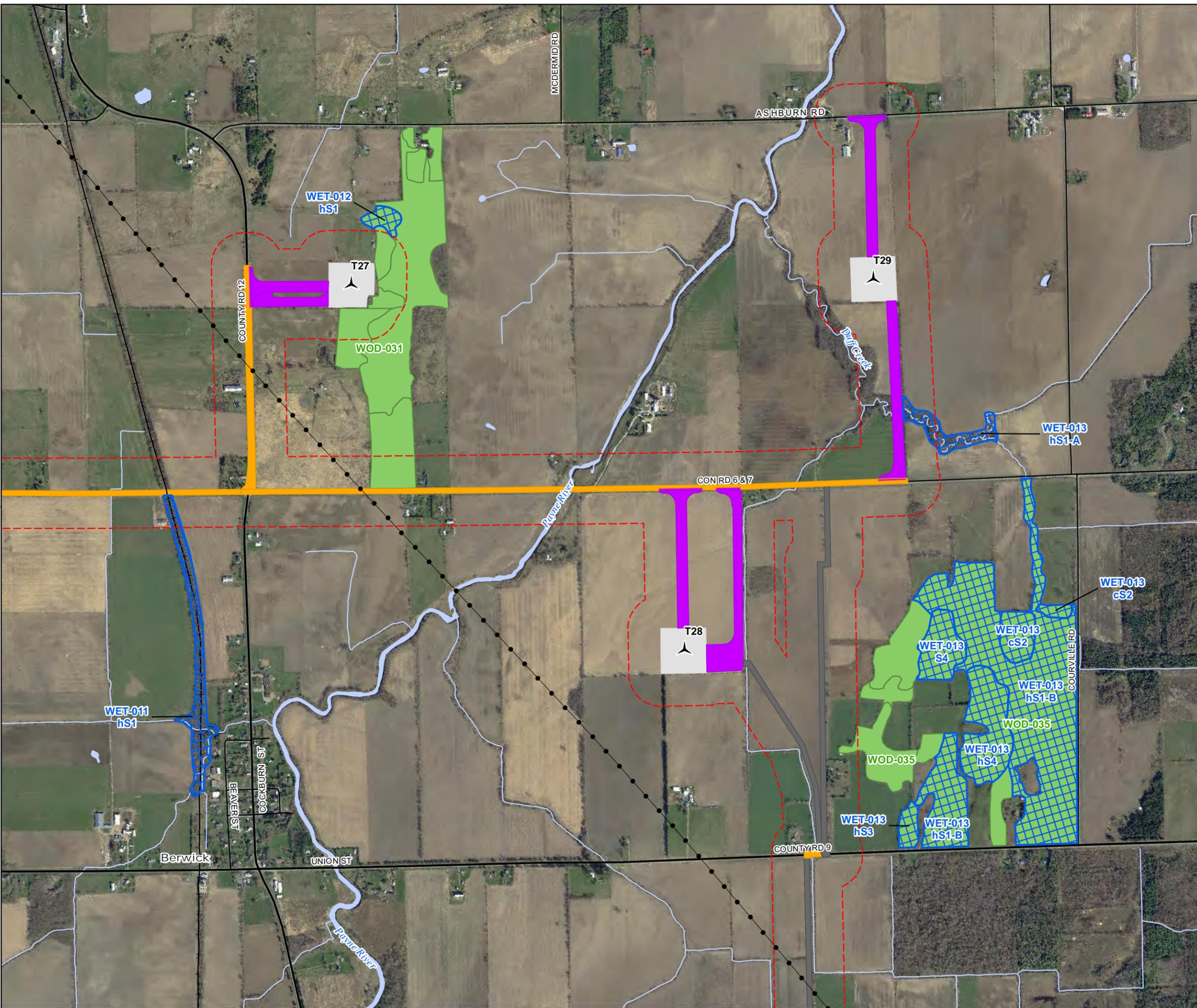


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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
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Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

- Utility Line
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Project Components

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- Proposed Turbine Laydown, Access Road, Collection Line

Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

- Wetland (WET)

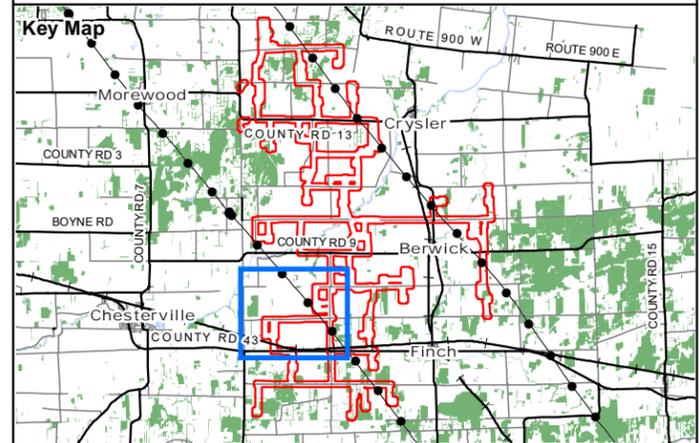
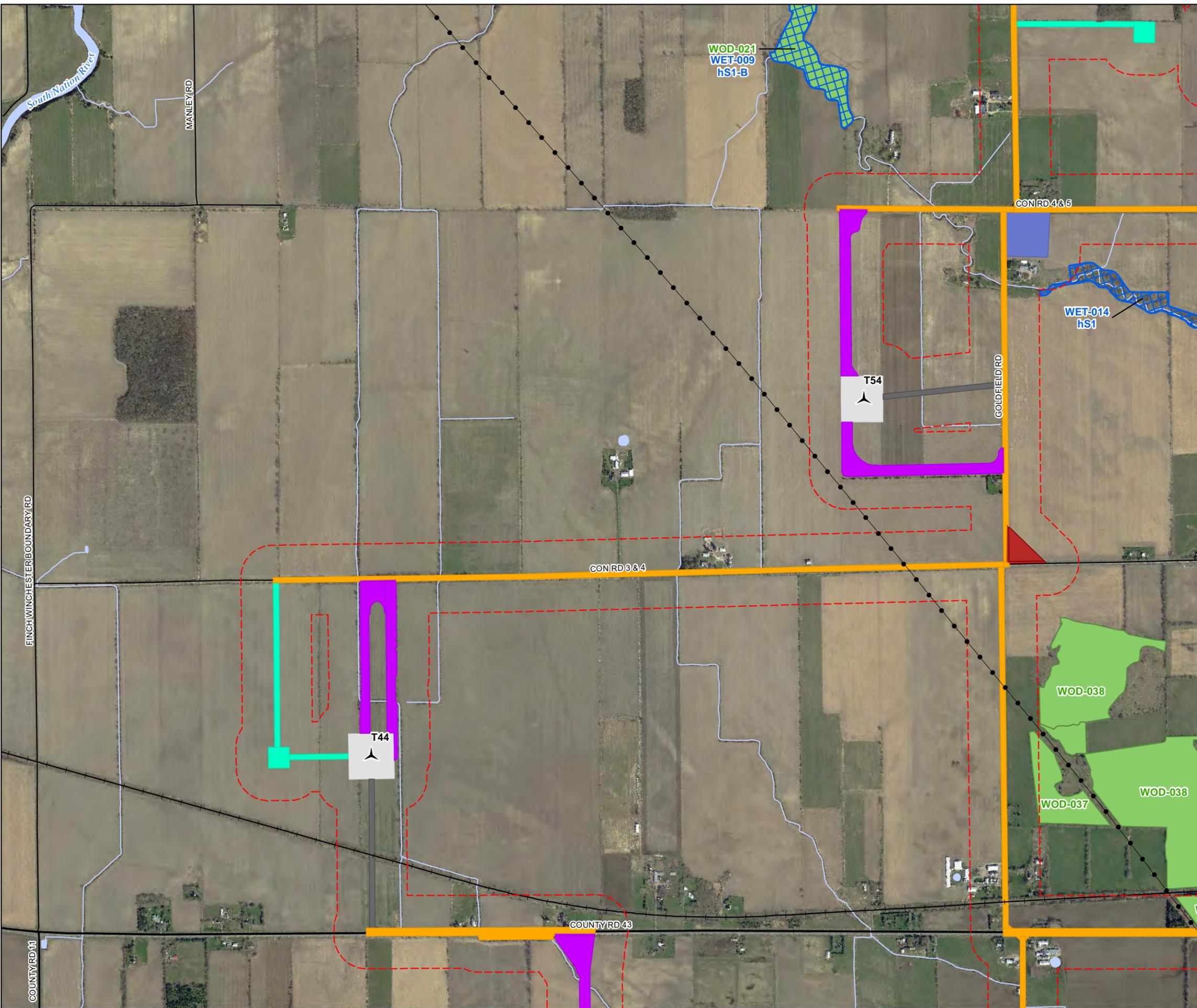
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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm Significant Woodlands and Wetlands



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (LIO)
- Project Components**
- Project Area
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 - Proposed Turbine Laydown, Access Road, Collection Line
 - Proposed Laydown Area
 - Proposed Temporary Turning Radius
 - Proposed Meteorological Tower Footprint and Access Road
- Significant Natural Features**
- Woodland (WOD)
- Treated As Significant Natural Features***
- Wetland (WET)

**Natural Features that have been Treated as Significant following Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects of the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).*

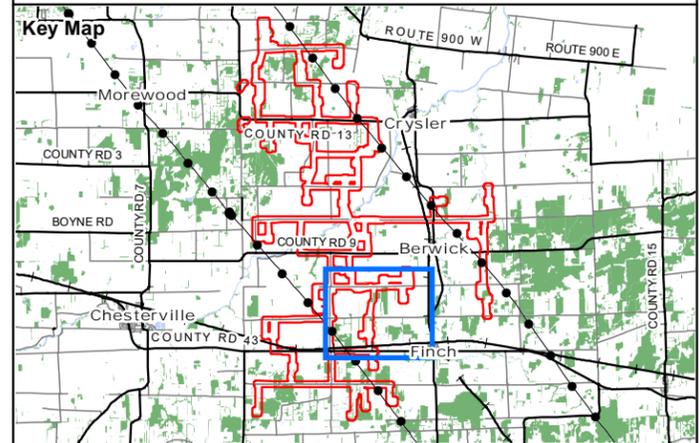


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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Project Components

- Project Area
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- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road

Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

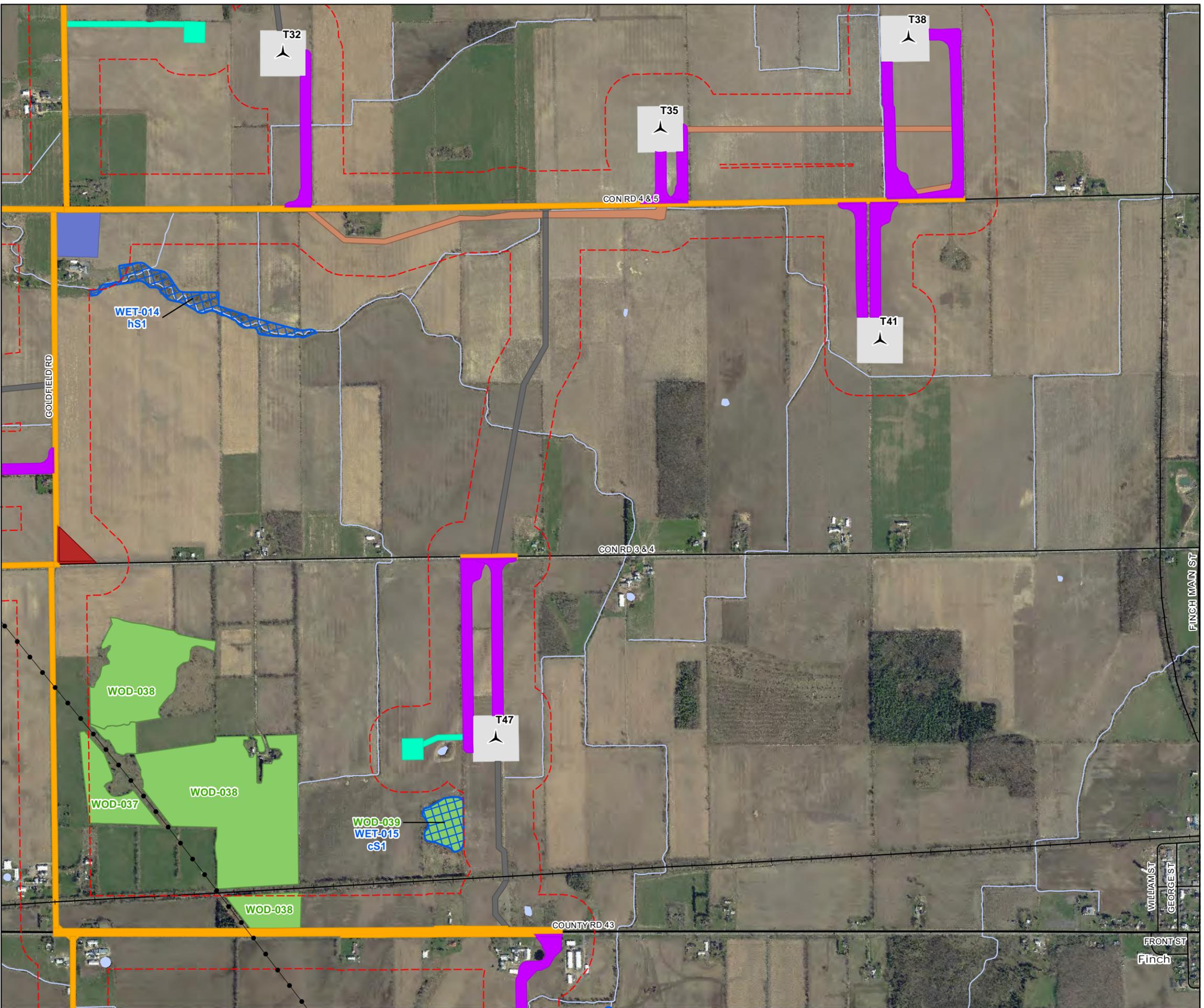
- Wetland (WET)

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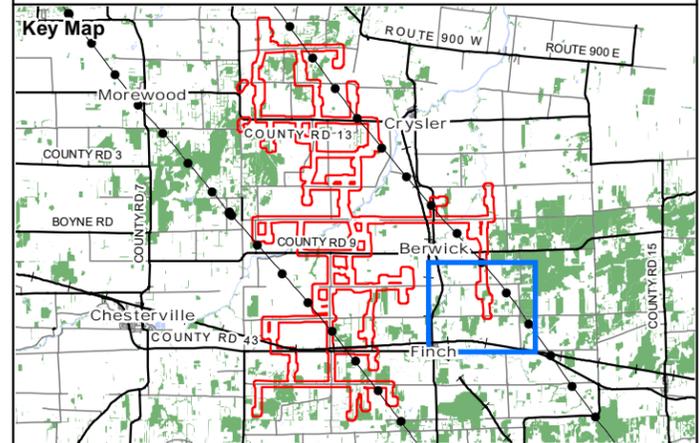
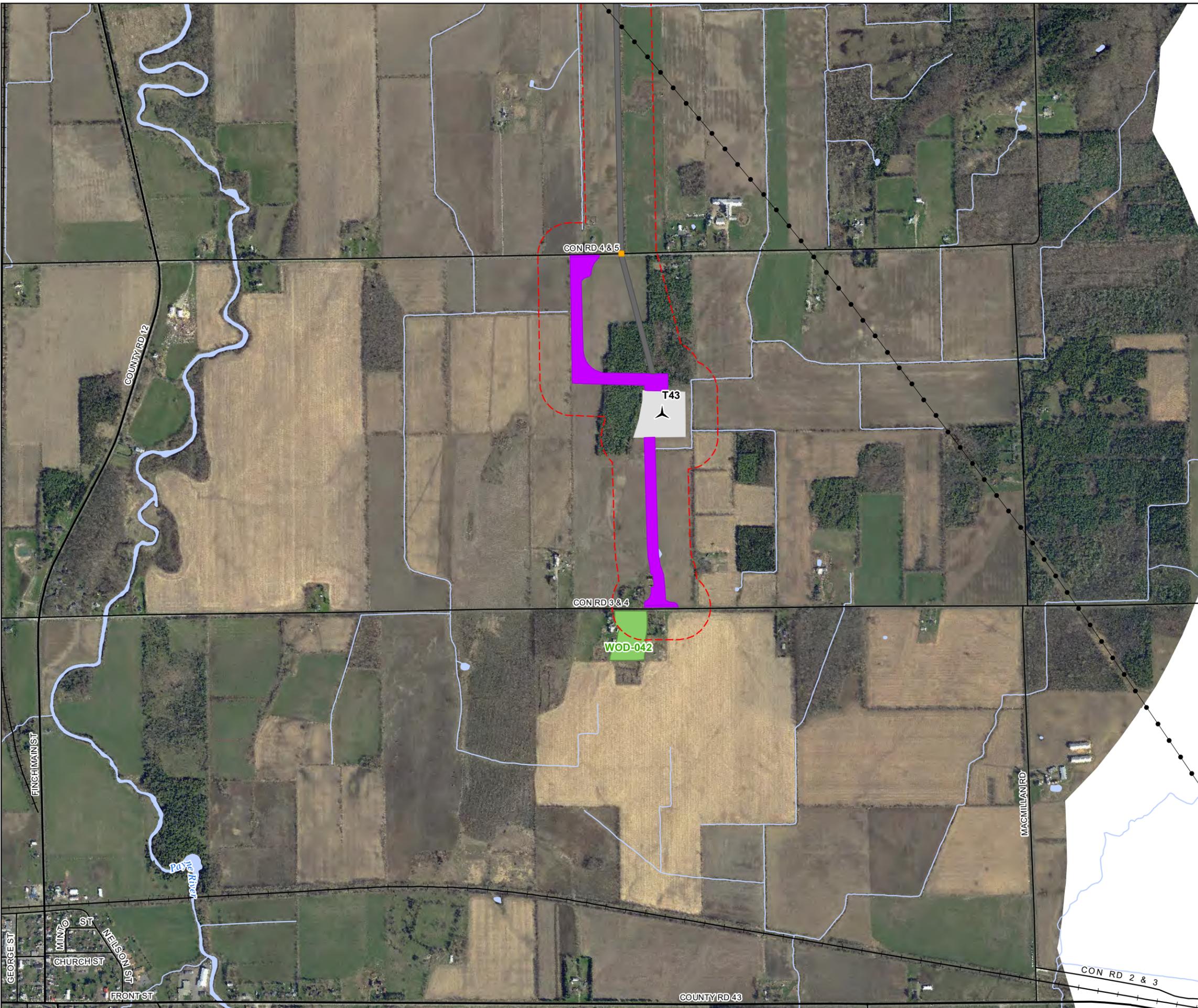
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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	



Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

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Project Components

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Significant Natural Features

- Woodland (WOD)

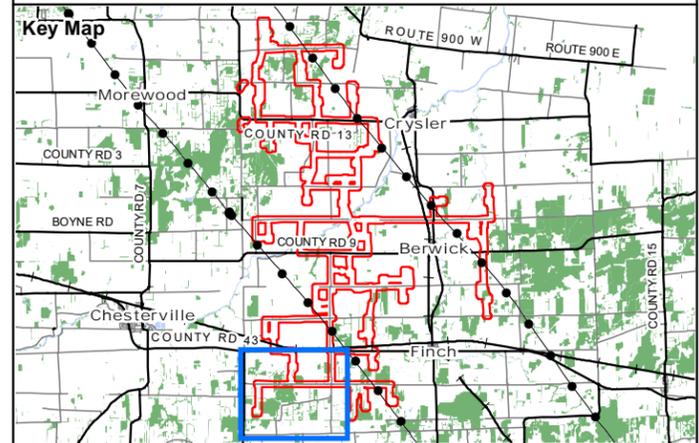
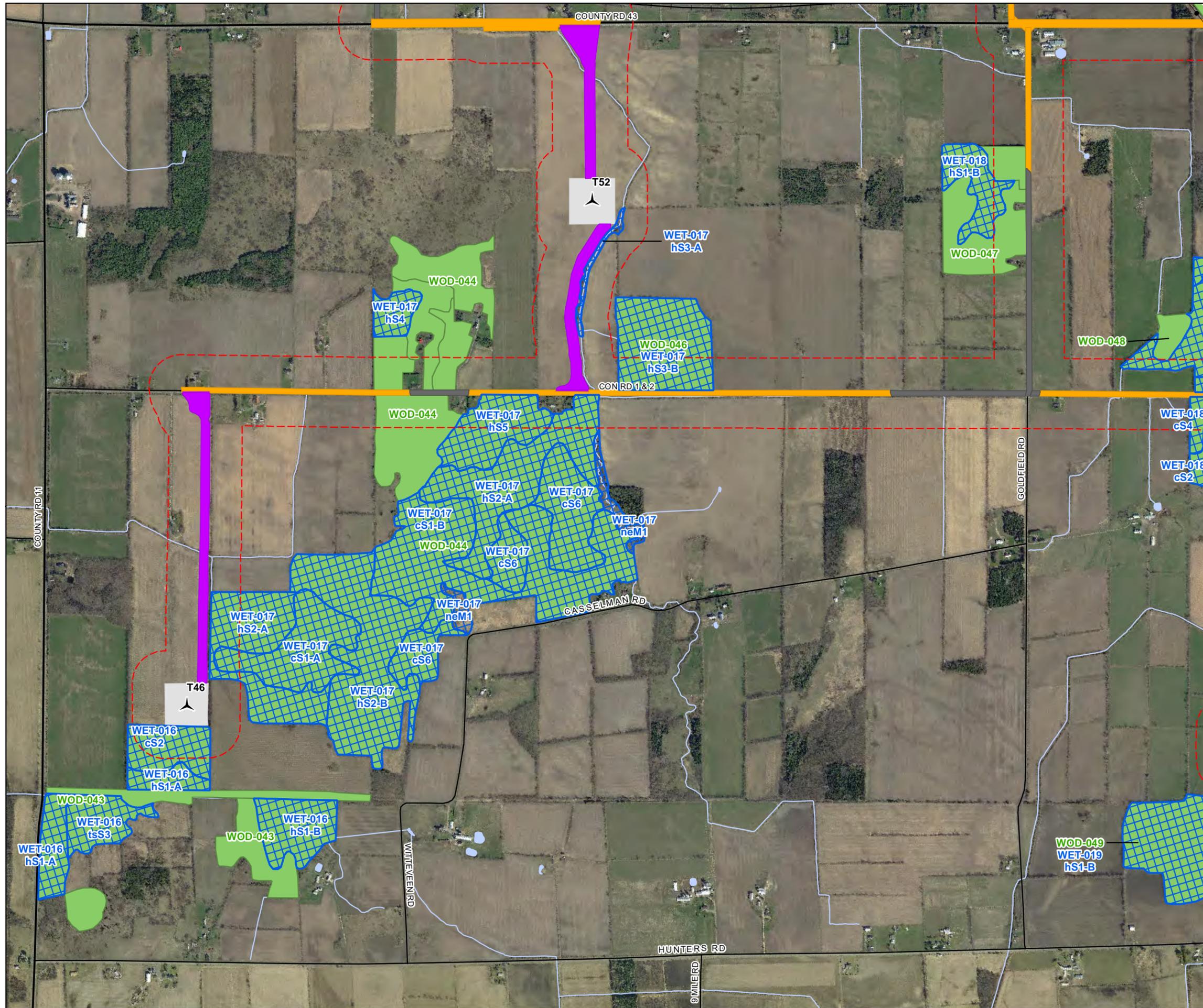
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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm Significant Woodlands and Wetlands



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

- Wetland (WET)

Project Components

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*Natural Features that have been Treated as Significant following Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects of the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

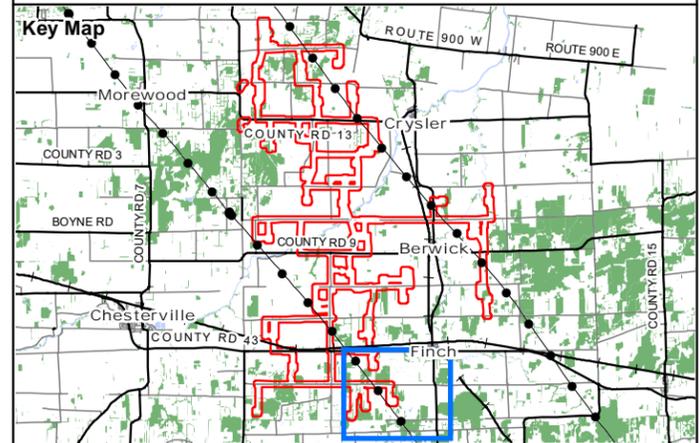
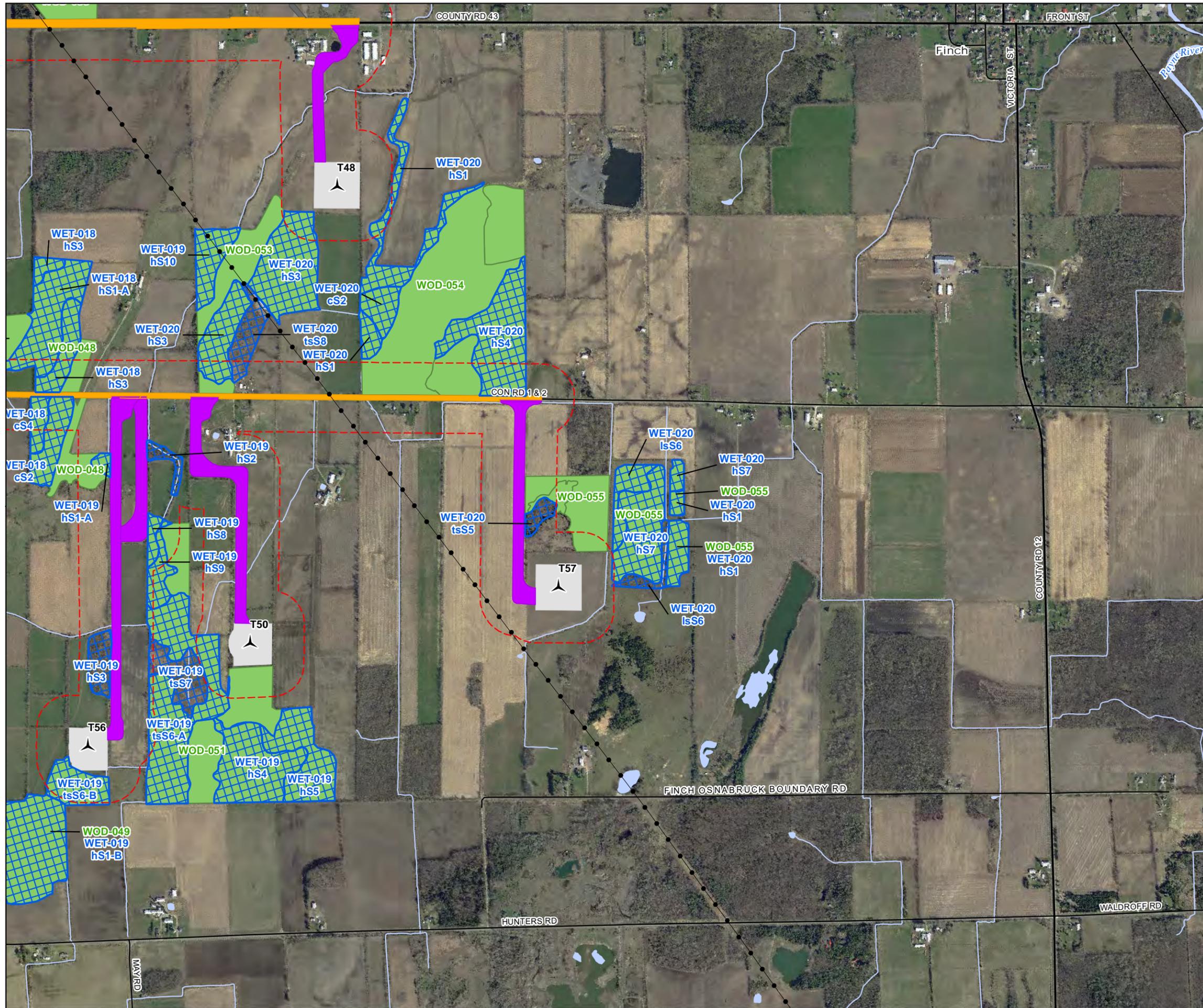


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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Significant Woodlands and Wetlands



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Significant Natural Features

- Woodland (WOD)

Treated As Significant Natural Features*

- Wetland (WET)

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

*Natural Features that have been Treated as Significant following Appendix C: Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects of the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

NATURAL RESOURCE SOLUTIONS INC.
 Aquatic, Terrestrial and Wetland Biologists

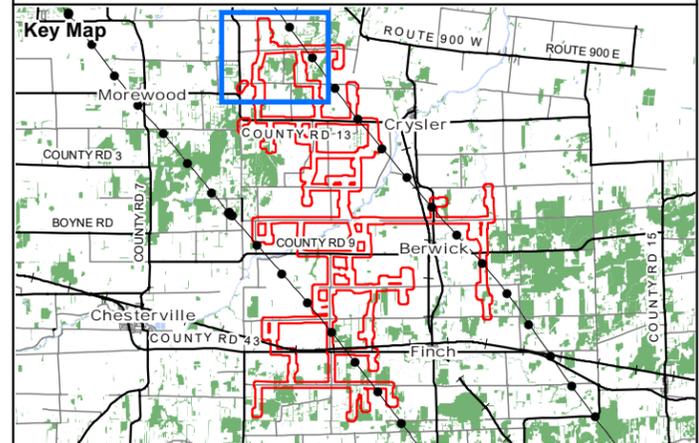
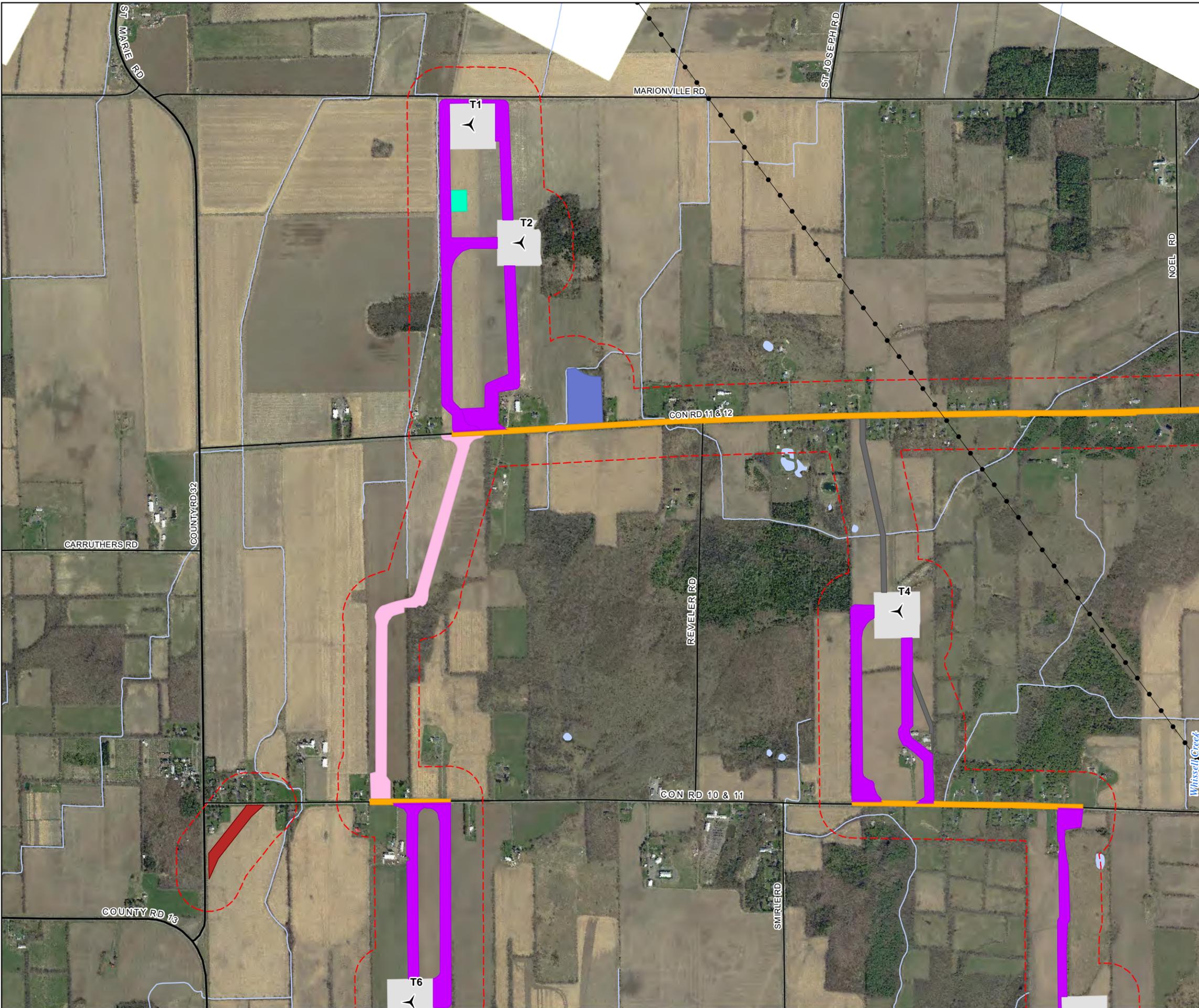
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Project: 1756 Date: June 19, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Maps 3-1 to 3-12
Significant Seasonal Concentration Areas

Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- ~ Open Water (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
- ▭ Proposed Temporary Turning Radius
- ▬ Proposed Temporary Access Road for Construction
- ▭ Proposed Meteorological Tower Footprint and Access Road

**Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*

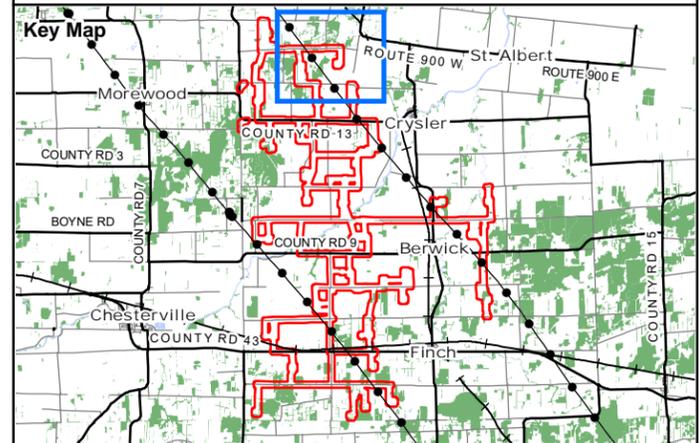
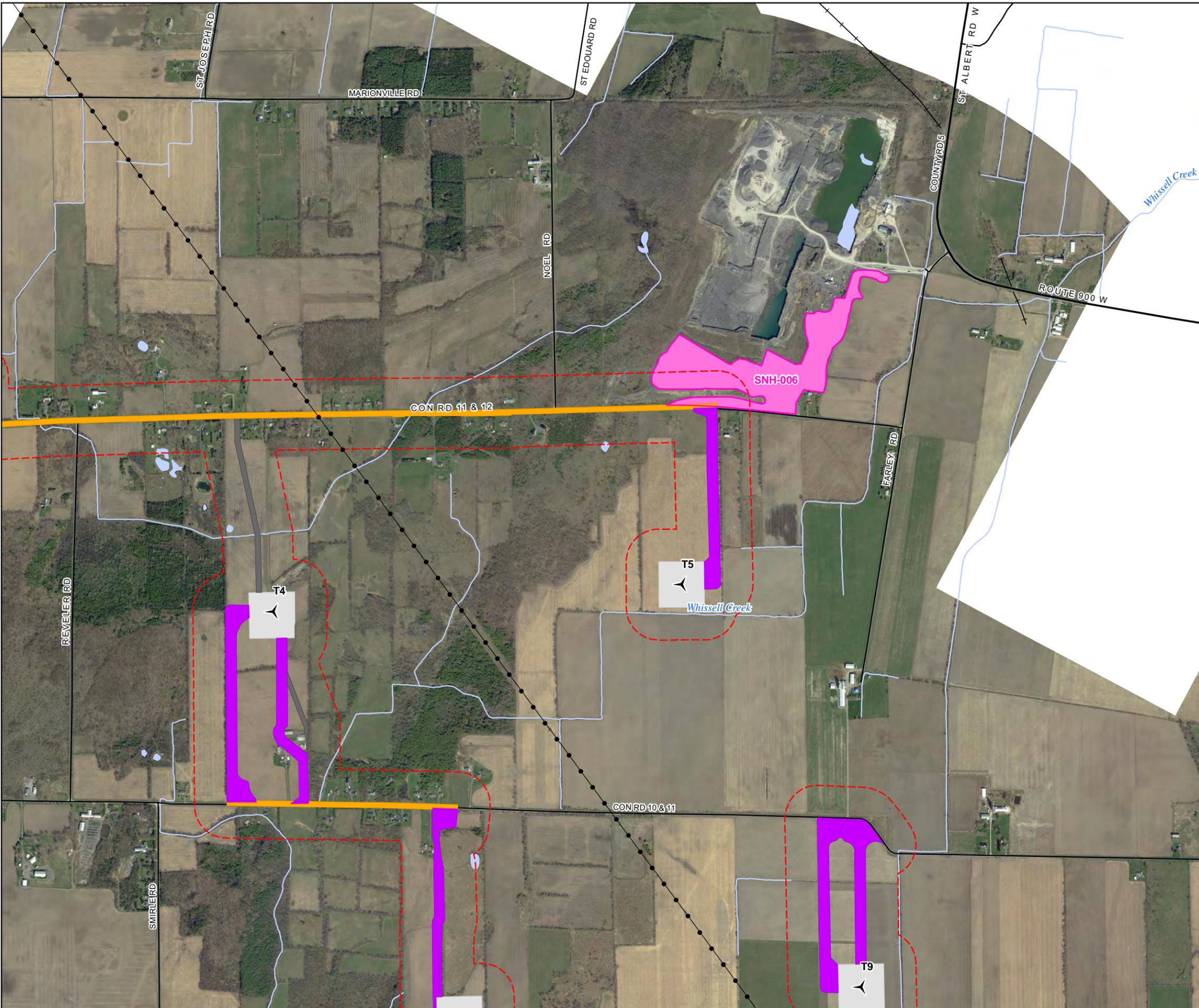


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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (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

Treated As Significant Seasonal Concentration Areas*

- Snake Hibernaculum (SNH)

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

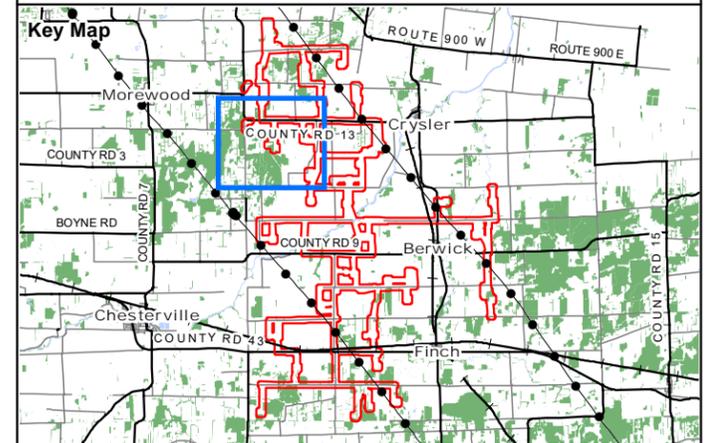


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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (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
- Proposed Temporary Turning Radius
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road

**Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*

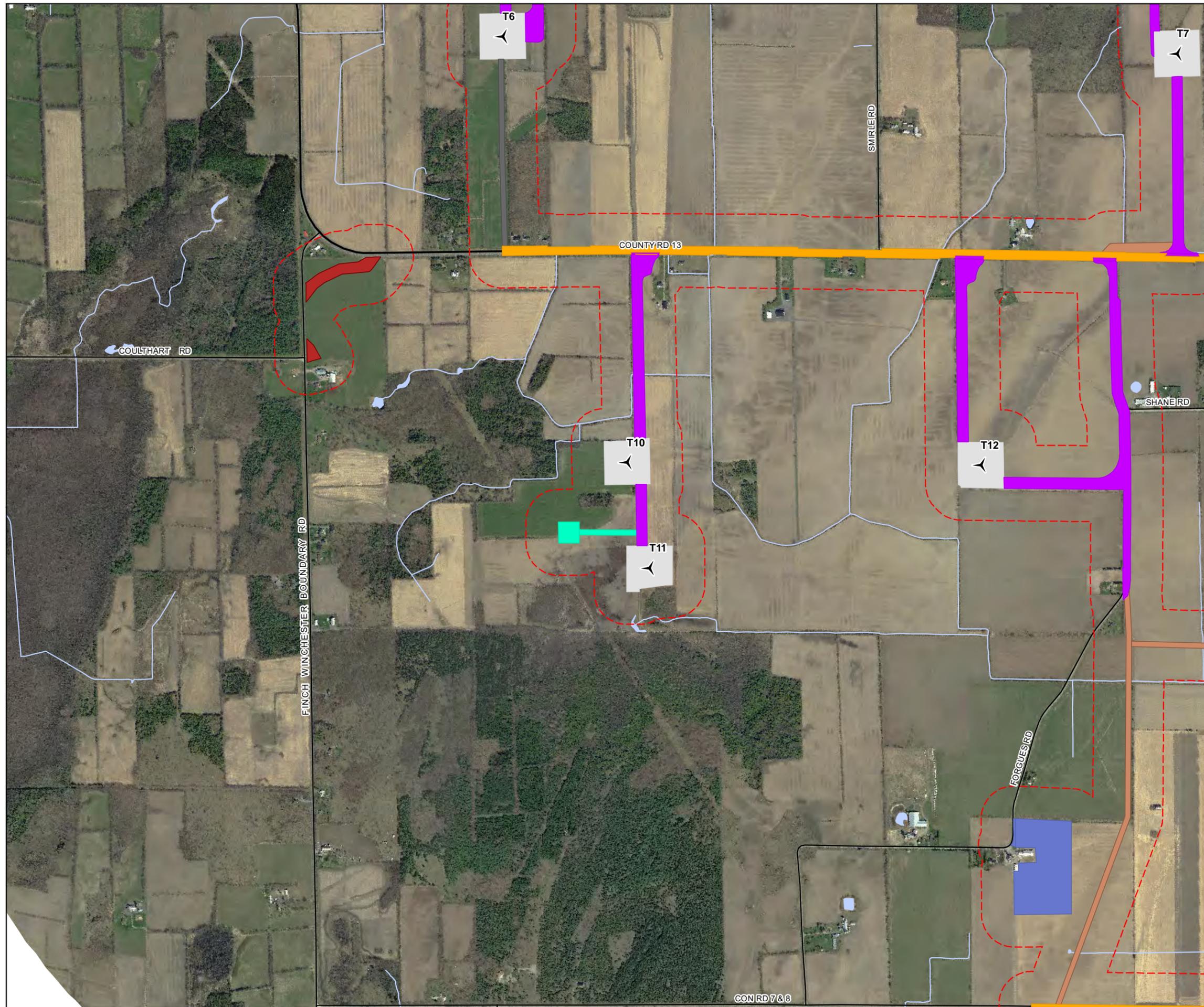


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Project: 1756
Date: July 10, 2017

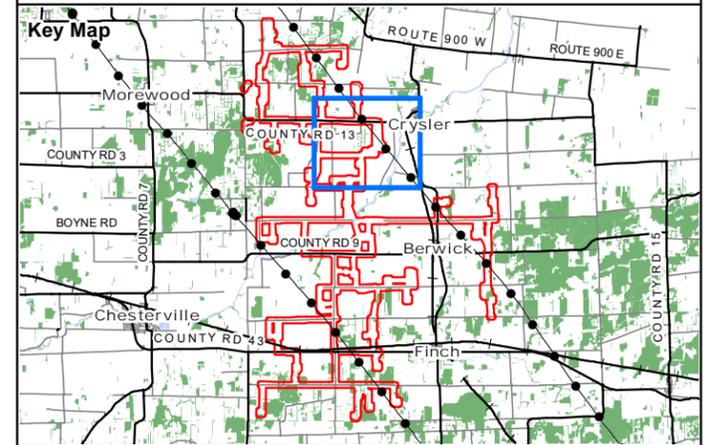
NAD83 - UTM Zone 18
Size: 11x17"
1:14,000

0 200 400 600 800 Meters



Nation Rise Wind Farm

Significant Seasonal Concentration Areas



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (LIO)
 - 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
- Significant Seasonal Concentration Areas**
- Waterfowl Stopover and Staging Area (Aquatic) (WSA)
 - Waterfowl Stopover and Staging Area (Aquatic) (WSA) - Buffer
 - Treated As Significant Seasonal Concentration Areas*
 - Turtle Wintering Area (TWA)

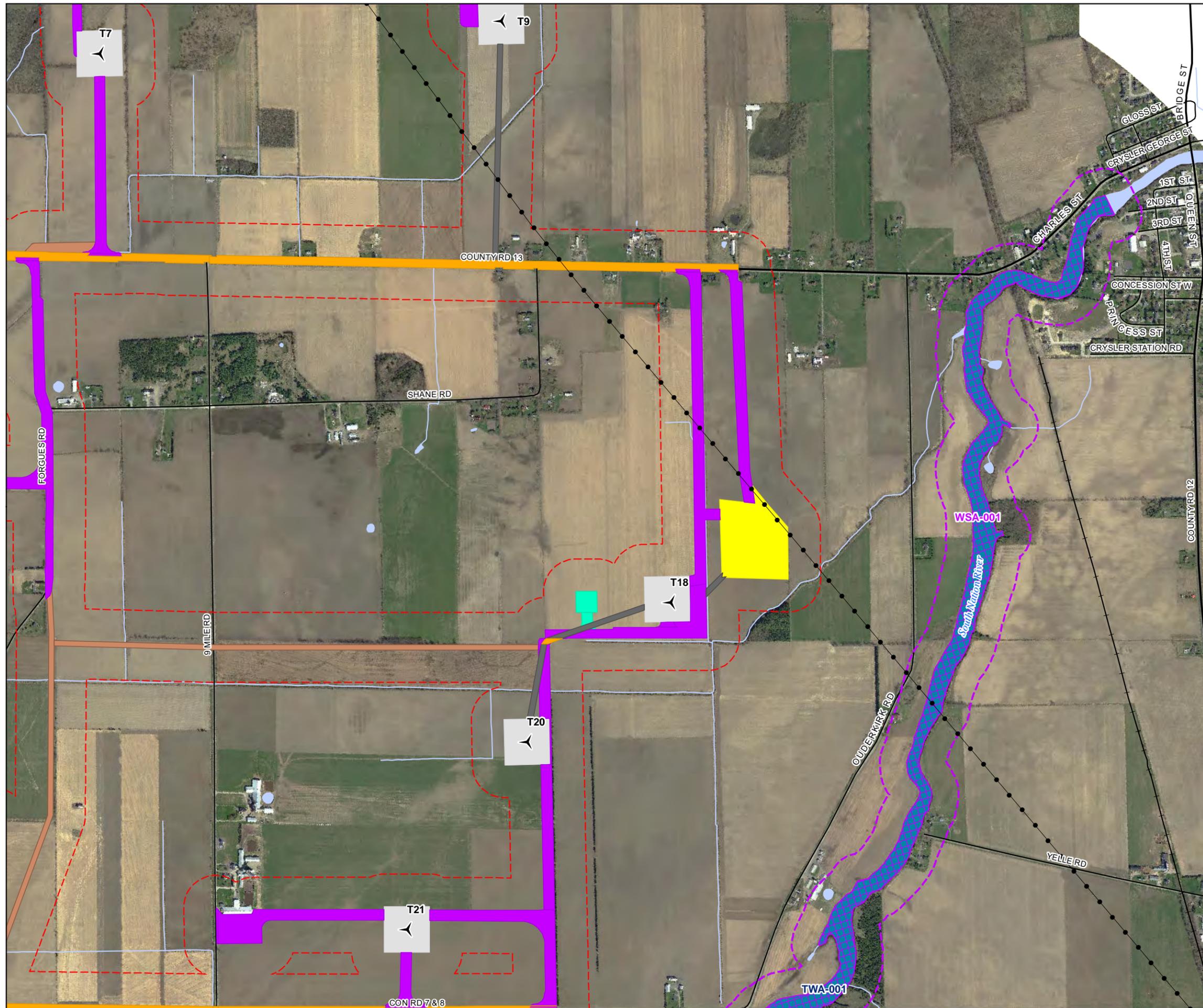
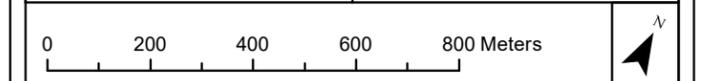
*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



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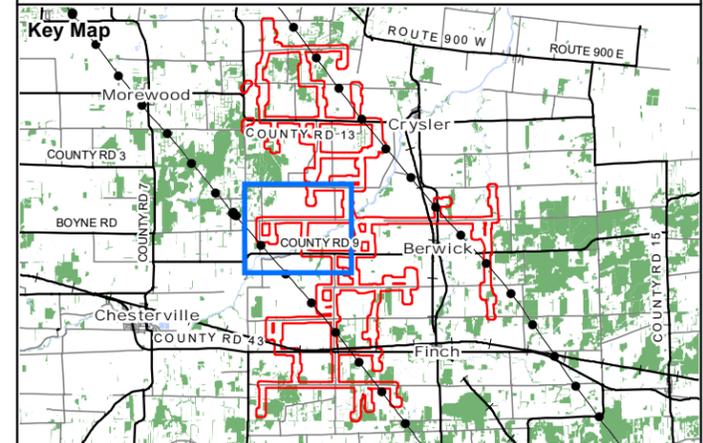
Project: 1756
Date: July 10, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- 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

Significant Seasonal Concentration Areas

- Waterfowl Stopover and Staging Area (Aquatic) (WSA)
- Waterfowl Stopover and Staging Area (Aquatic) (WSA) - Buffer

Treated As Significant Seasonal Concentration Areas*

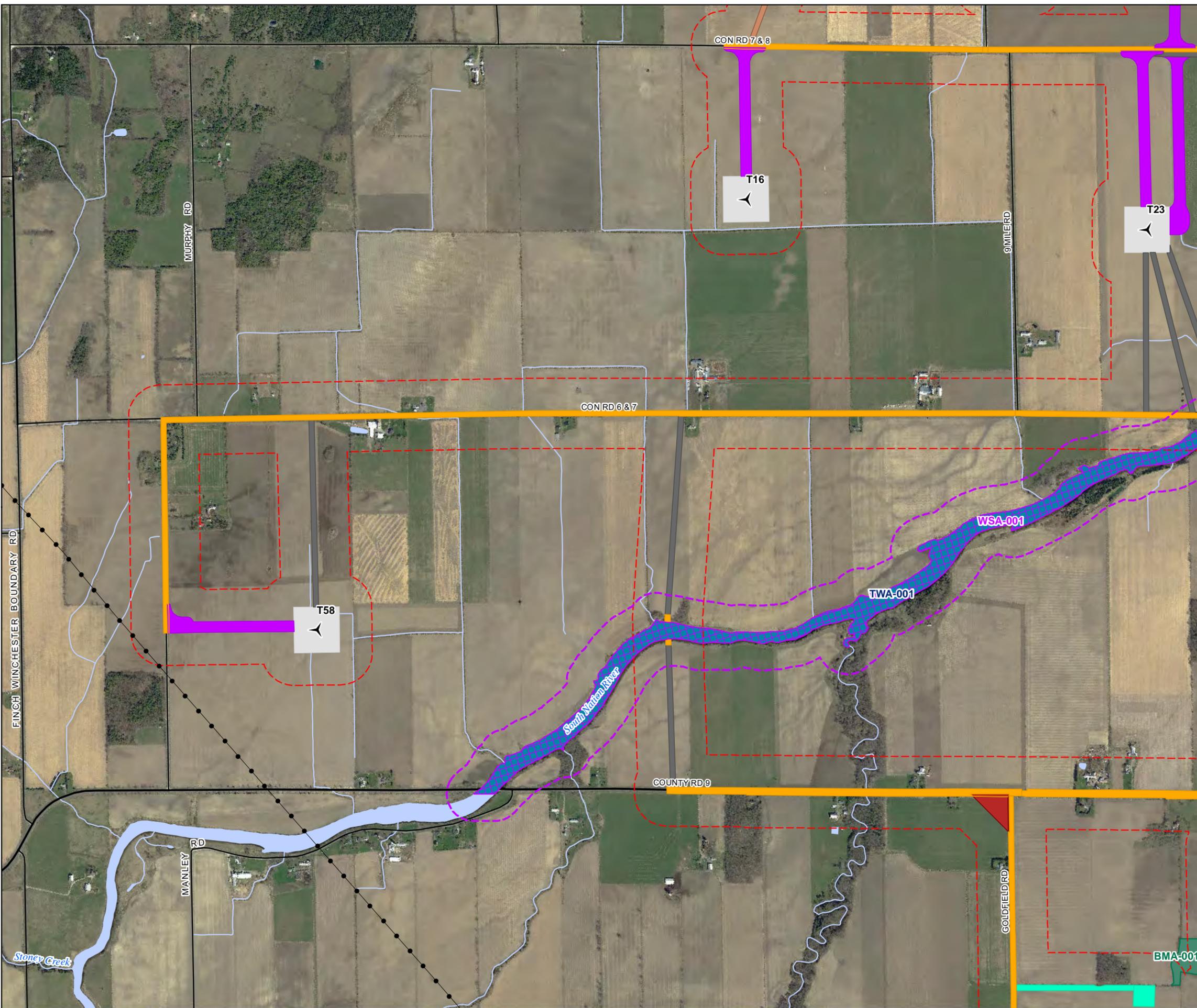
- Turtle Wintering Area (TWA)
- Bat Maternity Colony (BMA)

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



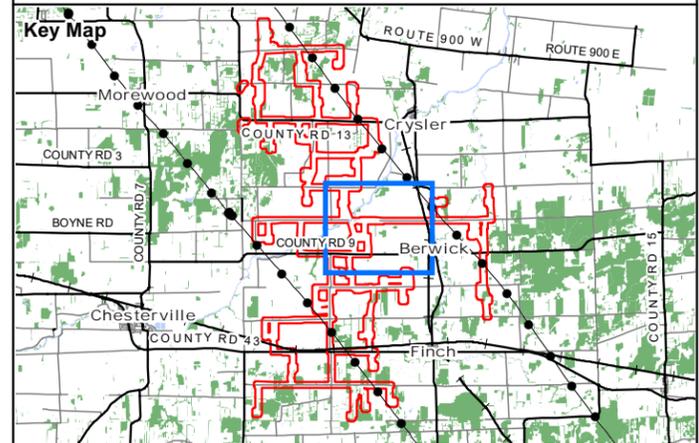
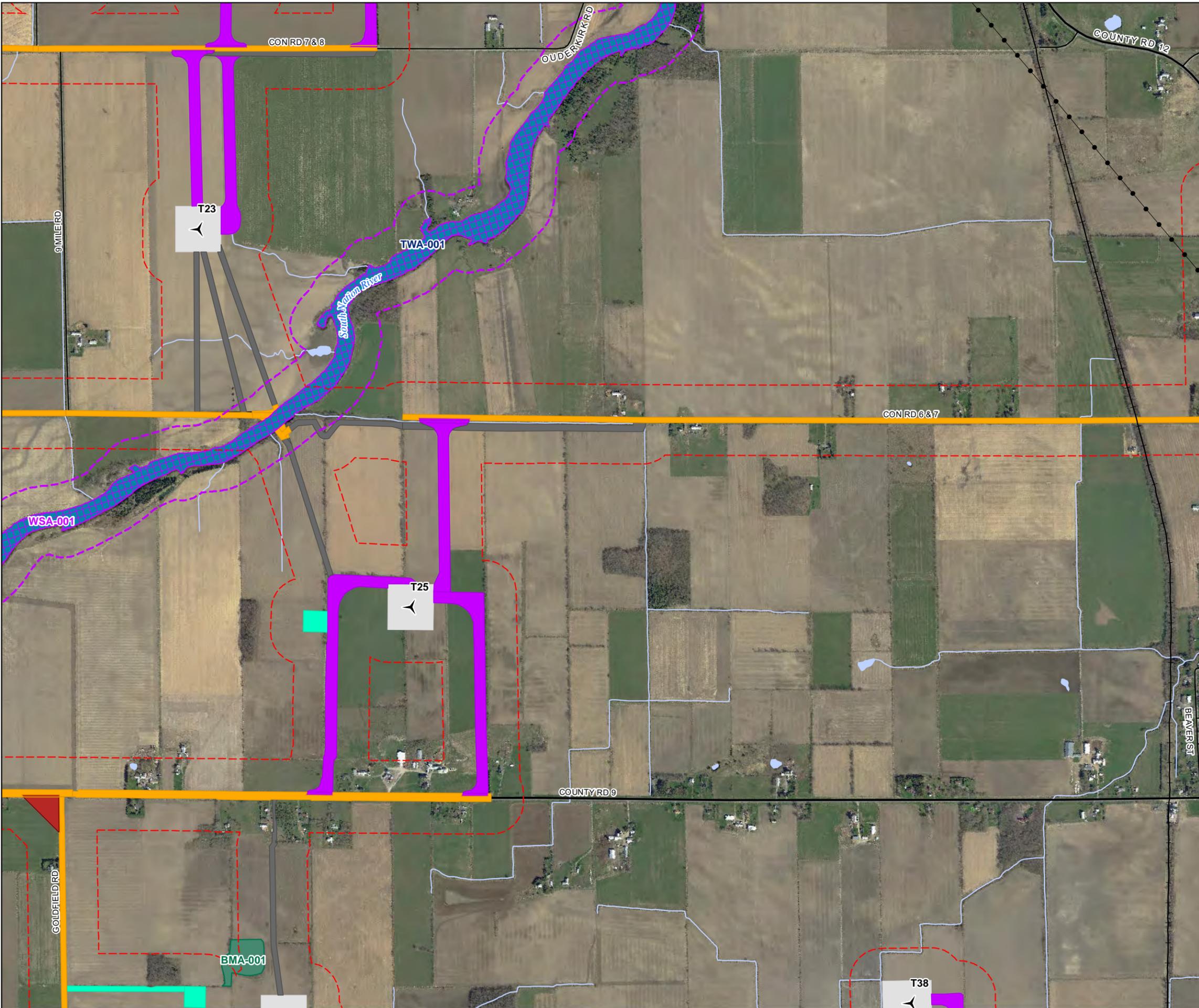
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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (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

Significant Seasonal Concentration Areas

- Waterfowl Stopover and Staging Area (Aquatic) (WSA)
- Waterfowl Stopover and Staging Area (Aquatic) (WSA) - Buffer
- Treated As Significant Seasonal Concentration Areas*
- Turtle Wintering Area (TWA)
- Bat Maternity Colony (BMA)

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

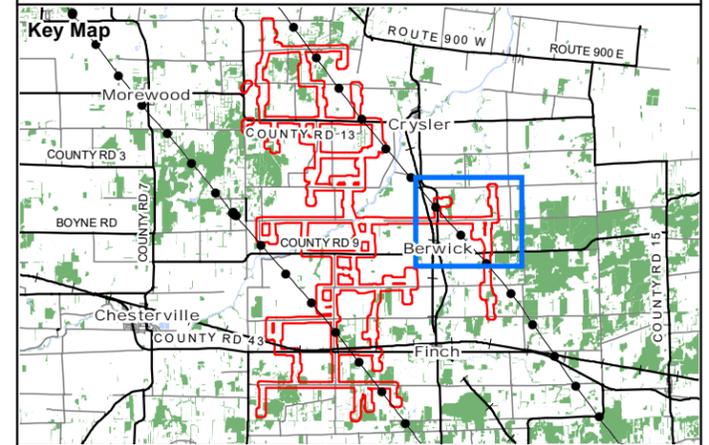


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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (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

**Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*

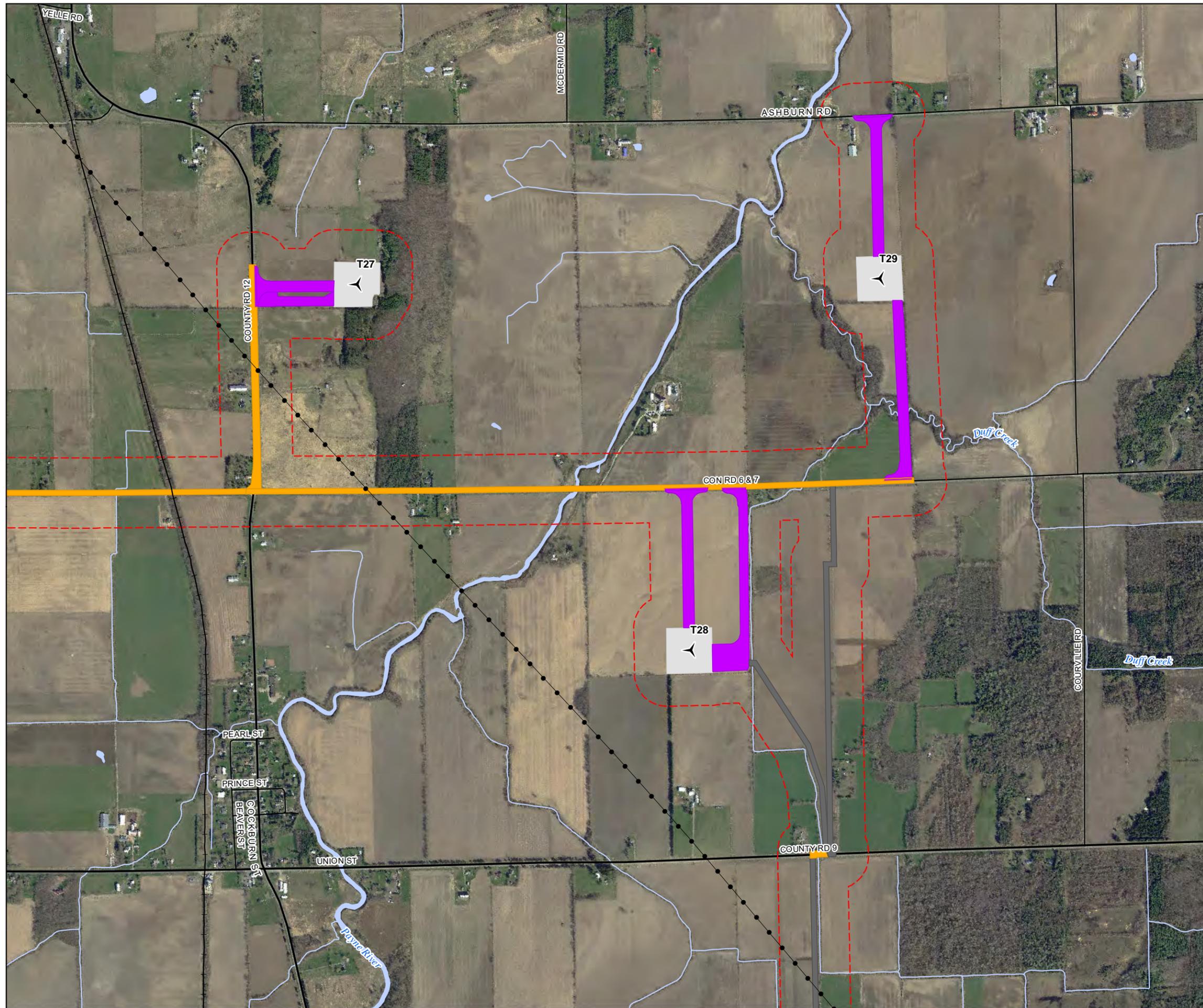


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Project: 1756
Date: July 10, 2017

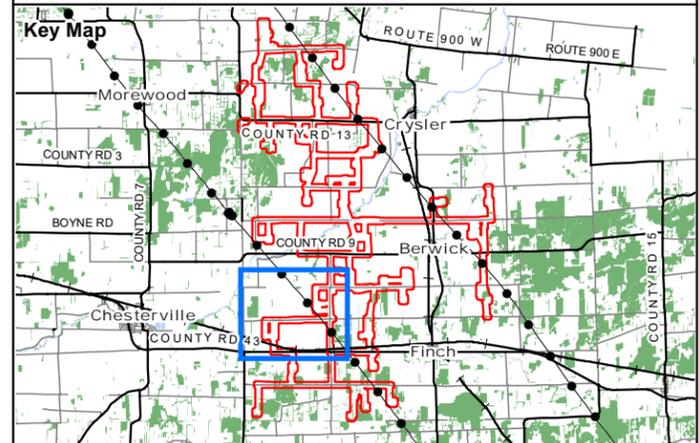
NAD83 - UTM Zone 18
Size: 11x17"
1:14,000

0 200 400 600 800 Meters



Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (LIO)
- Treated As Significant Seasonal Concentration Areas***
- Bat Maternity Colony (BMA)

Project Components

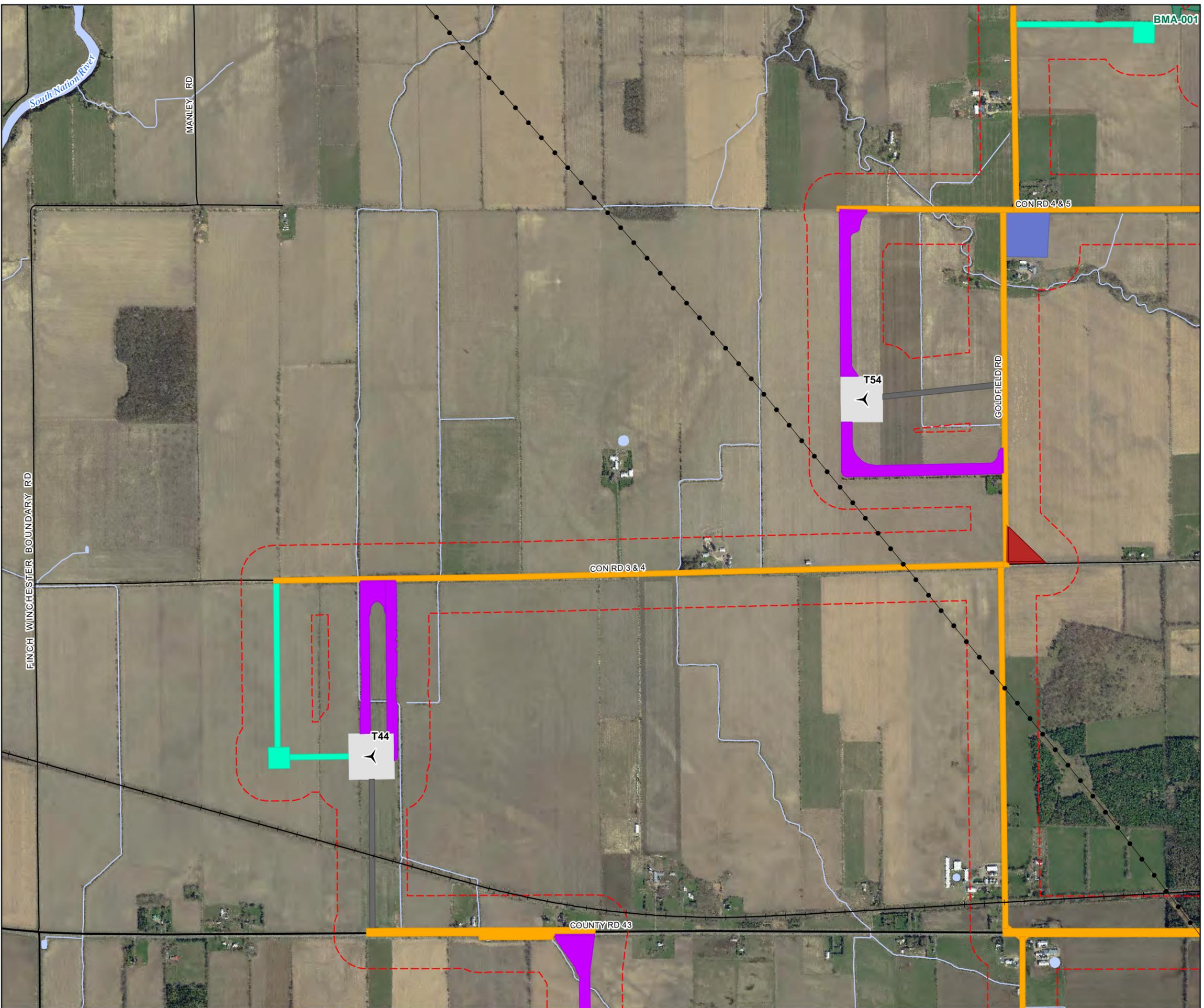
- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown
- Proposed Temporary Turning Radius
- Proposed Meteorological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

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



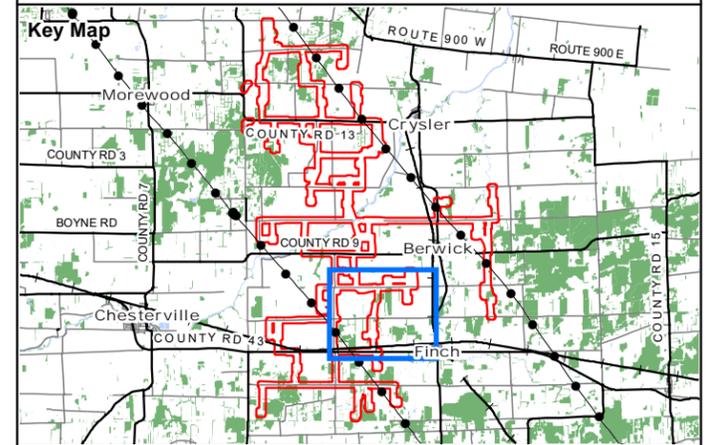
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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (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
- Treated As Significant Seasonal Concentration Areas***
- Bat Maternity Colony (BMA)

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

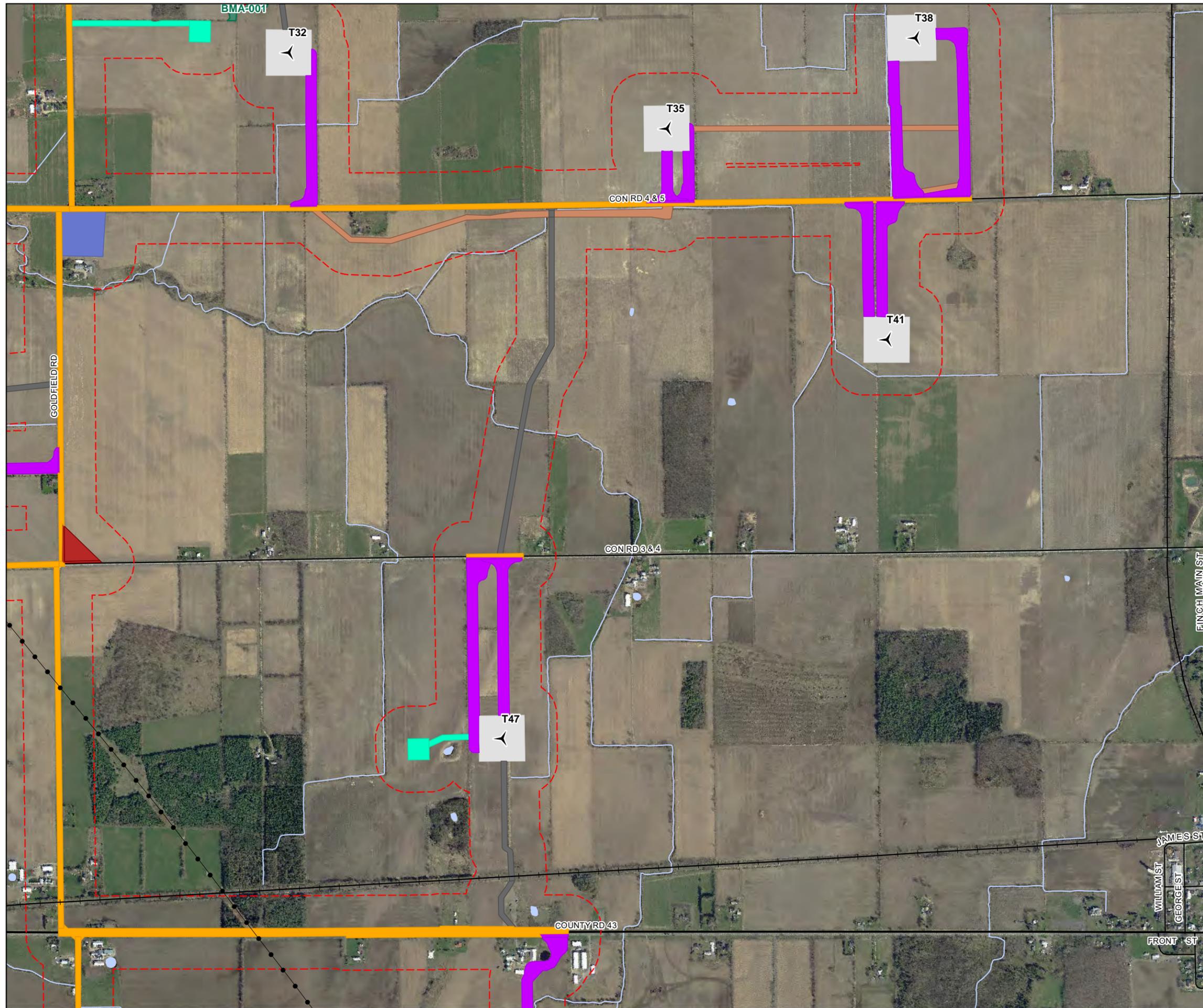


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Project: 1756
Date: July 10, 2017

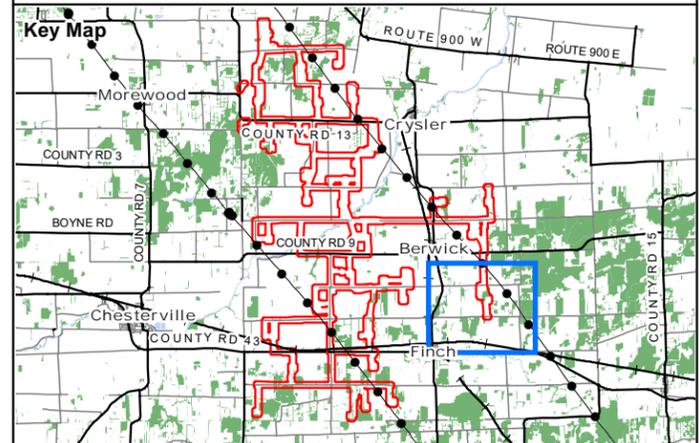
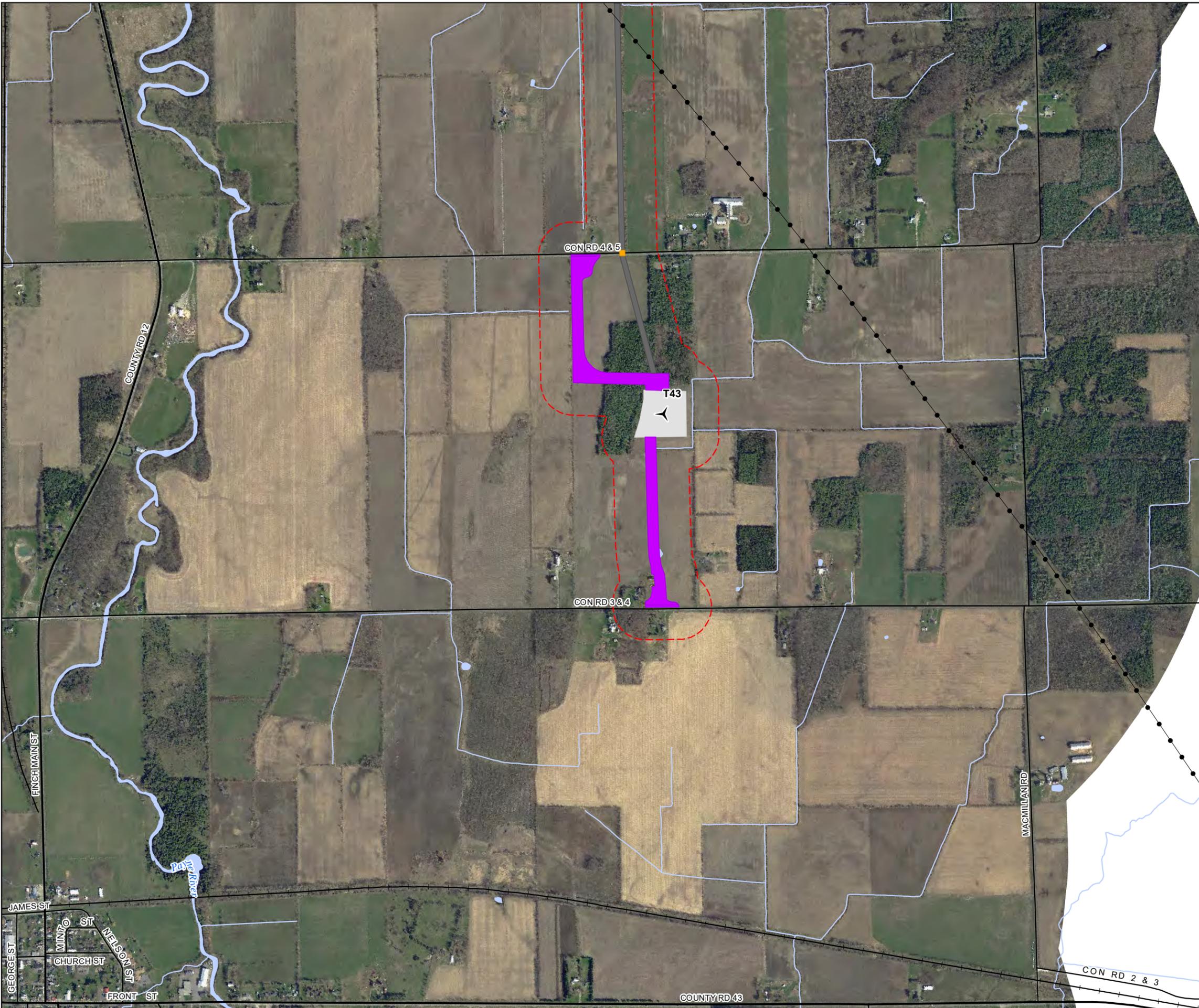
NAD83 - UTM Zone 18
Size: 11x17"
1:14,000

0 200 400 600 800 Meters



Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (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

**Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*

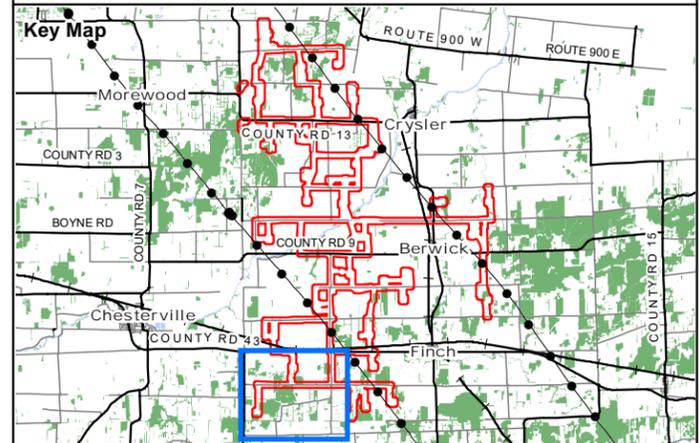
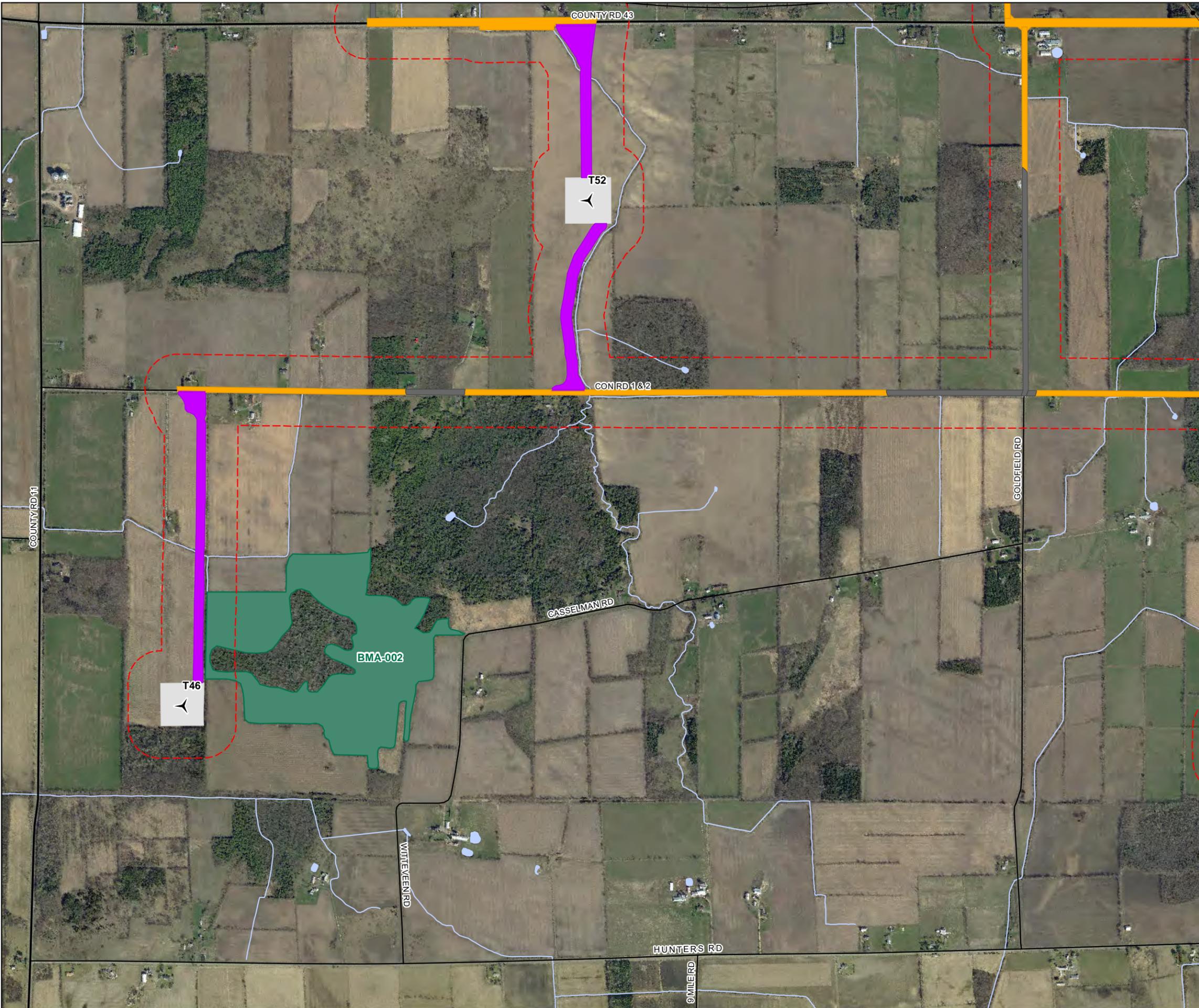


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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Treated As Significant Seasonal Concentration Areas*

- Bat Maternity Colony (BMA)

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

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

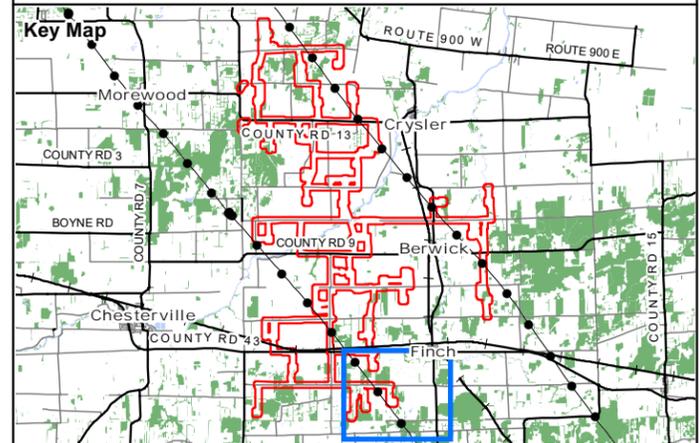
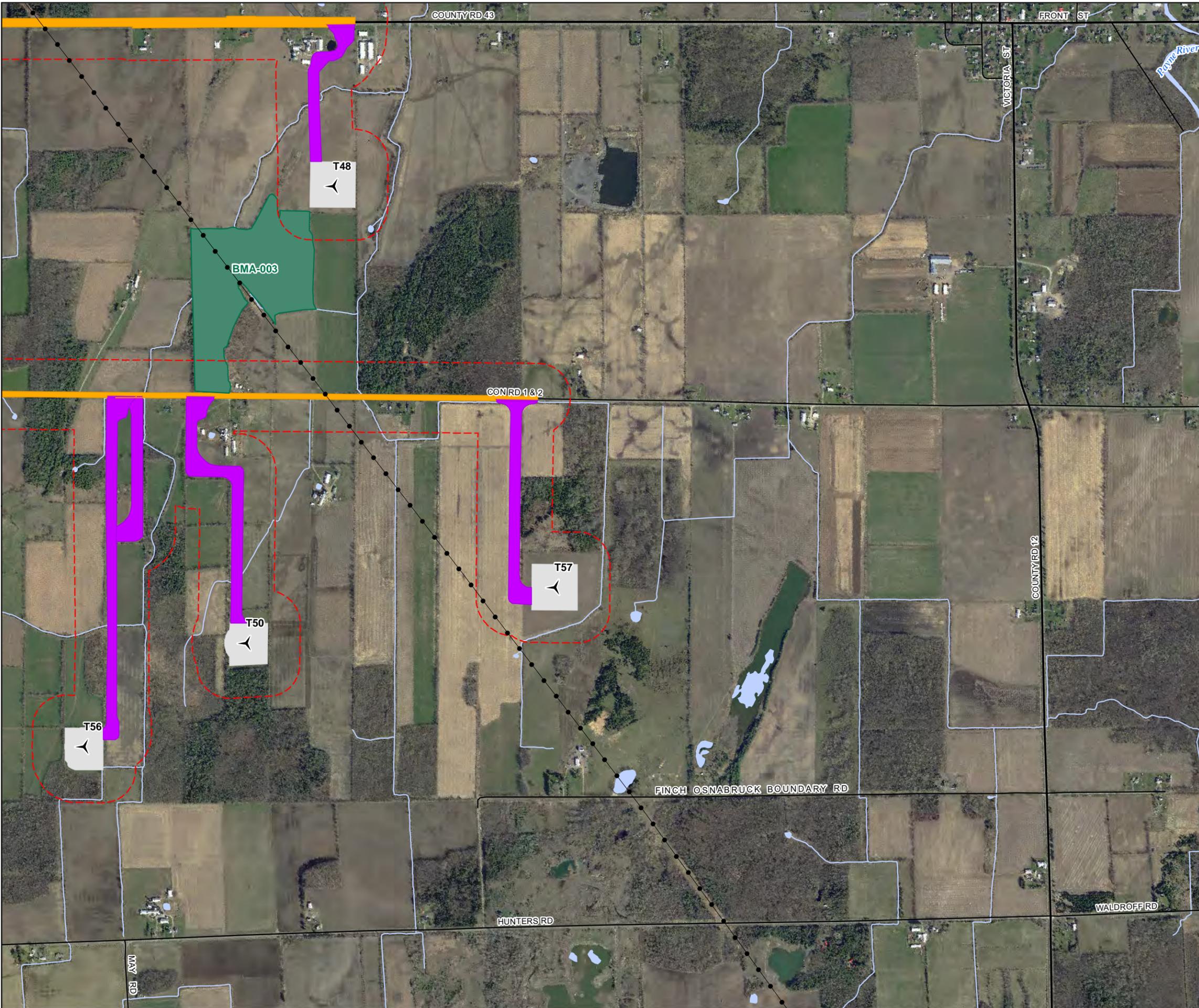


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Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000

Nation Rise Wind Farm

Significant Seasonal Concentration Areas



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- ~ Open Water (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

Treated As Significant Seasonal Concentration Areas*

- ▭ Bat Maternity Colony (BMA)

*Candidate Seasonal Concentration Areas that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



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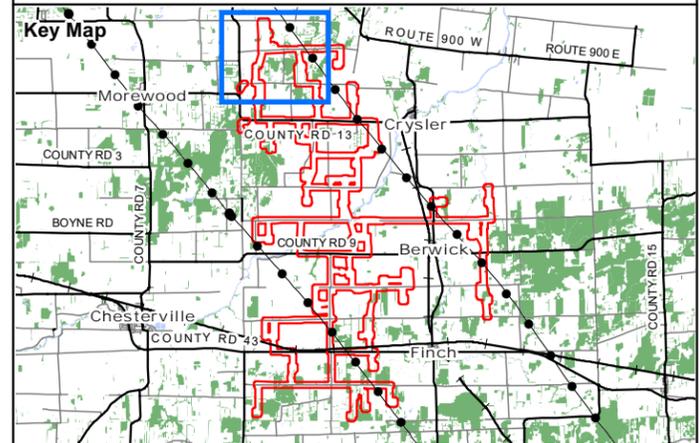
Project: 1756 Date: July 10, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Maps 4-1 to 4-12

Significant Rare Vegetation Communities and Specialized Wildlife Habitats

Nation Rise Wind Farm

Significant Rare Vegetation Communities & Specialized Wildlife Habitat



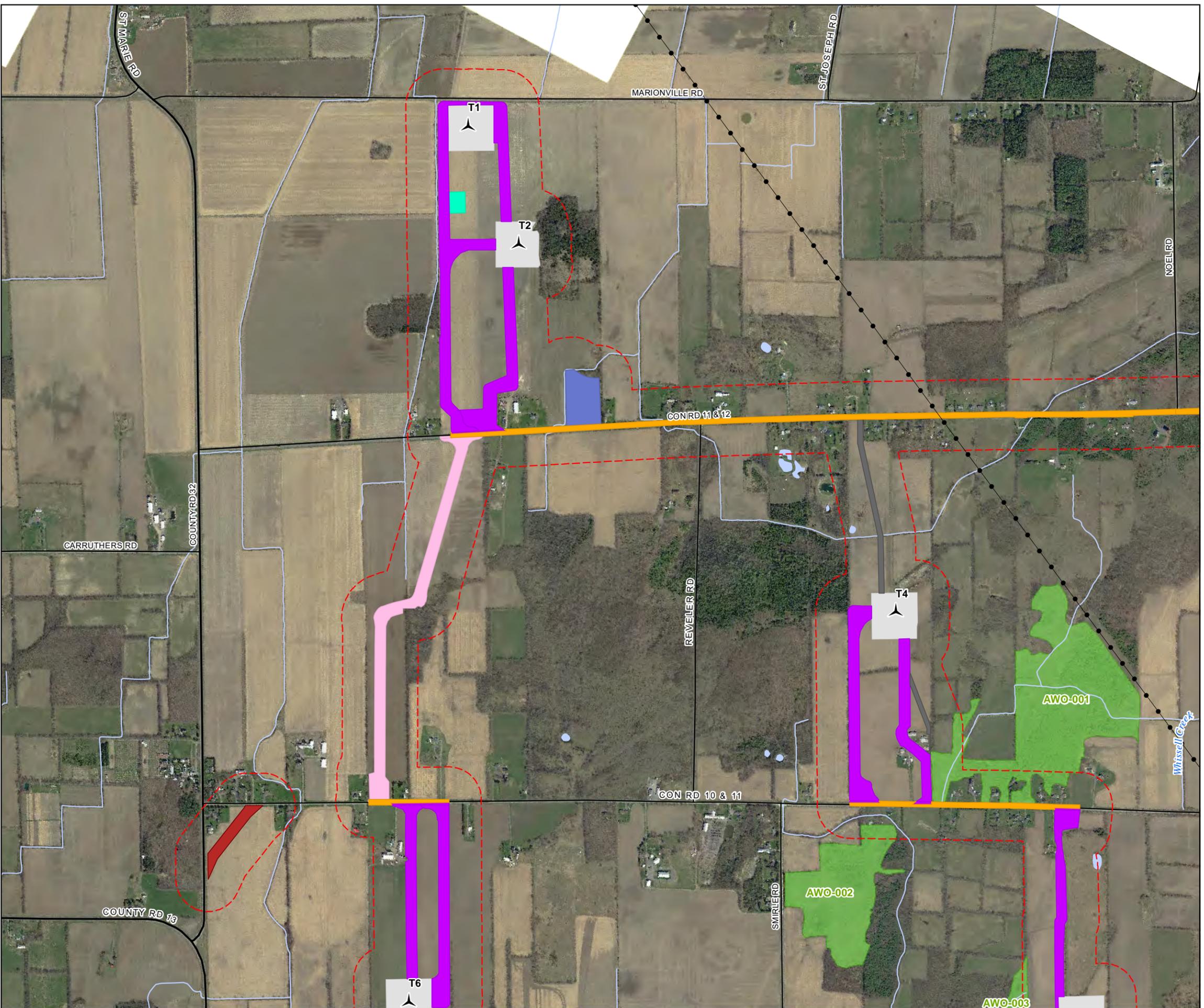
- Legend**
- Utility Line
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (LIO)
 - Project Components**
 - Project Area
 - Proposed Turbine
 - Proposed Access Road and Collection System
 - Proposed Above/Underground Collection System
 - Proposed Underground Collection System
 - Proposed Turbine Laydown, Access Road, Collection Line
 - Proposed Laydown
 - Proposed Temporary Turning Radius
 - Proposed Temporary Access Road for Construction
 - Proposed Meteorological Tower Footprint and Access Road
 - Treated As Significant Specialized Wildlife Habitats***
 - Amphibian Breeding Habitat (Woodland) (AWO)

*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



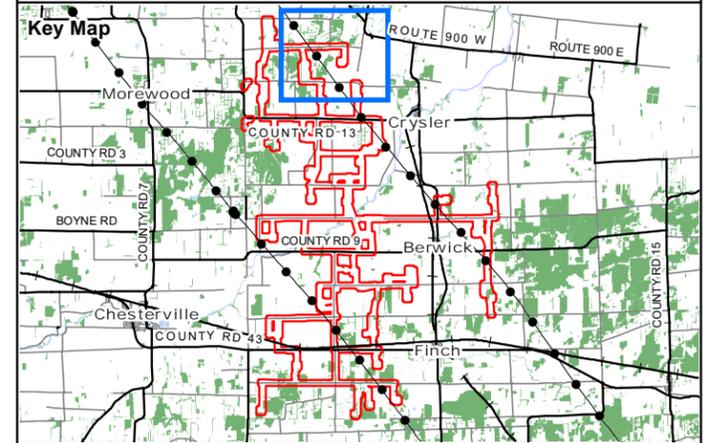
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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm

Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (LIO)
 - ☒ Treated As Significant Rare Vegetation Communities*
 - ☒ Alvar (ALV)
 - ☒ Treated As Significant Specialized Wildlife Habitats*
 - ☒ Amphibian Breeding Habitat (Woodland) (AWO)
- 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

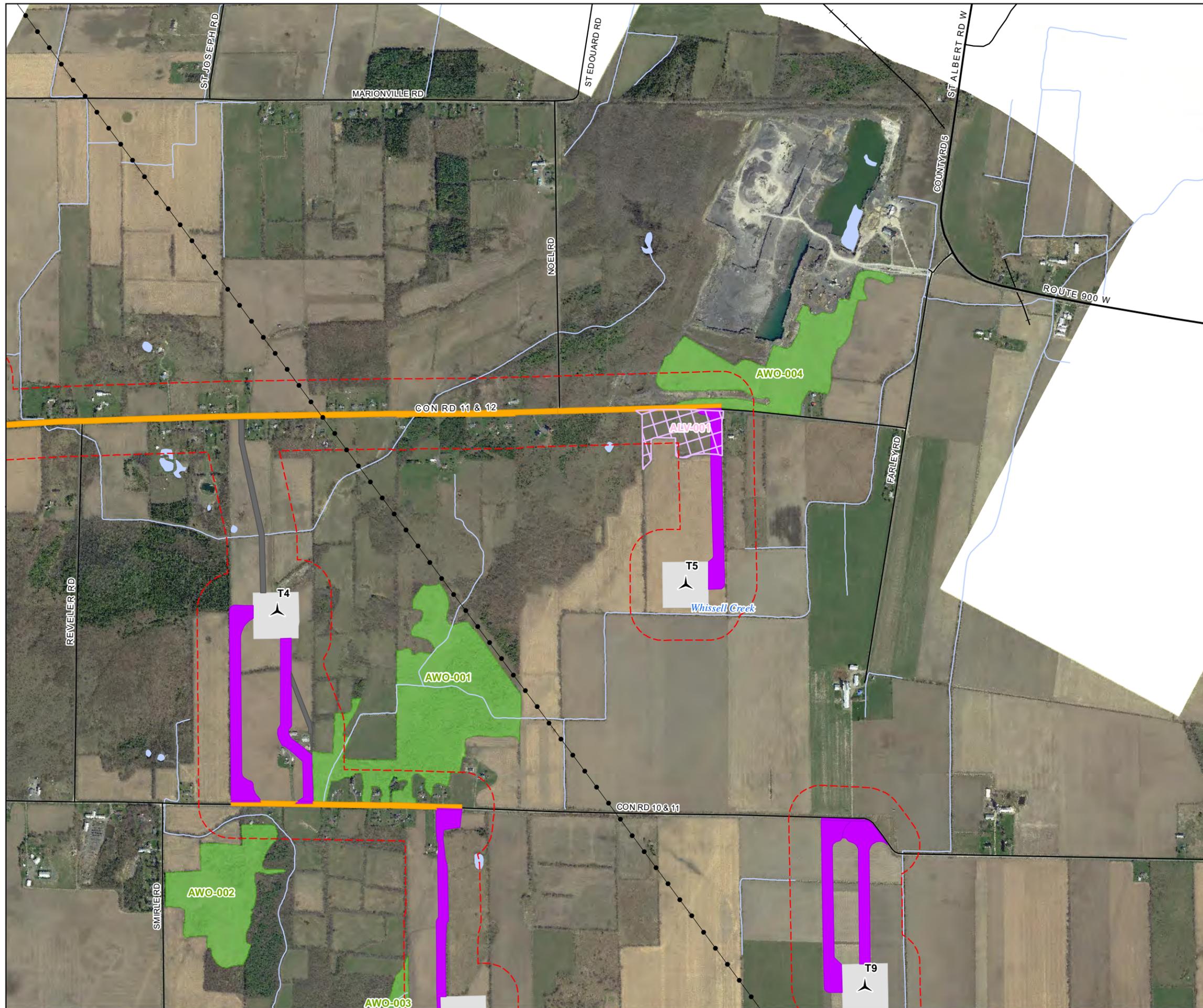
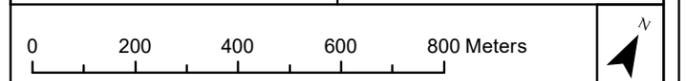
*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



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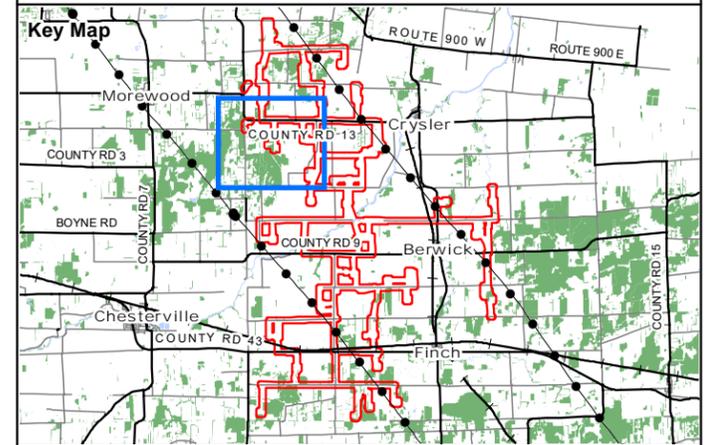
Project: 1756
Date: June 20, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm

Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

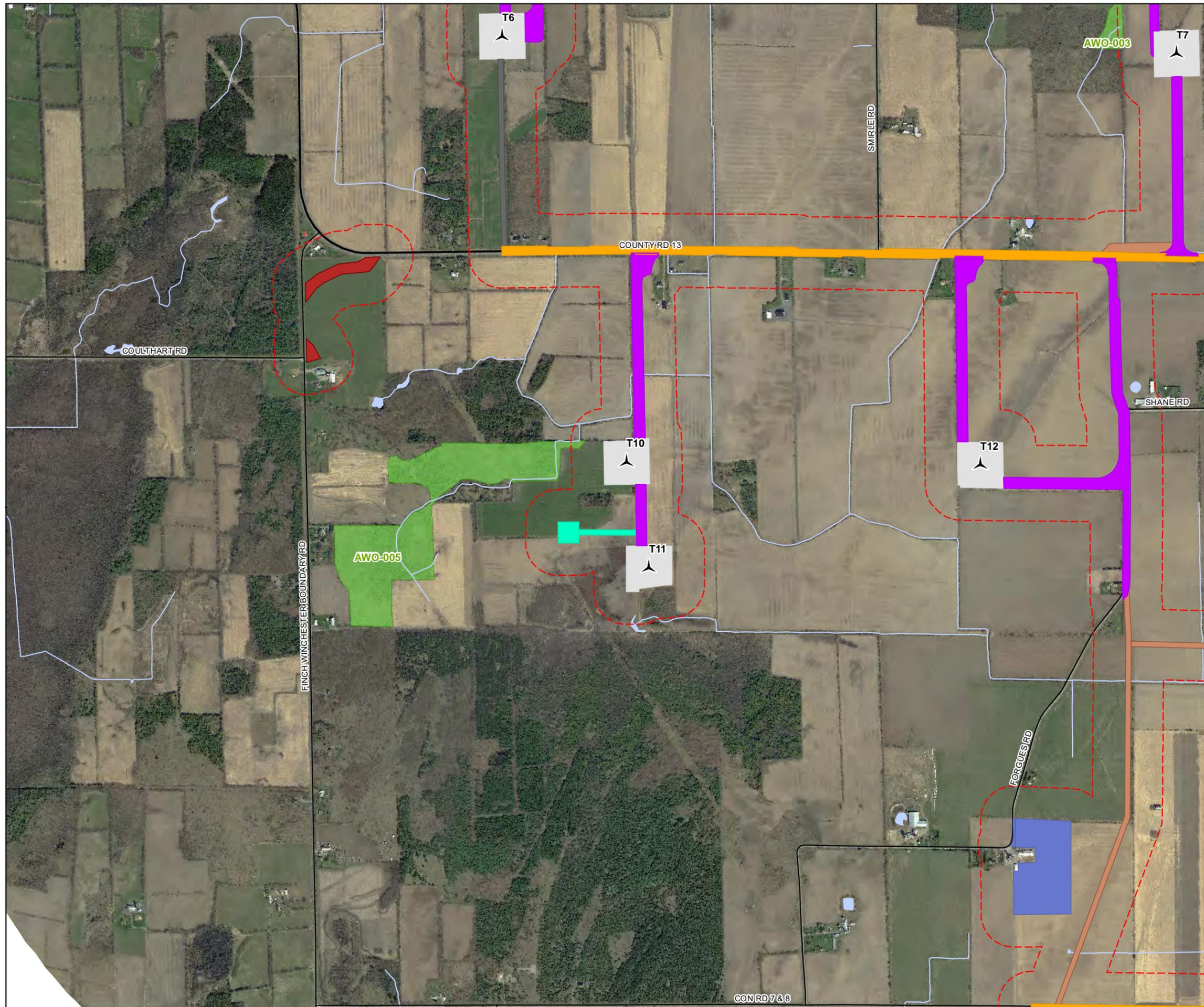
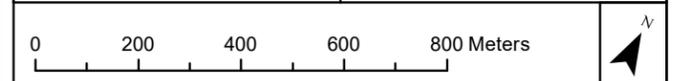
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- ~ Open Water (LIO)
- ▭ Treated As Significant Specialized Wildlife Habitats*
 - ▭ Amphibian Breeding Habitat (Woodland) (AWO)
- ▭ Project Area
- ▲ Proposed Turbine
- ▬ Proposed Access Road and Collection System
- ▬ Proposed Above/Underground Collection System
- ▬ Proposed Underground Collection System
- ▭ Proposed Turbine Laydown, Access Road, Collection Line
- ▭ Proposed Laydown
- ▭ Proposed Temporary Turning Radius
- ▭ Proposed Crane Path
- ▭ Proposed Meteorological Tower Footprint and Access Road

**Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*

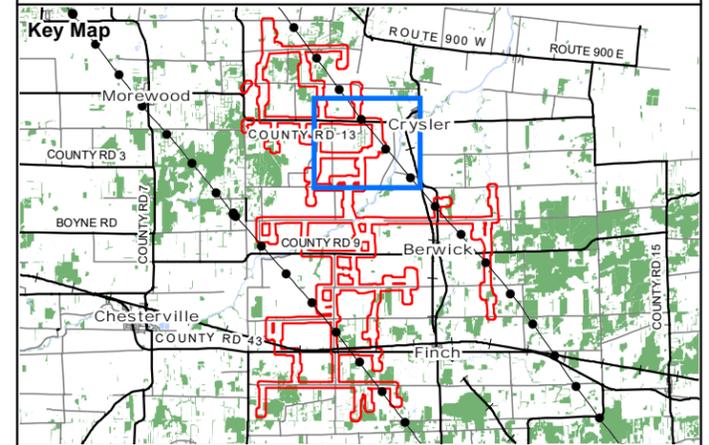


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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
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Nation Rise Wind Farm Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

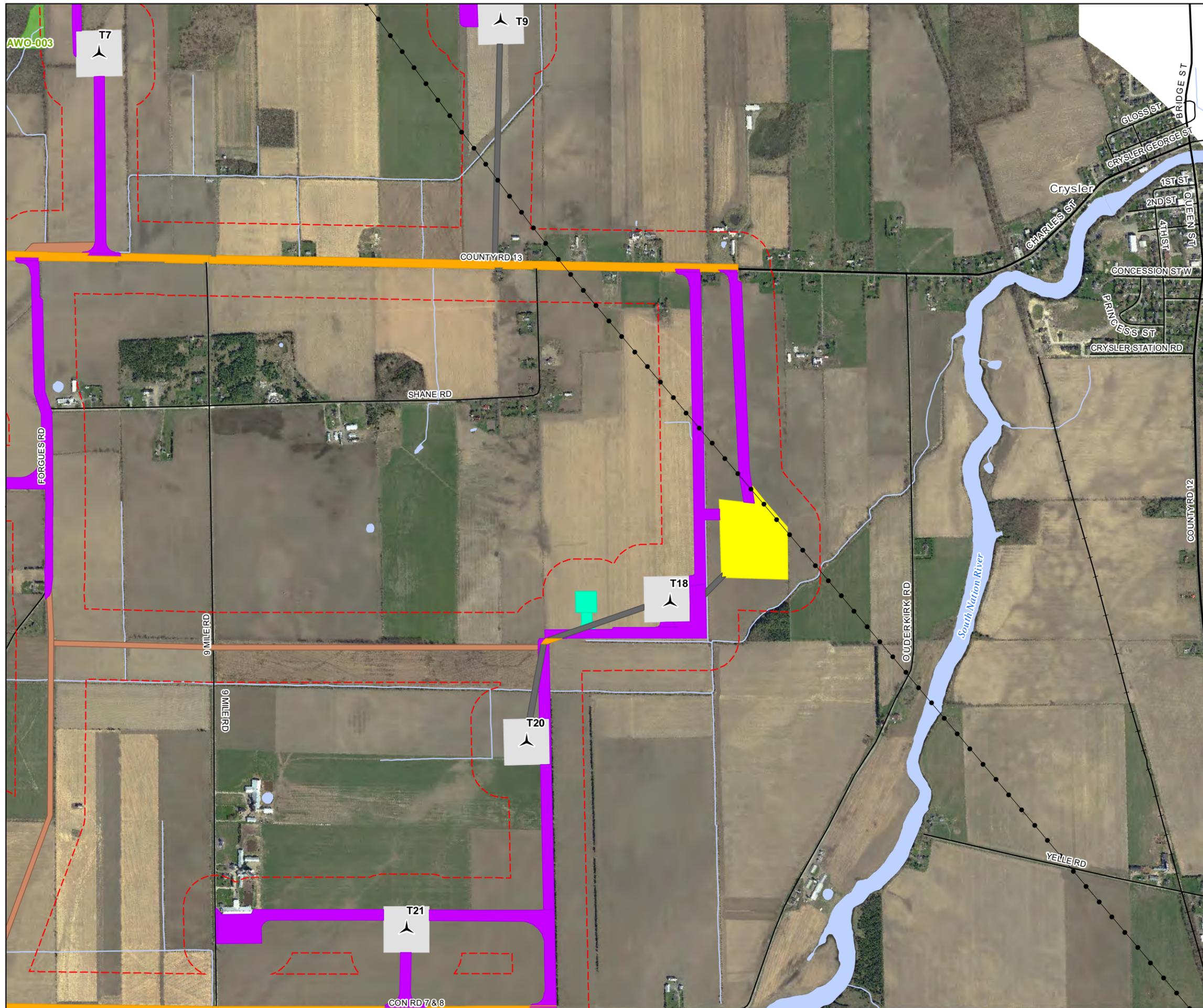
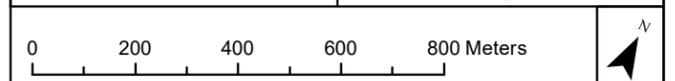
- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Project Components**
- ▭ Project Area
- ▲ Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road
- Proposed Substation
- Treated As Significant Specialized Wildlife Habitats***
- Amphibian Breeding Habitat (Woodland) (AWO)

*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



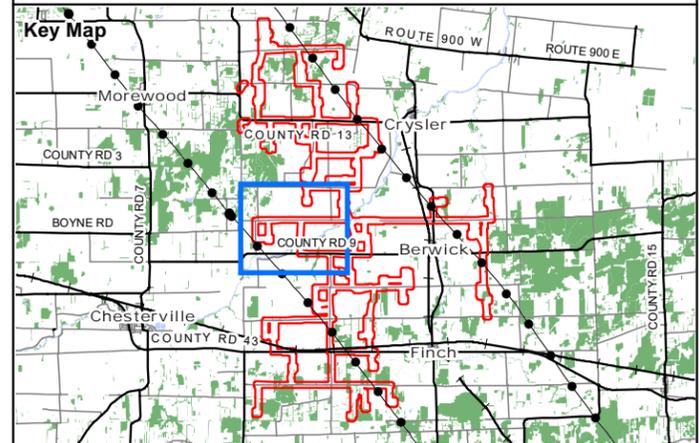
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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
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Nation Rise Wind Farm

Significant Rare Vegetation Communities & Specialized Wildlife Habitat



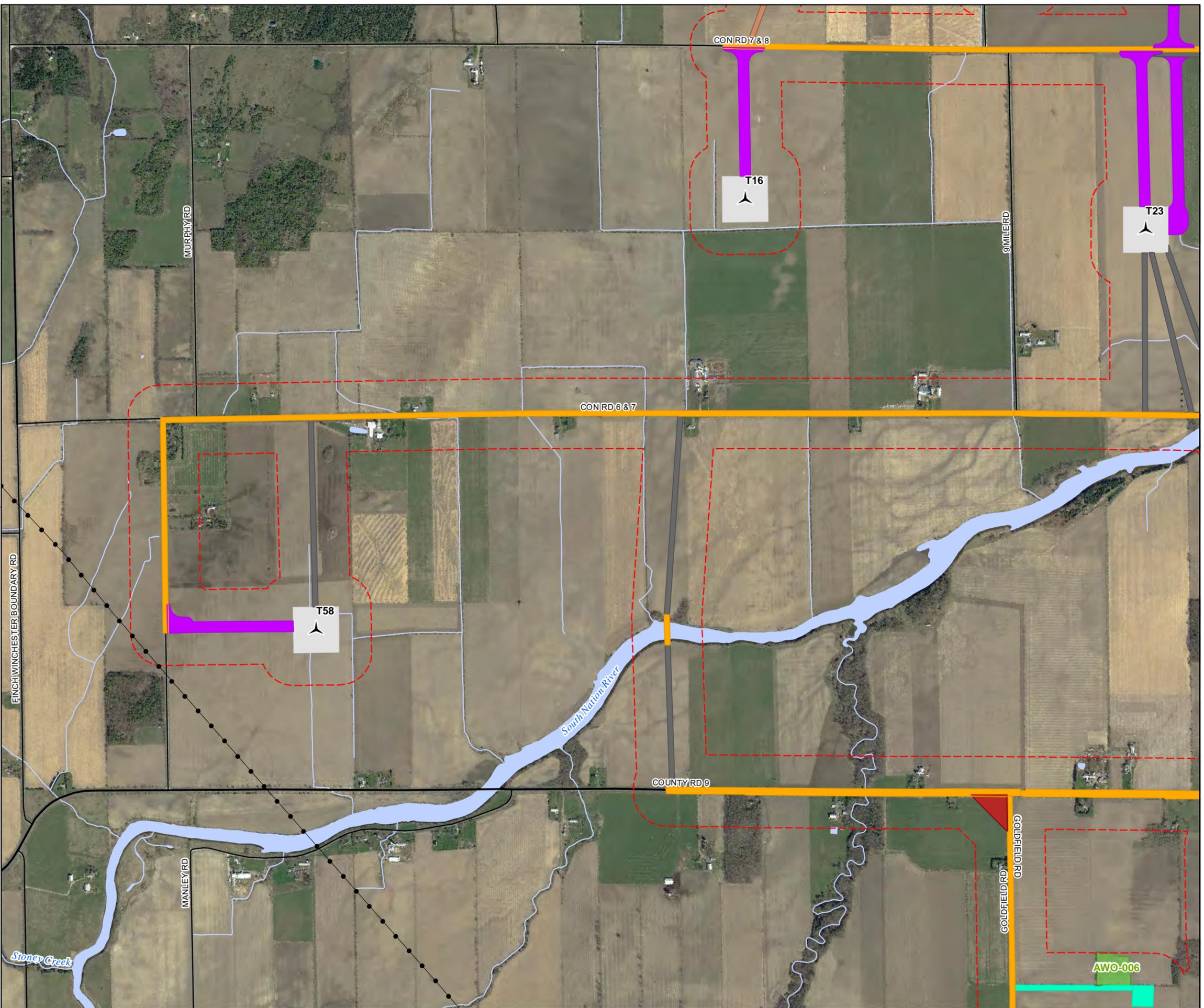
- Legend**
- Utility Line
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (LIO)
 - ▭ Project Area
 - ▲ Proposed Turbine
 - Proposed Access Road and Collection System
 - Proposed Above/Underground Collection System
 - Proposed Underground Collection System
 - Proposed Turbine Laydown, Access Road, Collection Line
 - Proposed Temporary Turning Radius
 - Proposed Crane Path
 - Proposed Meteorological Tower Footprint and Access Road
 - Treated As Significant Specialized Wildlife Habitats*
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*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

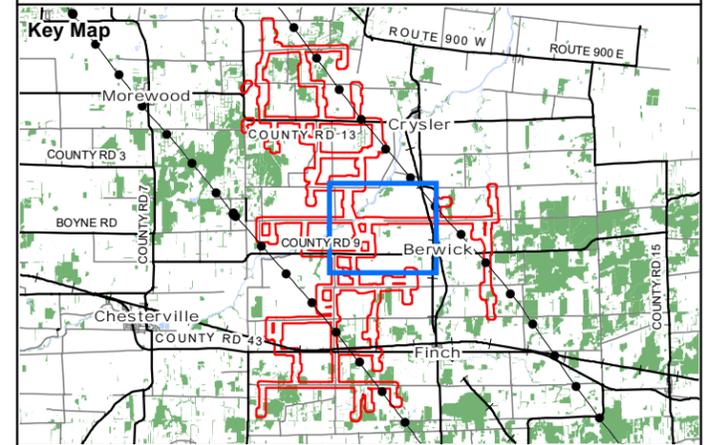


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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

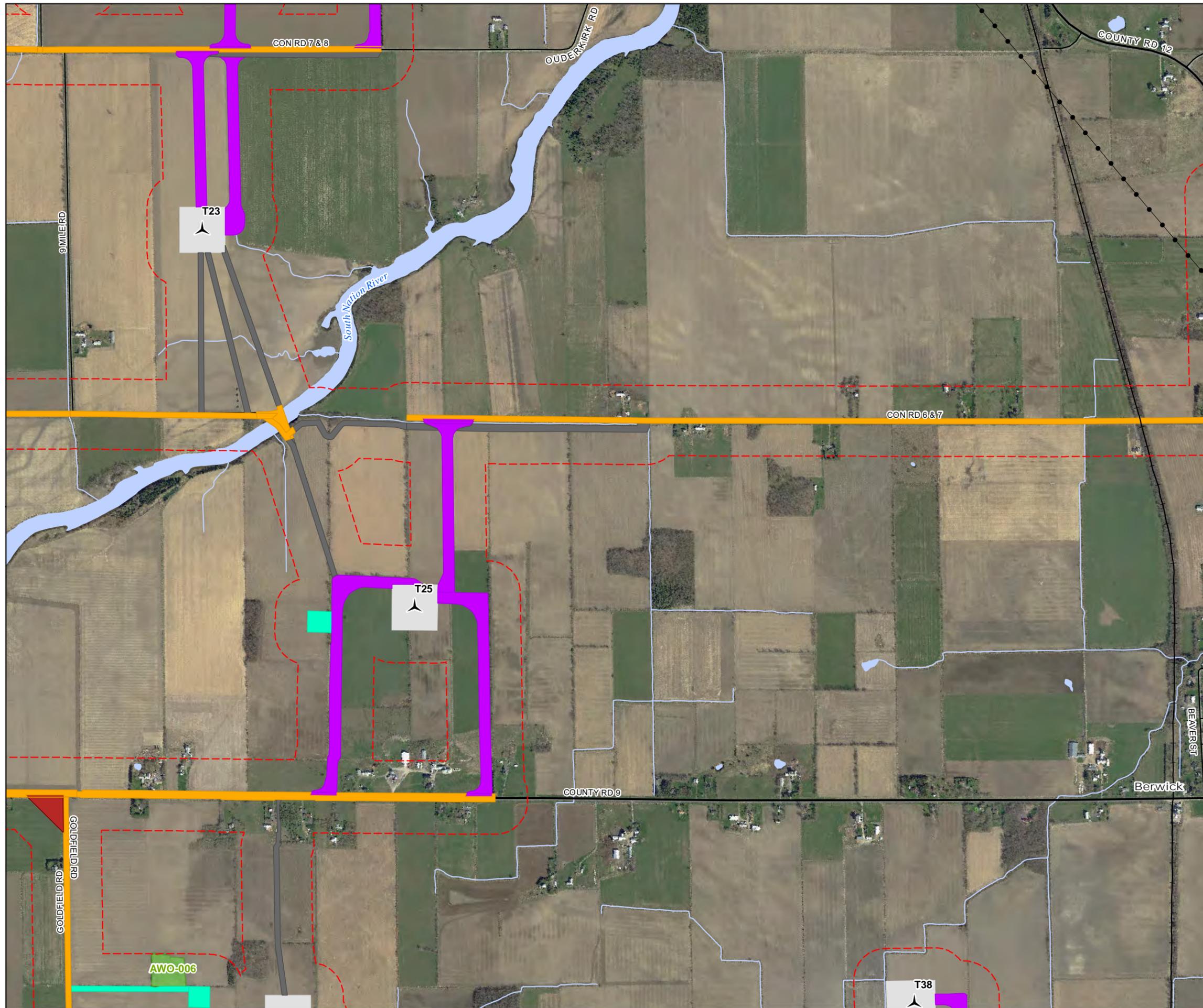
- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (LIO)
- Project Components**
- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
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*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

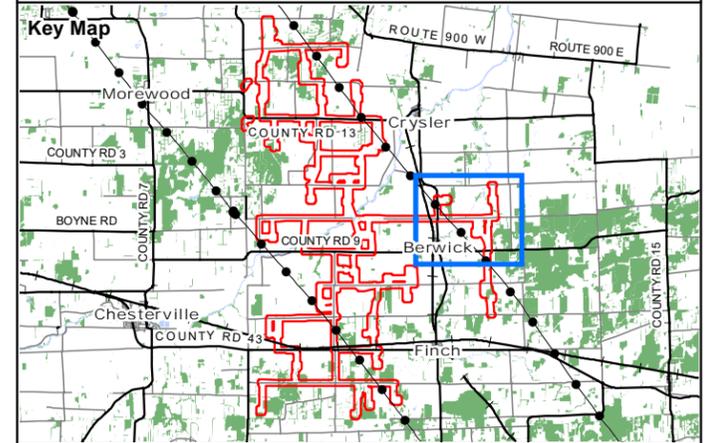


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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

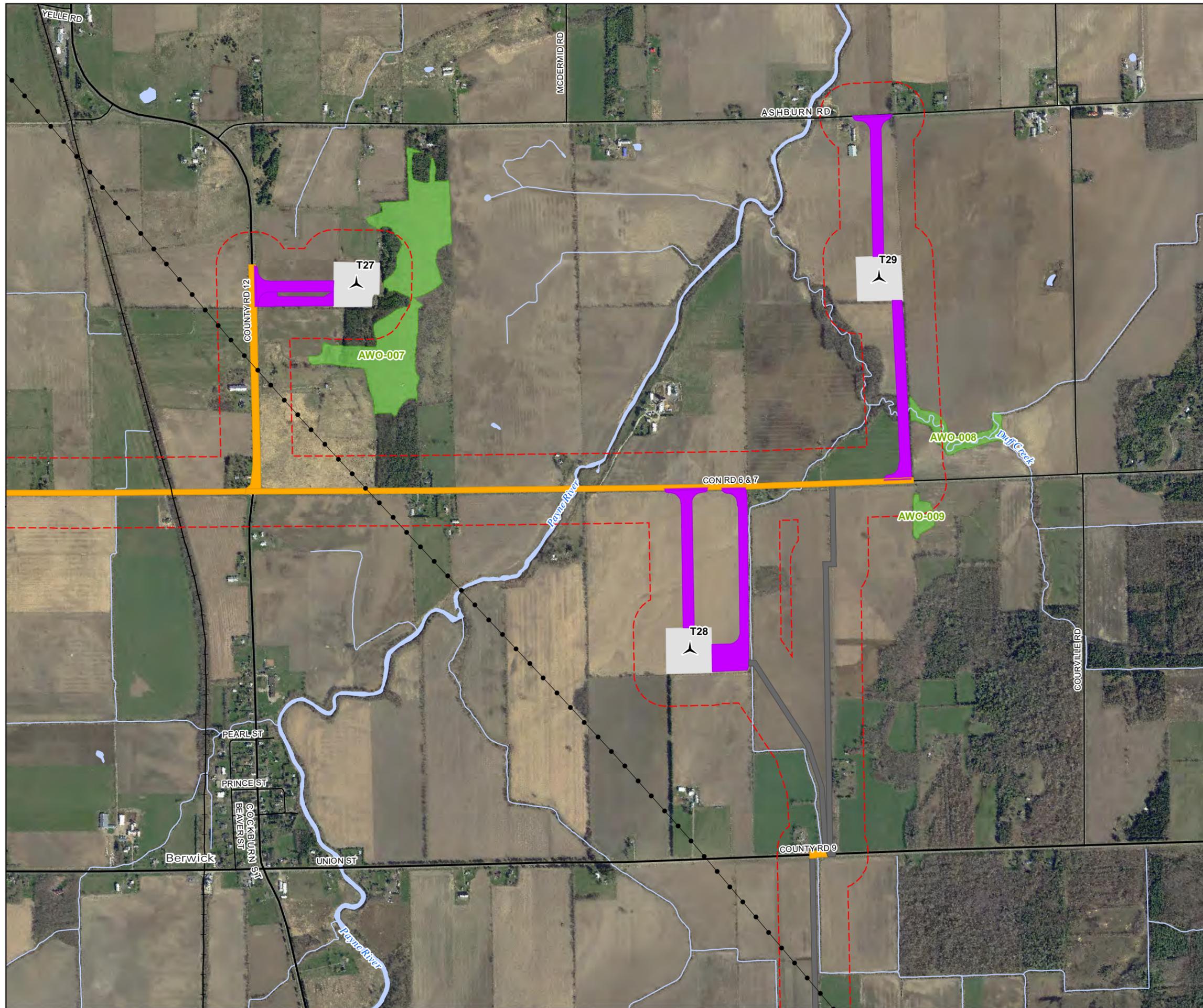
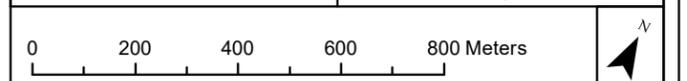
- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (LIO)
- Project Components**
- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Treated As Significant Specialized Wildlife Habitats***
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*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

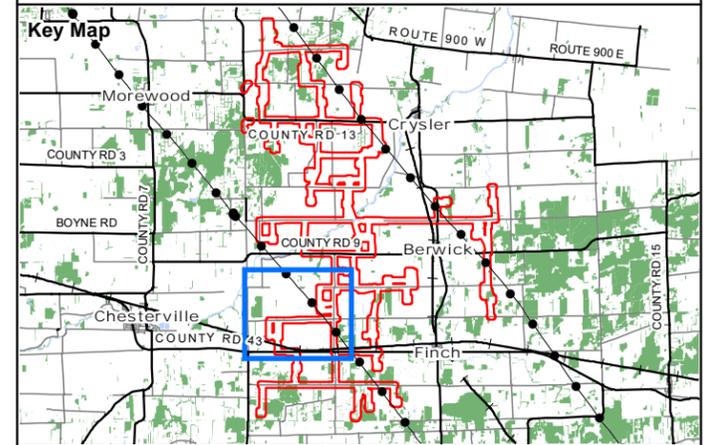


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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
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Nation Rise Wind Farm Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (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
- Proposed Temporary Turning Radius
- Proposed Meteorological Tower Footprint and Access Road
- Treated As Significant Specialized Wildlife Habitats***
- Amphibian Breeding Habitat (Woodland) (AWO)

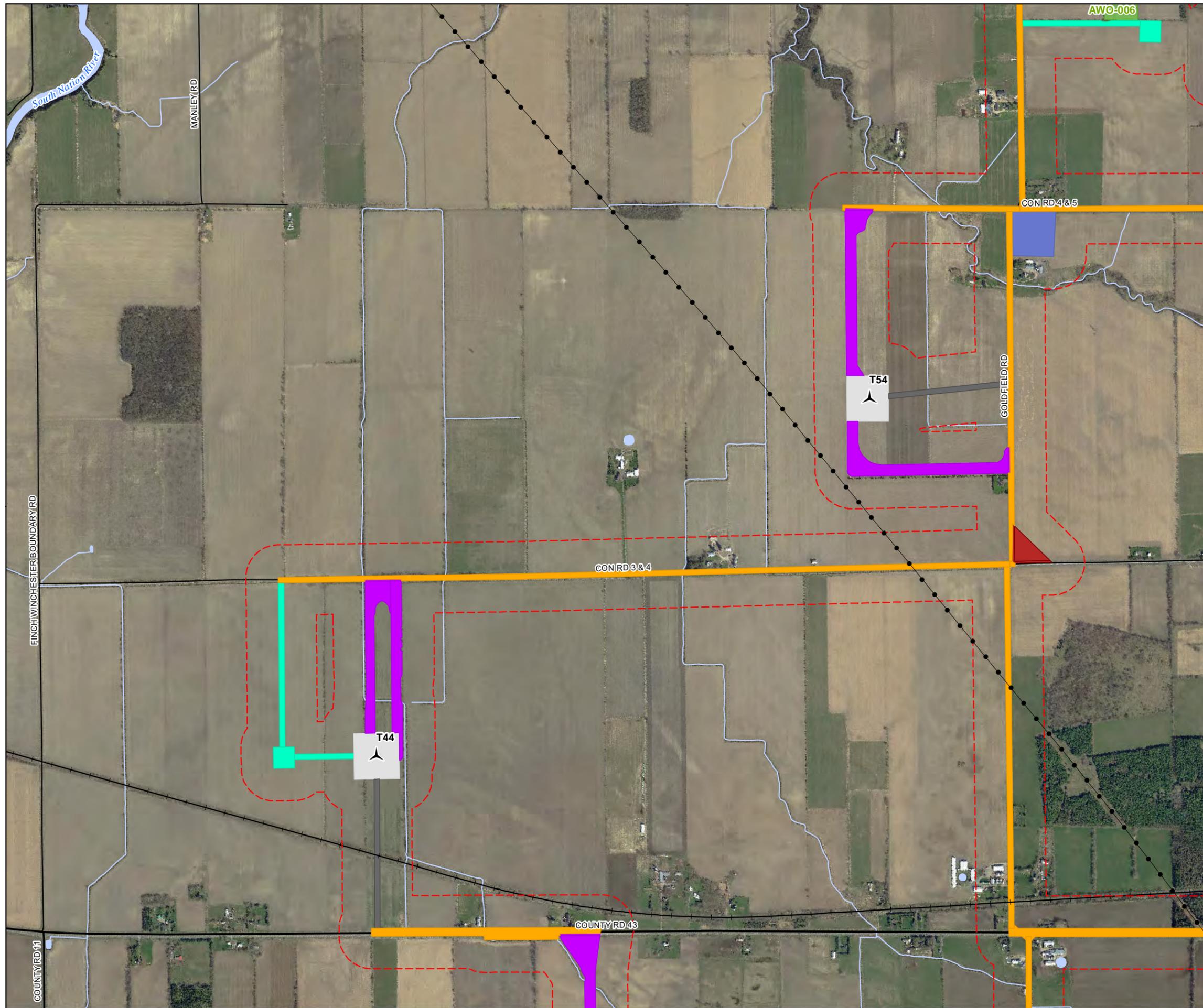
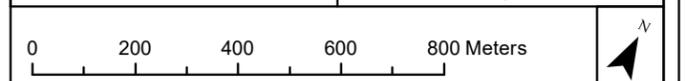
*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



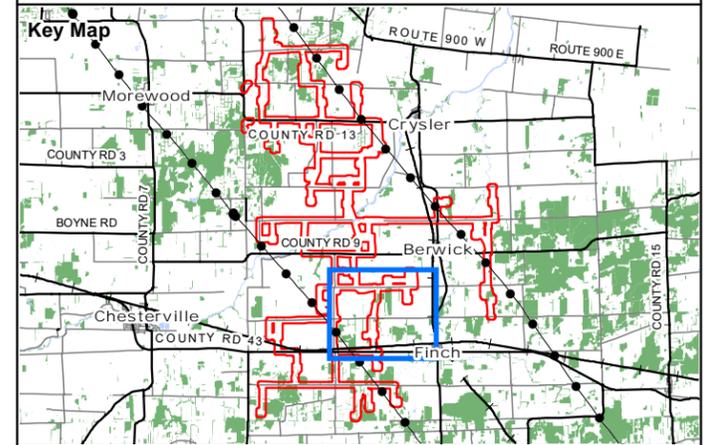
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Project: 1756
Date: June 20, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (LIO)
 - Treated As Significant Rare Vegetation Communities*
 - ▨ Tallgrass Prairie
 - Treated As Significant Specialized Wildlife Habitats*
 - Amphibian Breeding Habitat (Woodland) (AWO)
- 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
 - Proposed Temporary Turning Radius
 - Proposed Crane Path
 - Proposed Meteorological Tower Footprint and Access Road

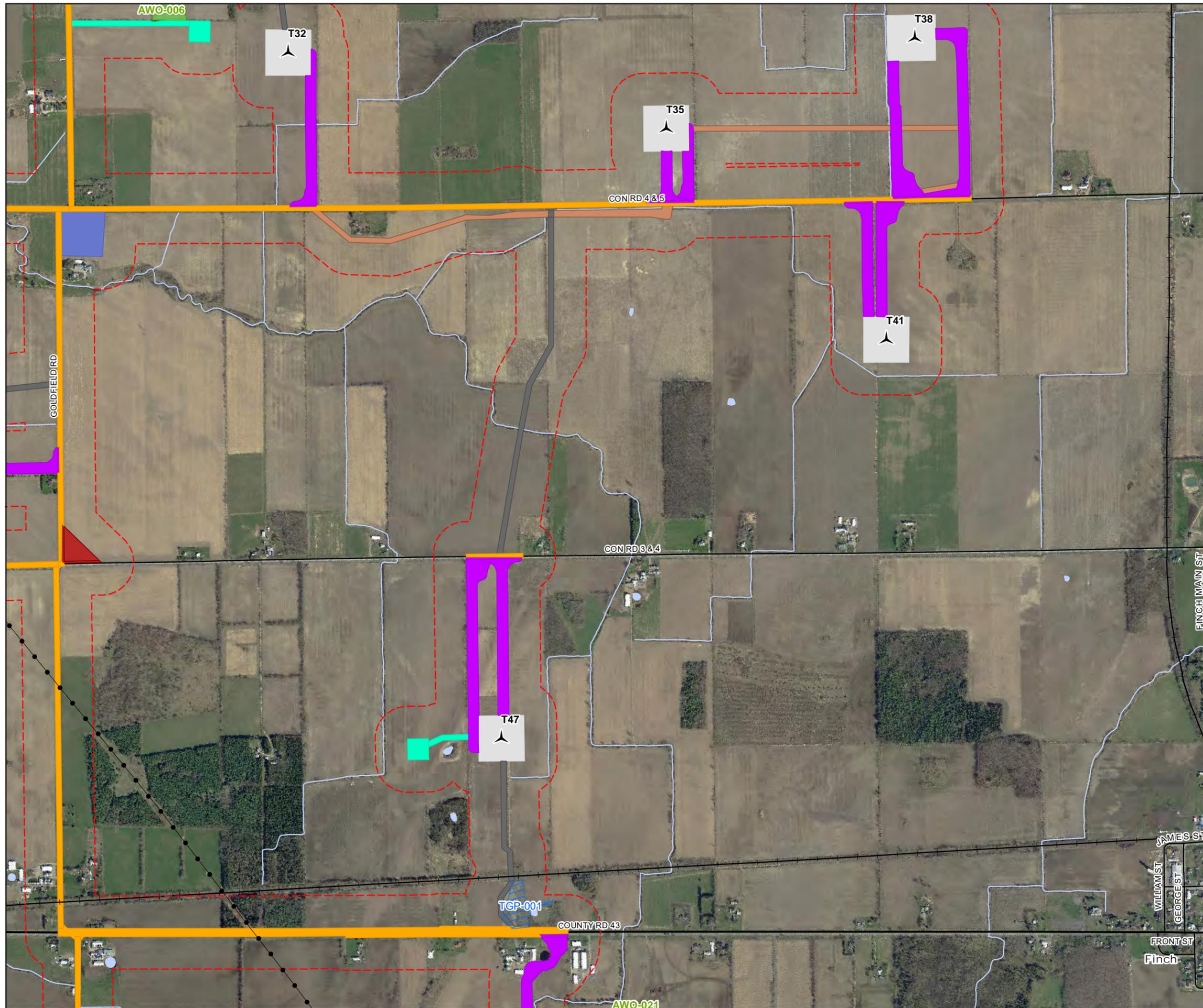
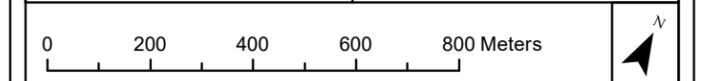
*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



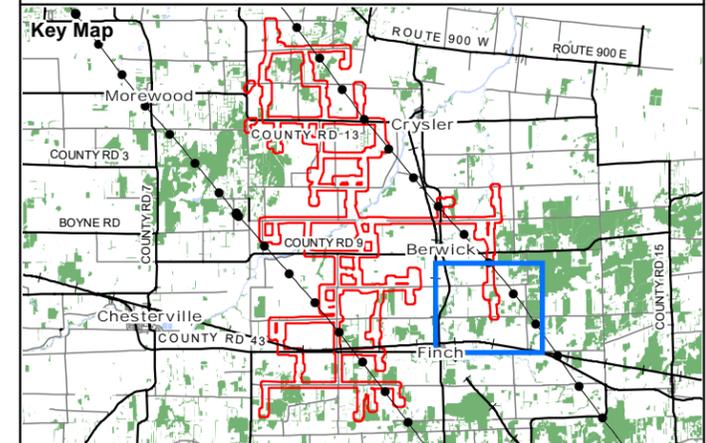
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Project: 1756
Date: June 20, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm Significant Rare Vegetation Communities & Specialized Wildlife Habitat



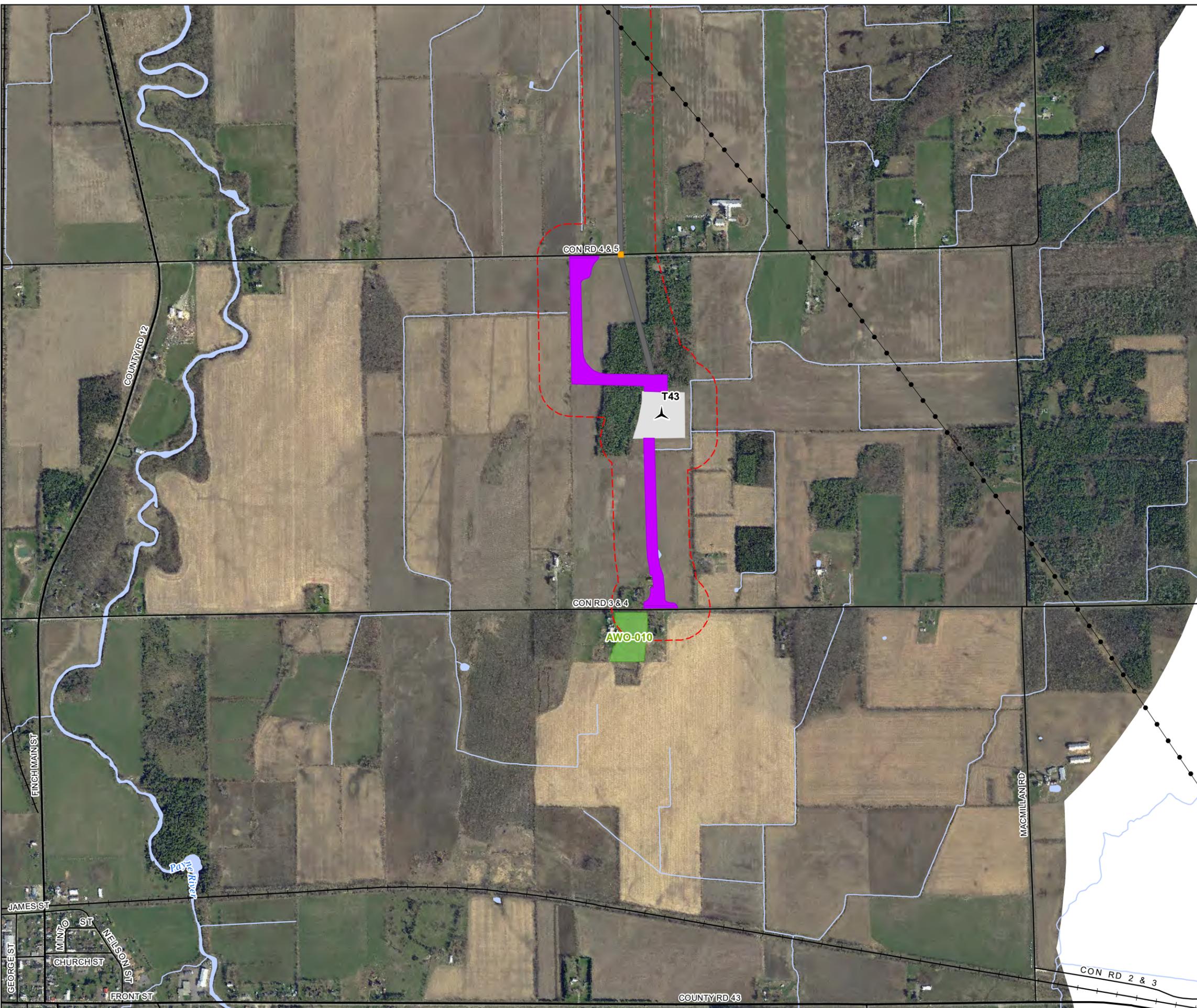
- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (LIO)
- Project Components**
- ▭ Project Area
 - ▲ Proposed Turbine
 - Proposed Access Road and Collection System
 - Proposed Above/Underground Collection System
 - Proposed Underground Collection System
 - Proposed Turbine Laydown, Access Road, Collection Line
- Treated As Significant Specialized Wildlife Habitats***
- Amphibian Breeding Habitat (Woodland) (AWO)

*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



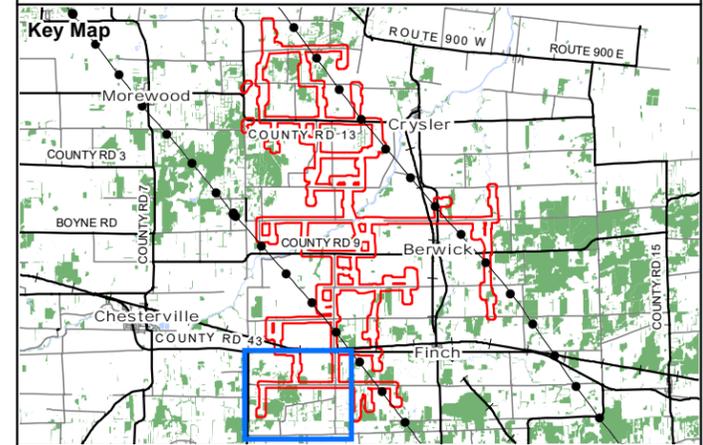
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Project: 1756 Date: June 20, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm

Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - Permanent Watercourse (LIO)
 - Open Water (LIO)
 - 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
- Treated As Significant Rare Vegetation Communities***
- ▨ Savannah
 - ▨ Tallgrass Prairie
- Treated As Significant Specialized Wildlife Habitats***
- Amphibian Breeding Habitat (Woodland) (AWO)

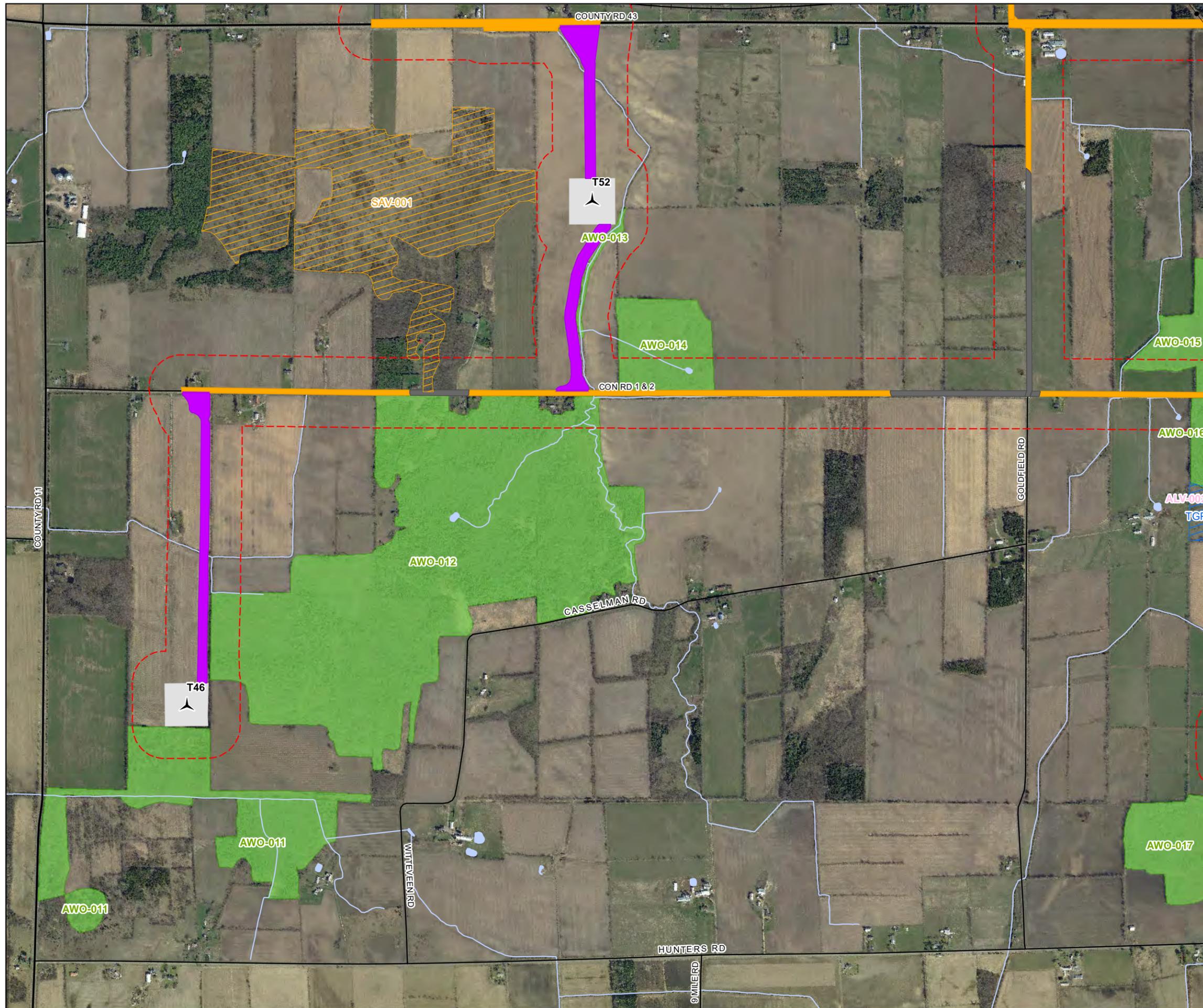
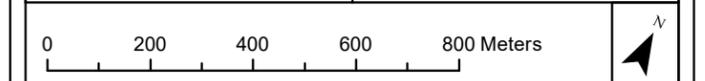
*Candidate Specialized Wildlife Habitats & Rare Vegetation Communities that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



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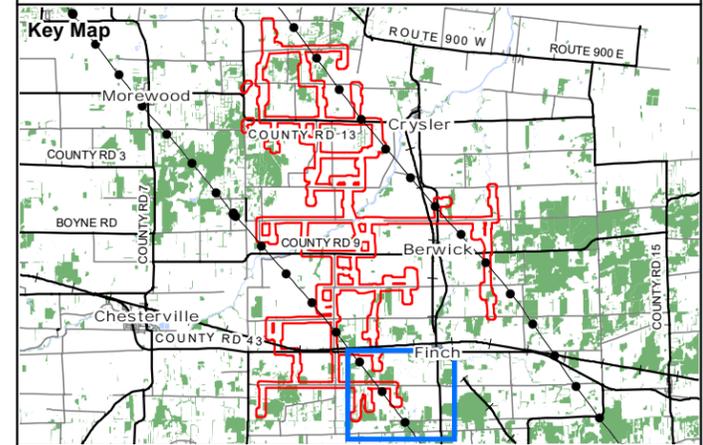
Project: 1756
Date: June 20, 2017

NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm

Significant Rare Vegetation Communities & Specialized Wildlife Habitat



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (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
- Significant Rare Vegetation Communities**
- Old Growth Forest (OGF)
- Significant Specialized Wildlife Habitats**
- Amphibian Breeding Habitat (Woodland) (AWO)
- Treated As Significant Rare Vegetation Communities***
- Alvar (ALV)
- Tallgrass Prairie
- Treated As Significant Specialized Wildlife Habitats***
- Amphibian Breeding Habitat (Woodland) (AWO)

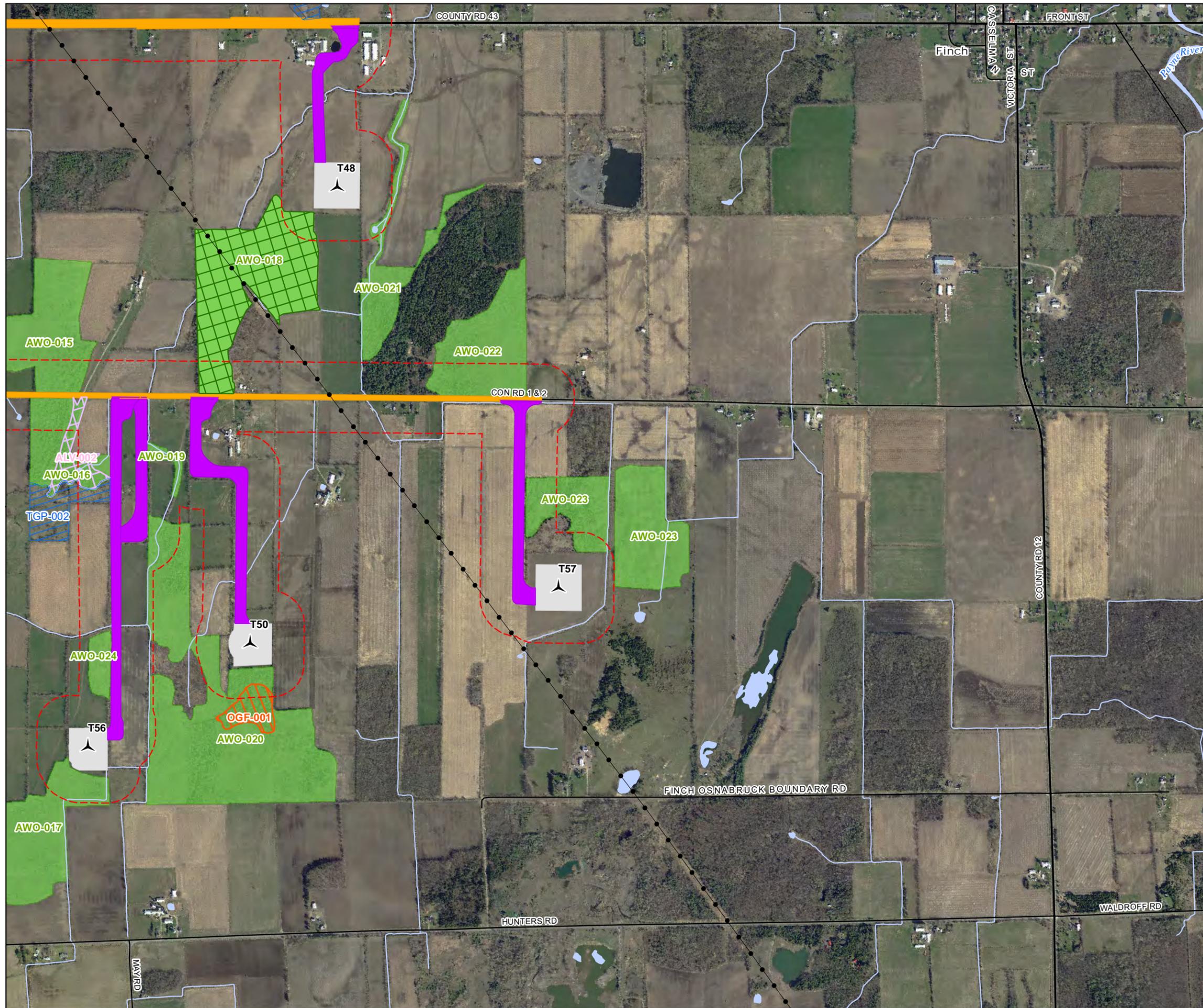
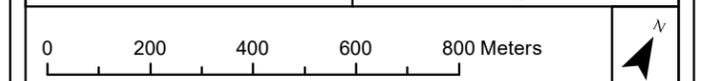
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Project: 1756
Date: June 20, 2017

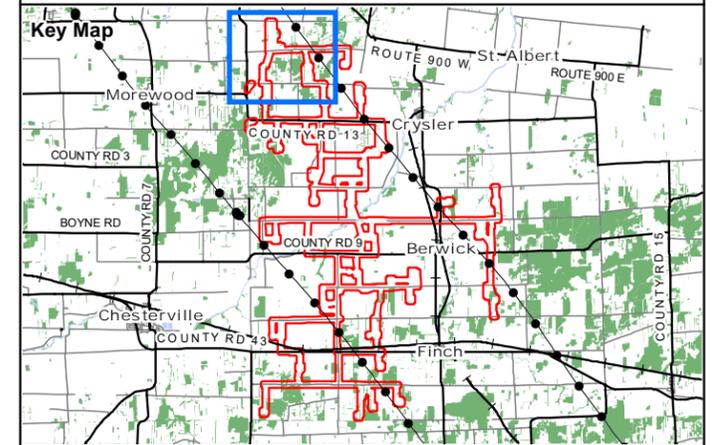
NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Maps 5-1 to 5-12
Significant Habitats for Species of Conservation Concern

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- 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

Treated As Significant Habitats for Species of Conservation Concern*

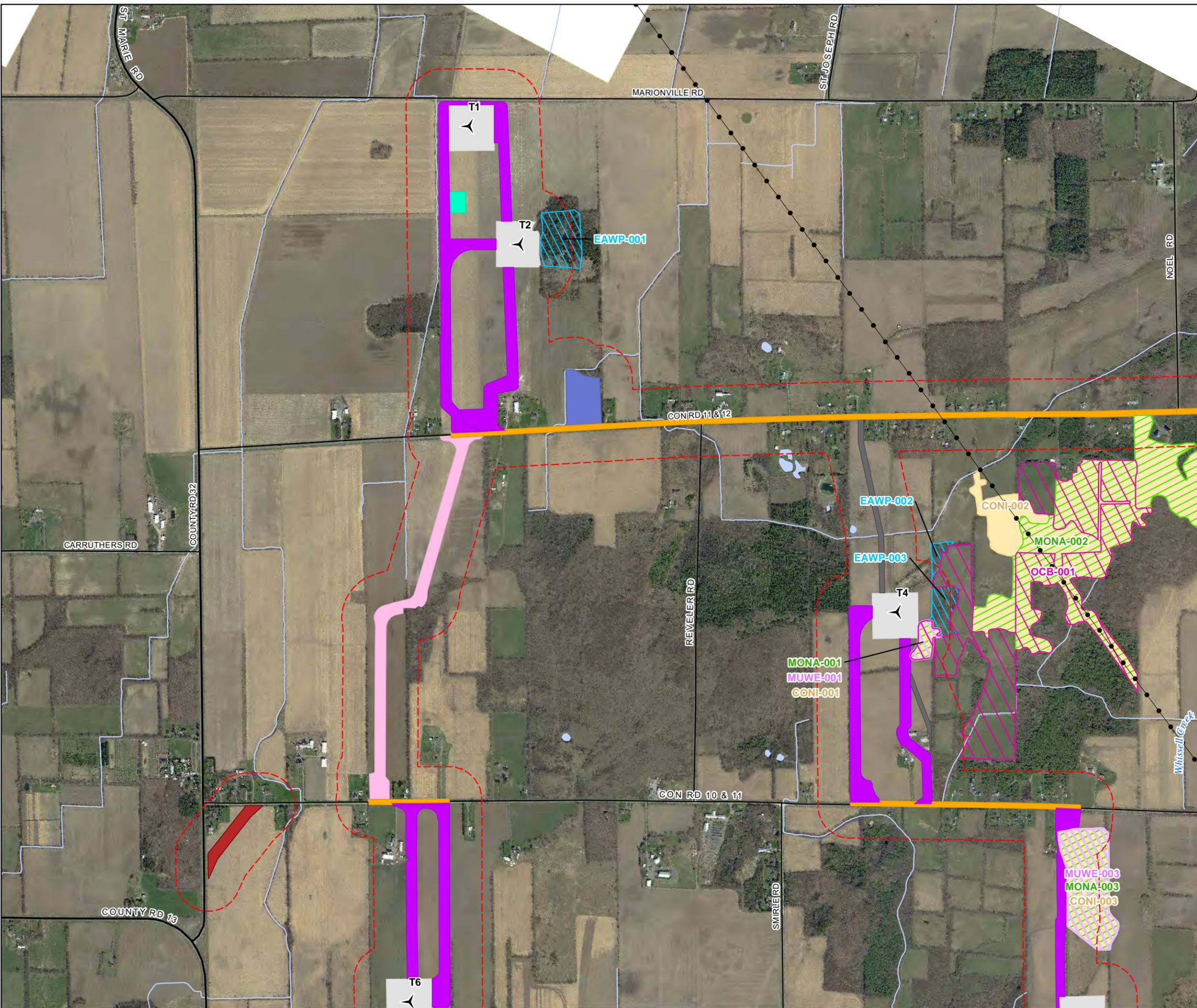
- Eastern Wood-Pewee (EAWP)
- Open Country Bird Breeding Habitat (OCB)
- Common Nighthawk (CONI)
- Mühlenberg's Weissia (MUWE)
- Monarch (MONA)

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



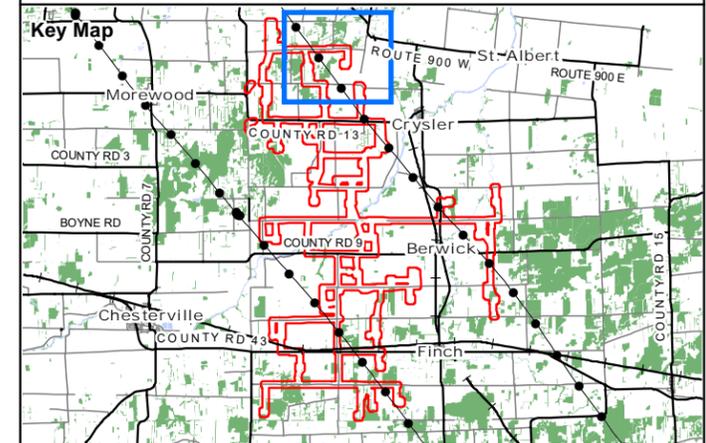
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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



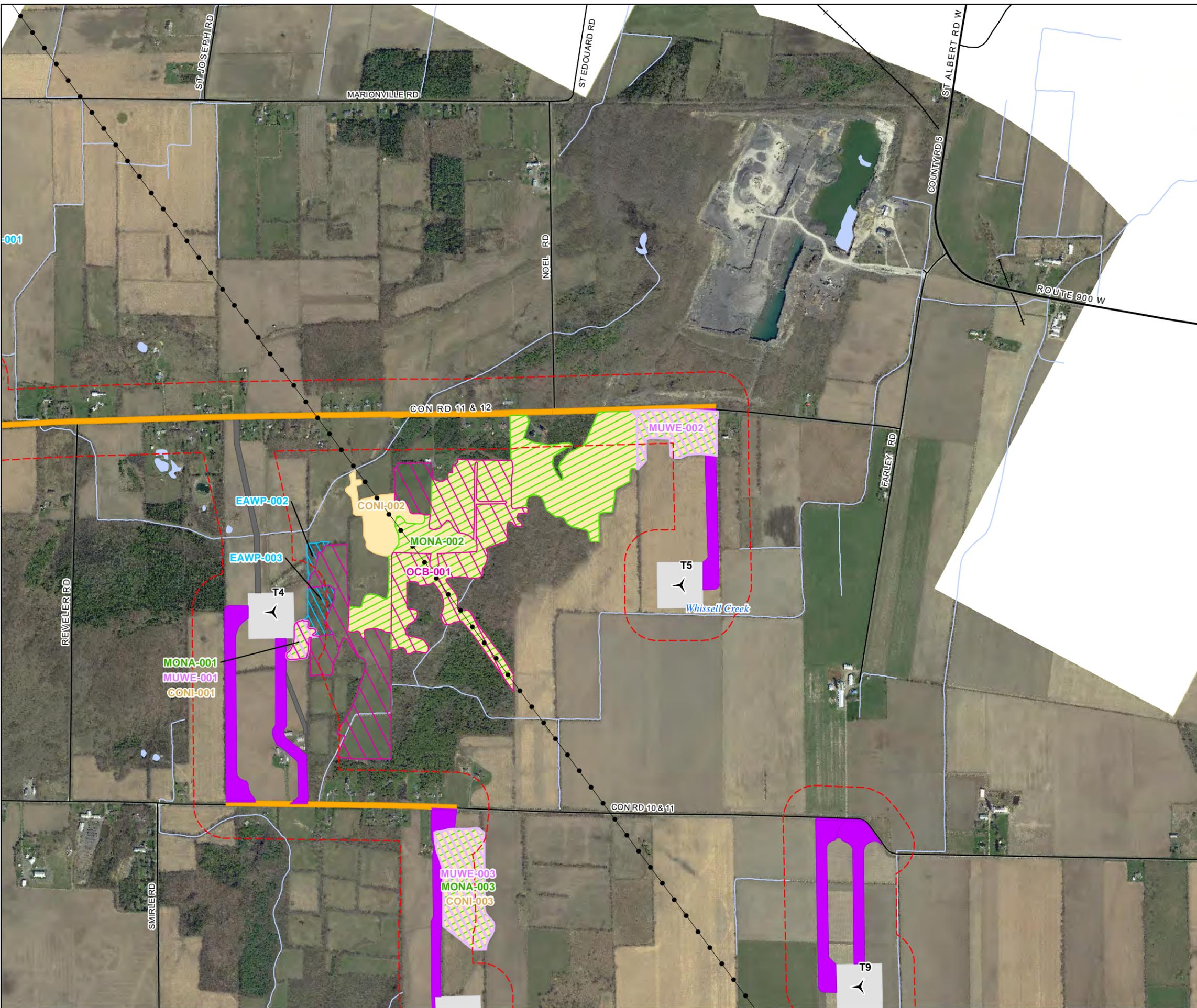
Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - Permanent Watercourse (LIO)
 - Open Water (LIO)
 - 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
-
- Treated As Significant Habitats for Species of Conservation Concern***
- Eastern Wood-Pewee (EAWP)
 - Open Country Bird Breeding Habitat (OCB)
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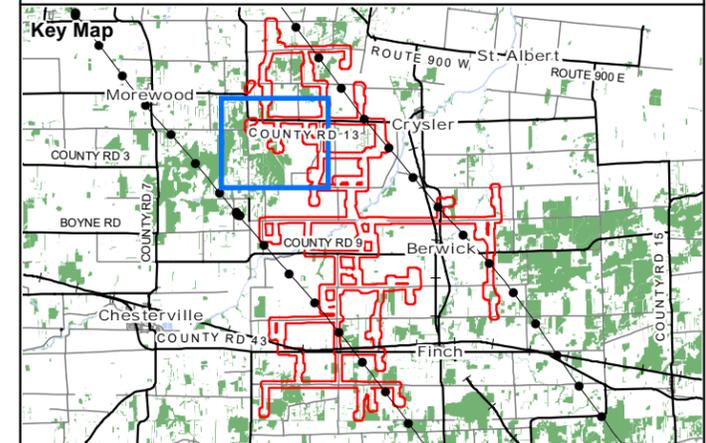


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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
▲ N	

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

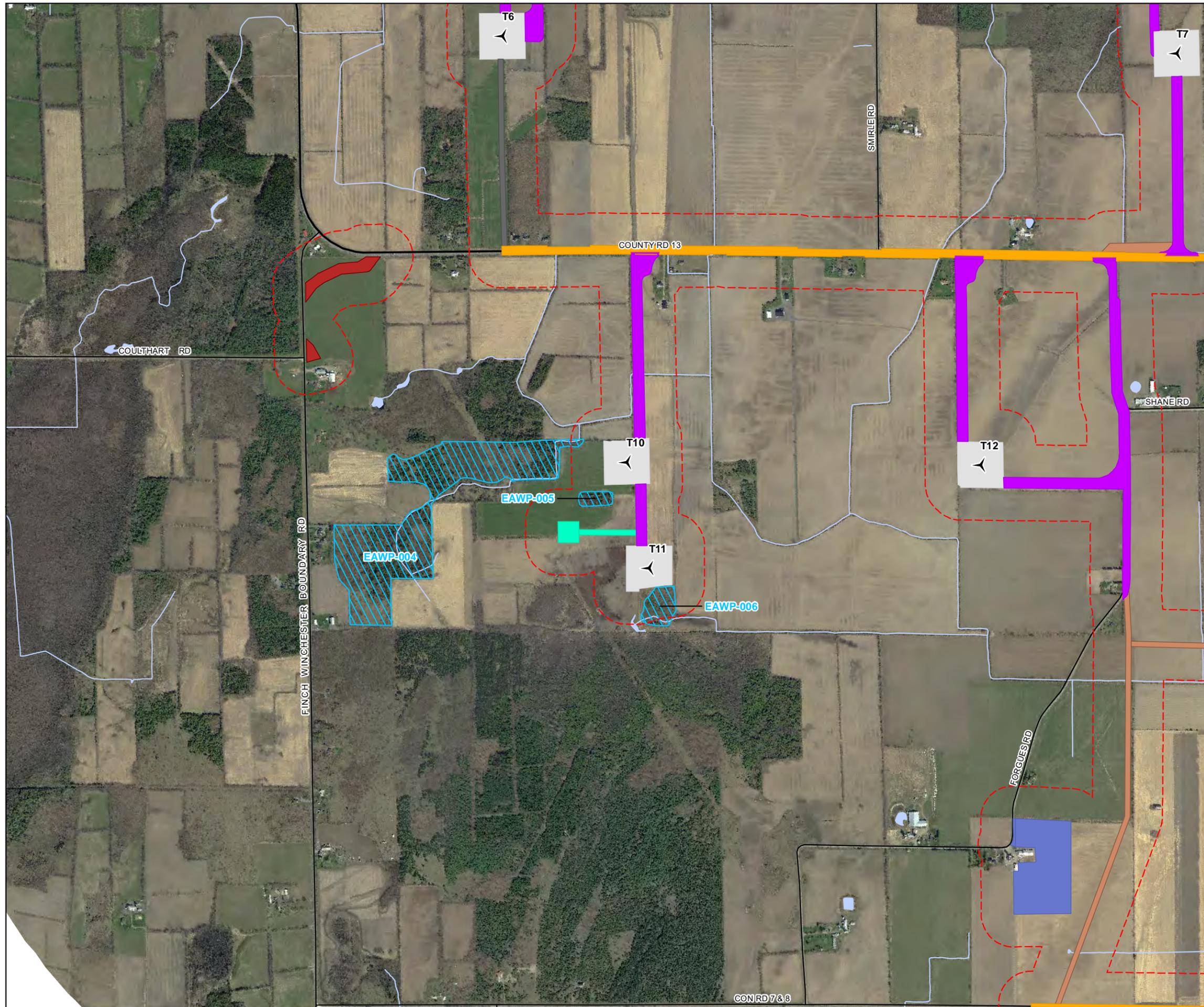
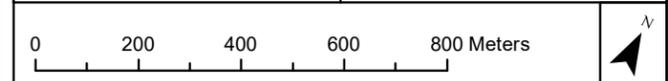
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (LIO)
- Project Components**
- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown
- Proposed Temporary Turning Radius
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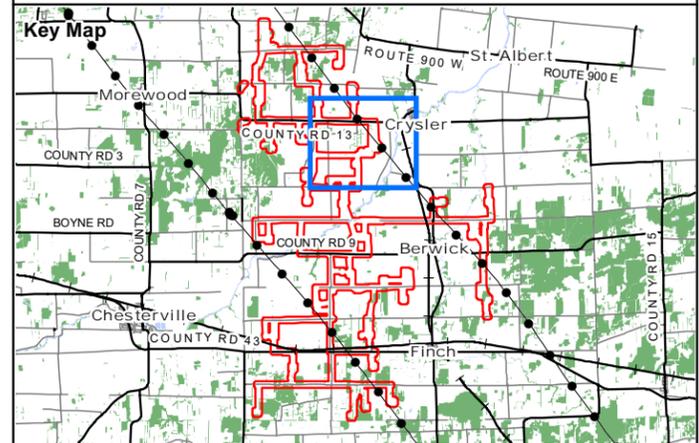
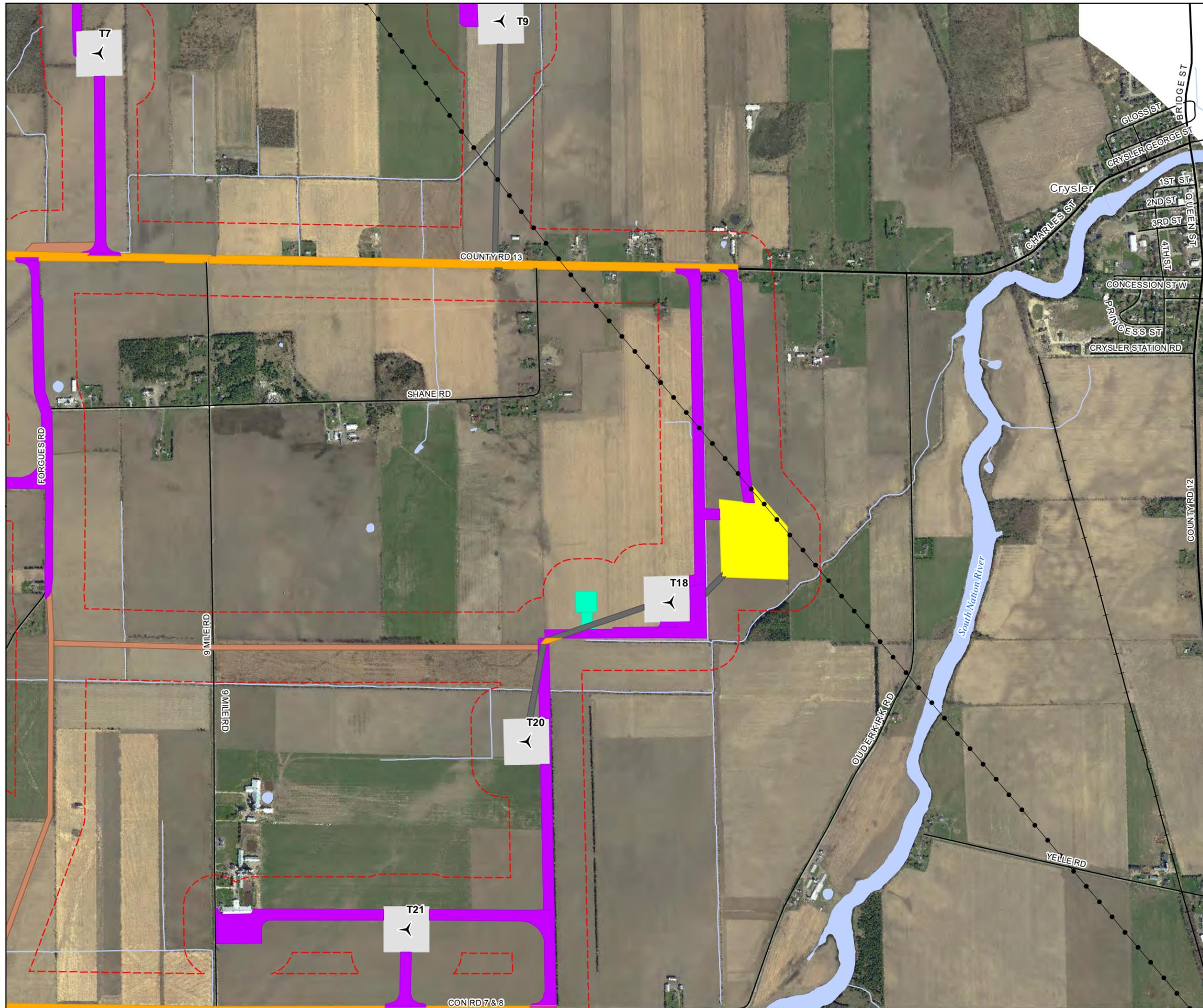
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Project: 1756
Date: May 17, 2017
NAD83 - UTM Zone 18
Size: 11x17"
1:14,000



Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)
- Project Components**
- ▭ Project Area
- ▲ Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
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- Proposed Crane Path
- Proposed Meteorological Tower Footprint and Access Road
- Proposed Substation

**Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*

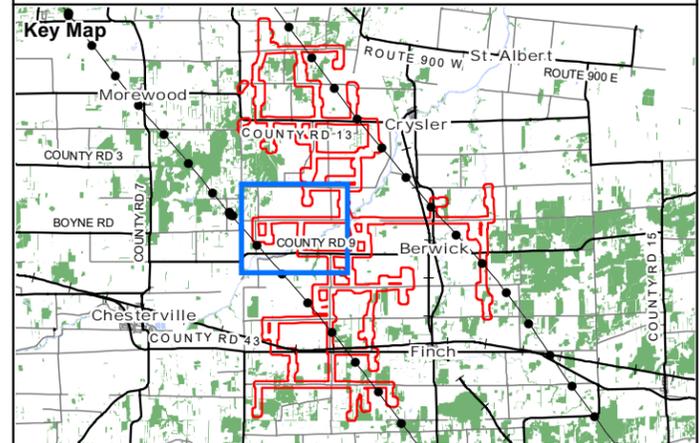
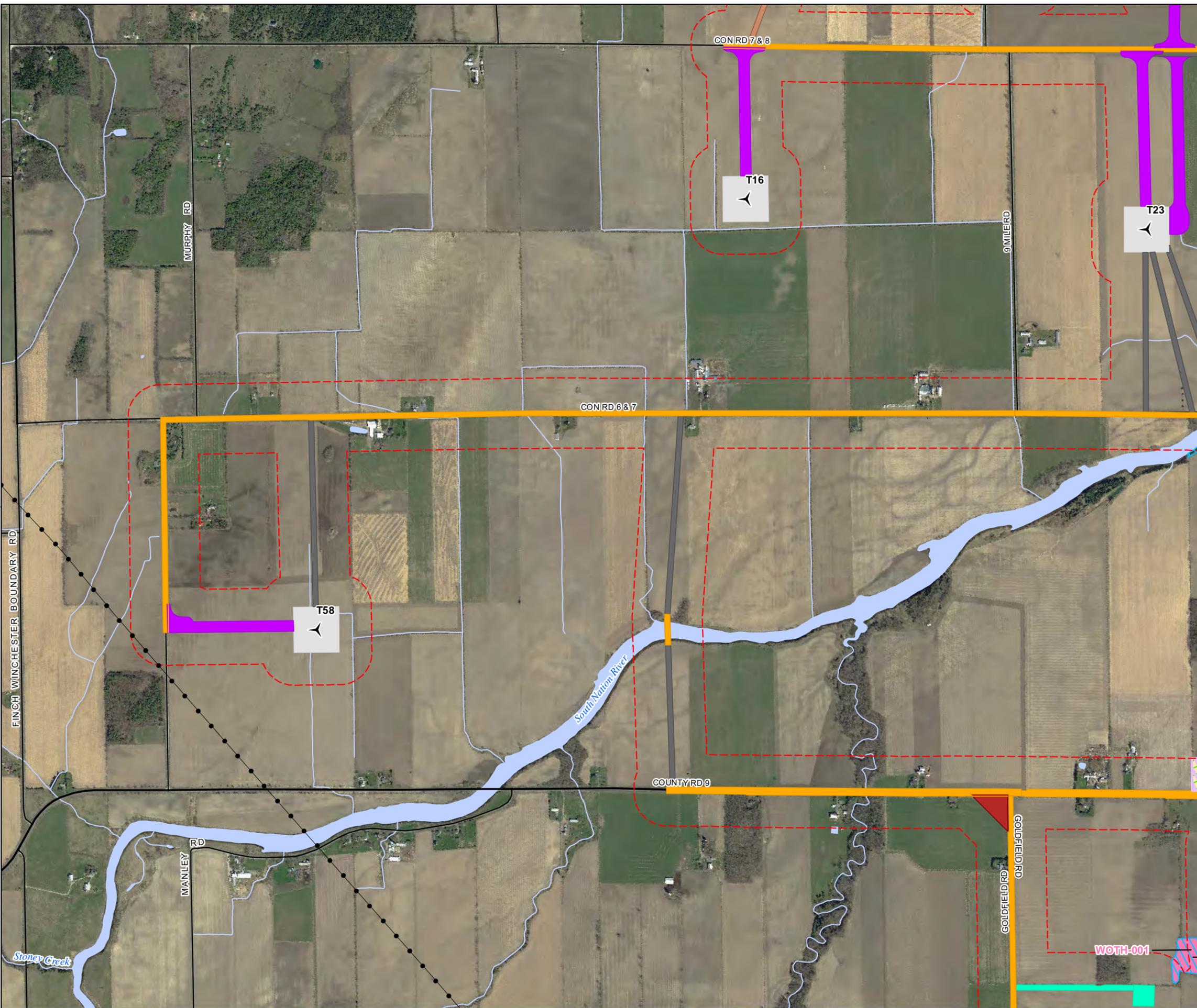


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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

- Utility Line
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (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

Treated As Significant Habitats for Species of Conservation Concern*

- Eastern Wood-Pewee (EAWP)
- Common Nighthawk (CONI)
- Wood Thrush (WOTH)
- Mühlenberg's Weissia (MUWE)
- Monarch (MONA)

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

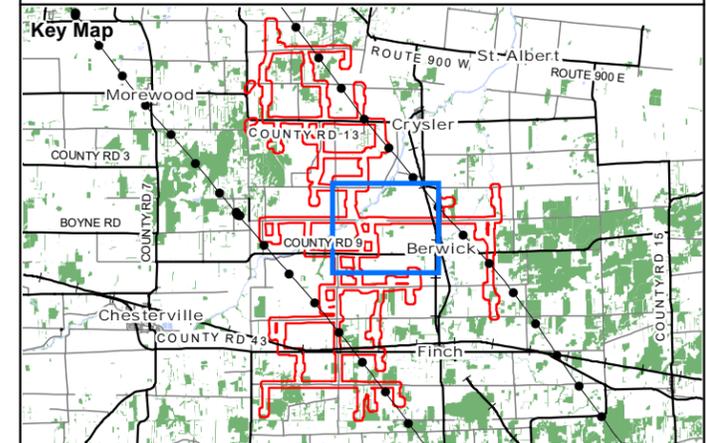
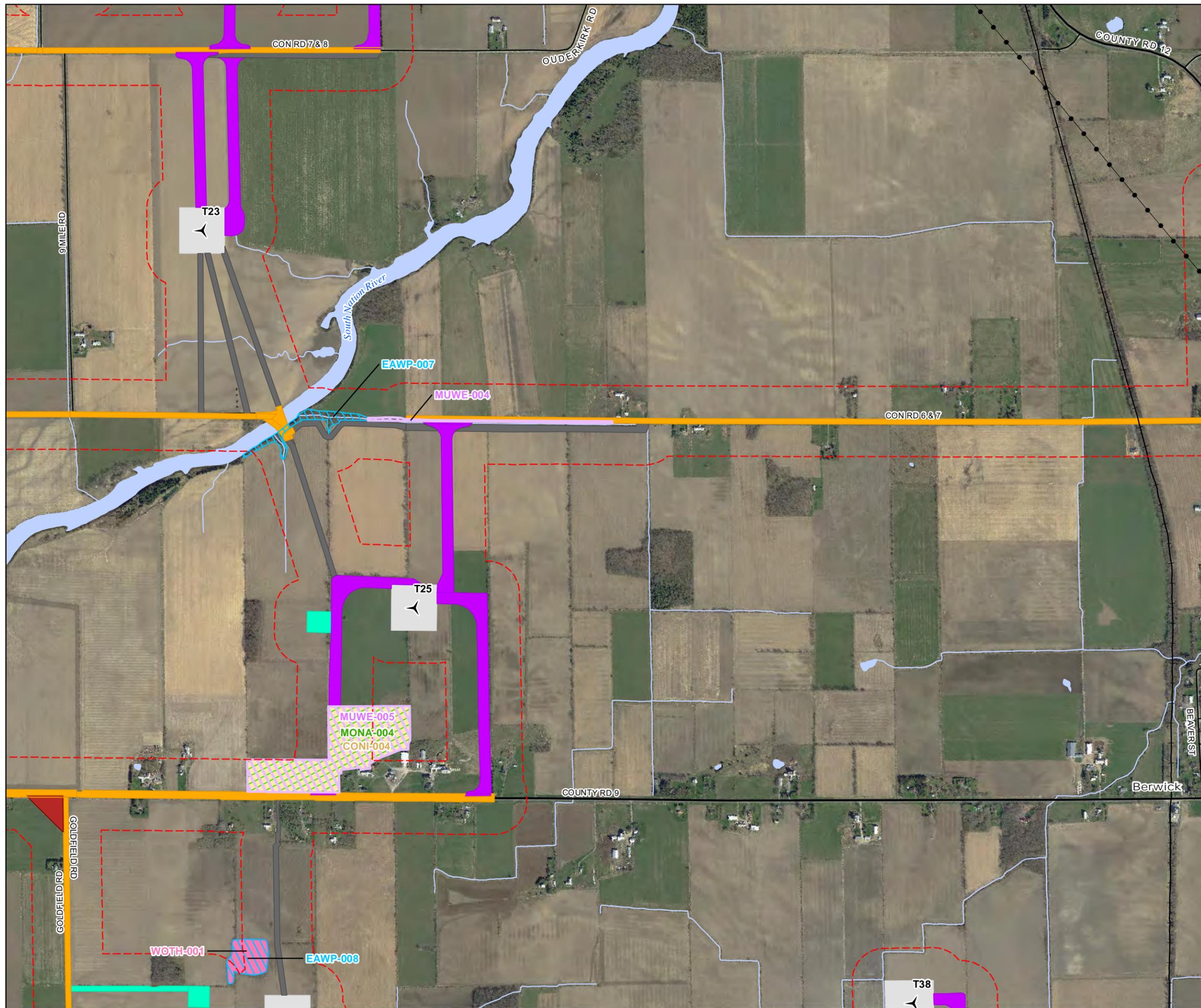
NATURAL RESOURCE SOLUTIONS INC.
 Aquatic, Terrestrial and Wetland Biologists

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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - Permanent Watercourse (LIO)
 - Open Water (LIO)
 - 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
- Treated As Significant Habitats for Species of Conservation Concern***
- Eastern Wood-Pewee (EAWP)
 - Common Nighthawk (CONI)
 - Wood Thrush (WOTH)
 - Mühlenberg's Weissia (MUWE)
 - Monarch (MONA)

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

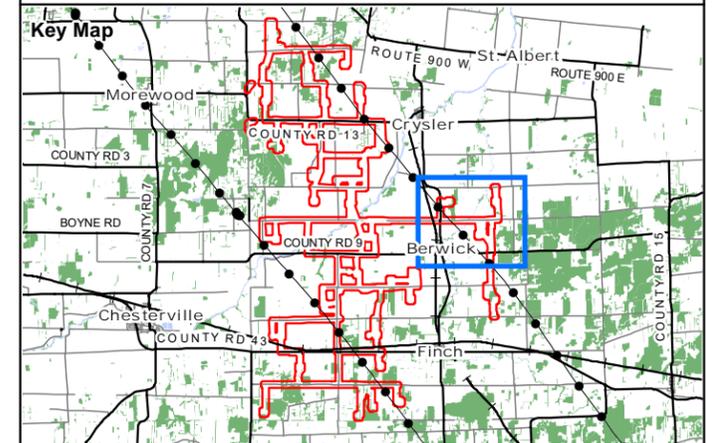


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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- Permanent Watercourse (LIO)
- Open Water (LIO)

Treated As Significant Habitats for Species of Conservation Concern*

- Eastern Wood-Pewee (EAWP)
- Common Nighthawk (CONI)
- Wood Thrush (WOTH)
- Monarch (MONA)

Project Components

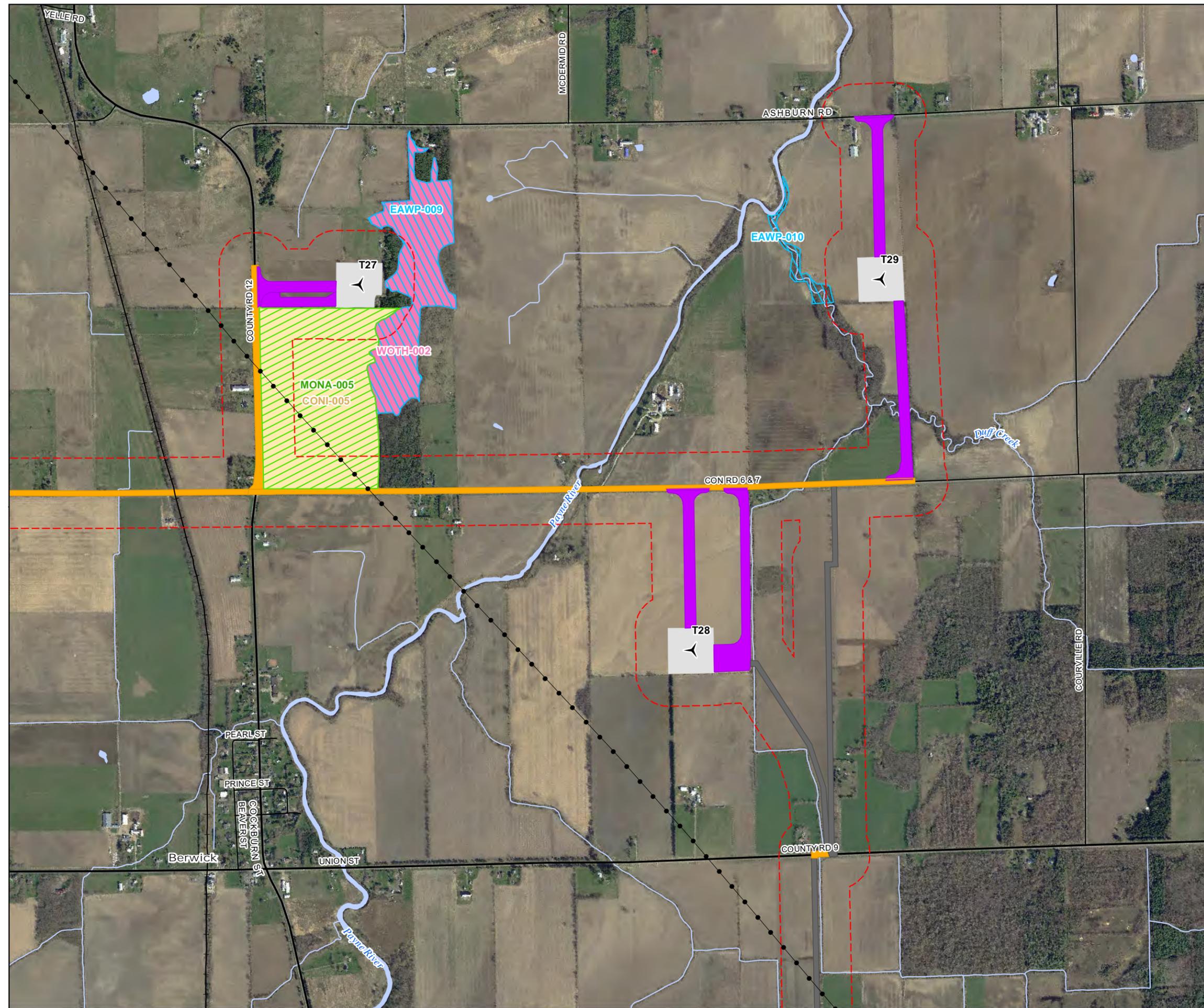
- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



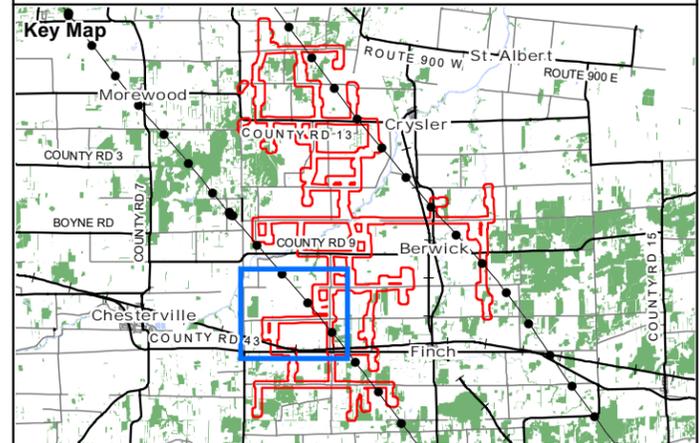
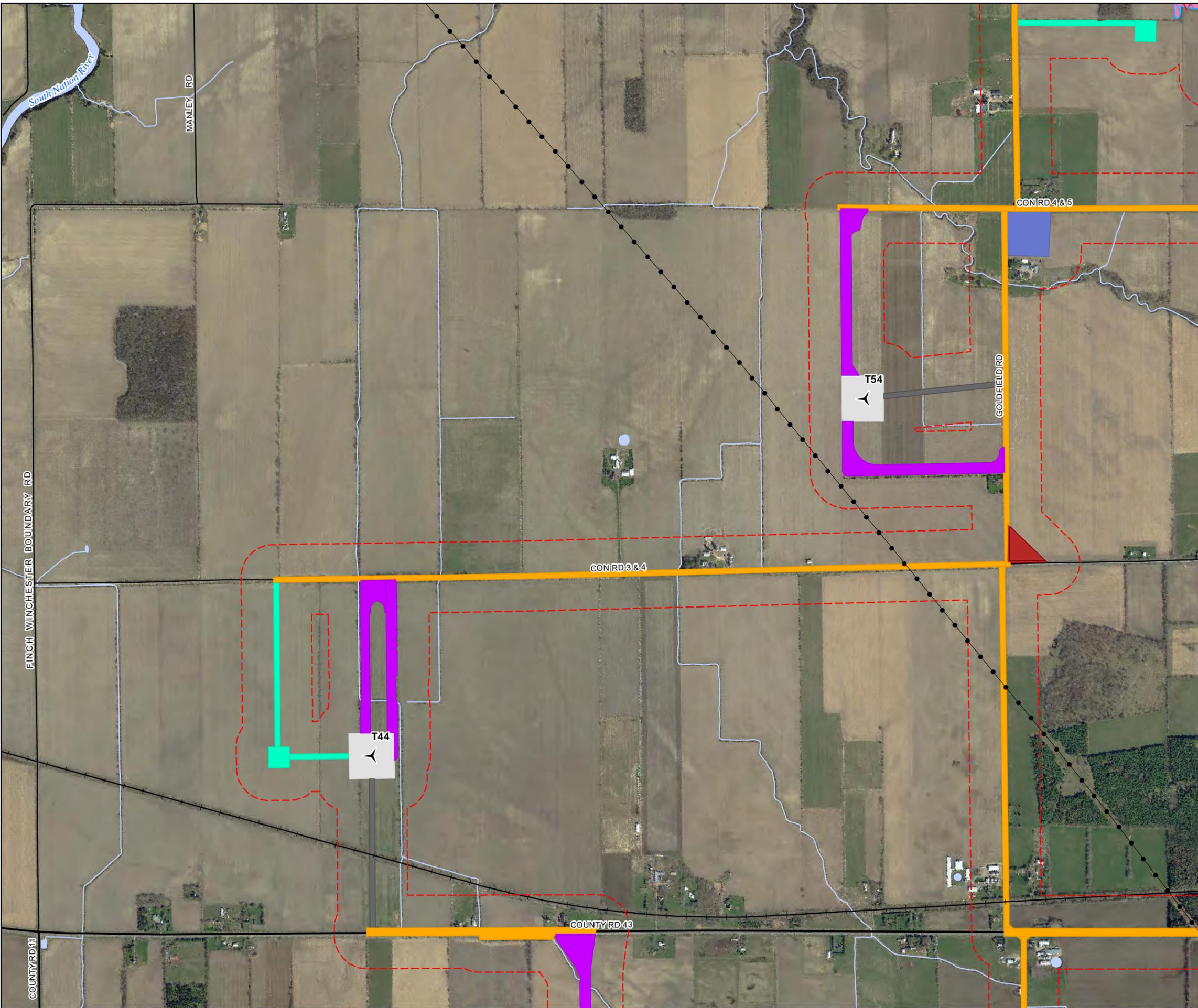
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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (LIO)
- Treated As Significant Habitats for Species of Conservation Concern***
- Eastern Wood-Pewee (EAWP)
 - Wood Thrush (WOTH)
- 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

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

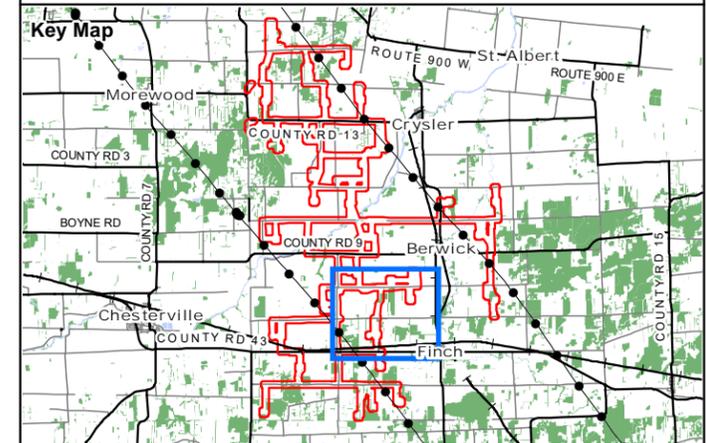


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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

● Utility Line	Treated As Significant Habitats for Species of Conservation Concern*
⊕ Railway	Eastern Wood-Pewee (EAWP)
— Primary Road	Common Nighthawk (CONI)
— Secondary Road	Wood Thrush (WOTH)
Permanent Watercourse (LIO)	Monarch (MONA)
Open Water (LIO)	

Project Components

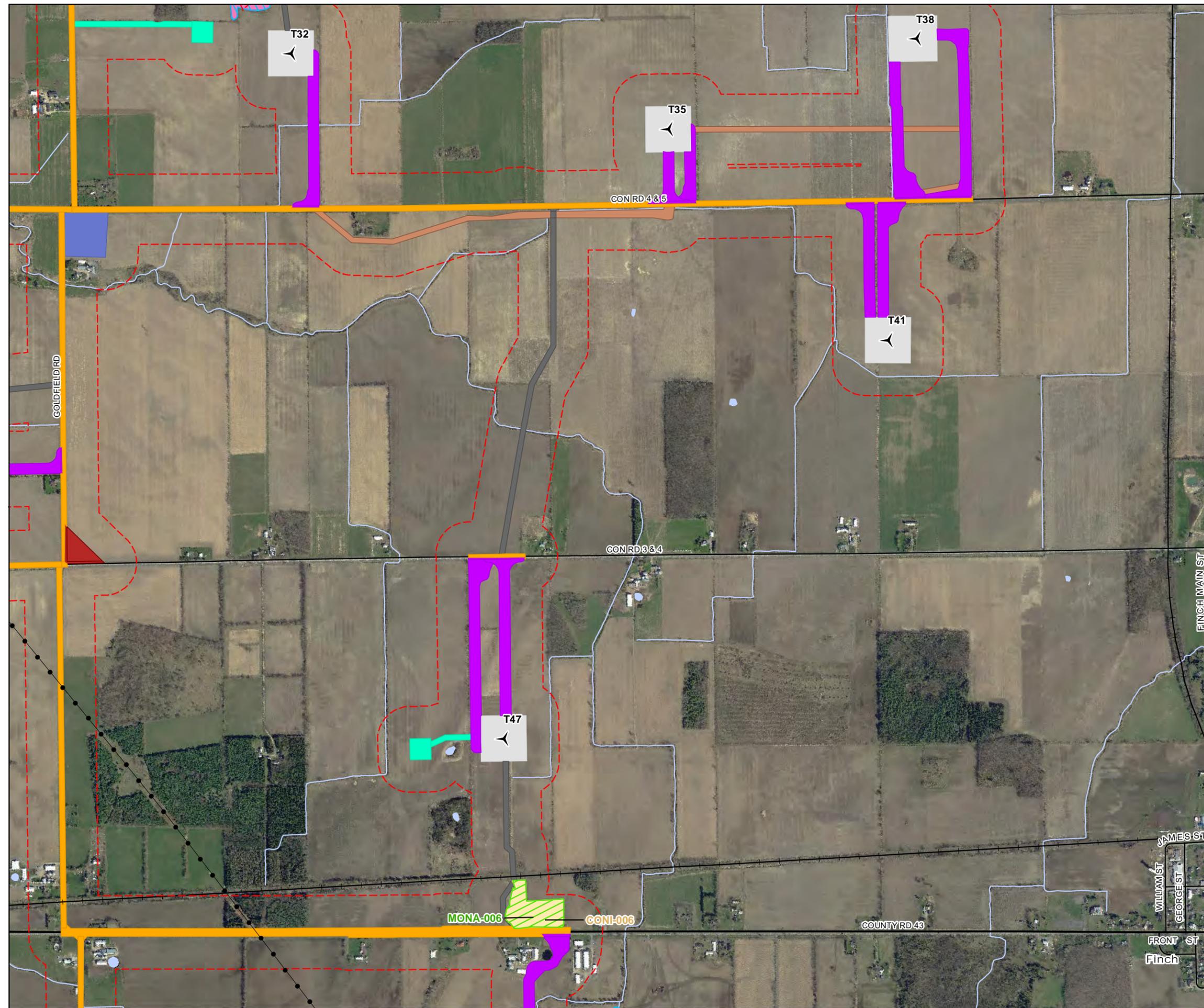
- Project Area
- Proposed Turbine
- Proposed Access Road and Collection System
- Proposed Above/Underground Collection System
- Proposed Underground Collection System
- Proposed Turbine Laydown, Access Road, Collection Line
- Proposed Laydown
- Proposed Temporary Turning Radius
- Proposed Crane Path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

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.



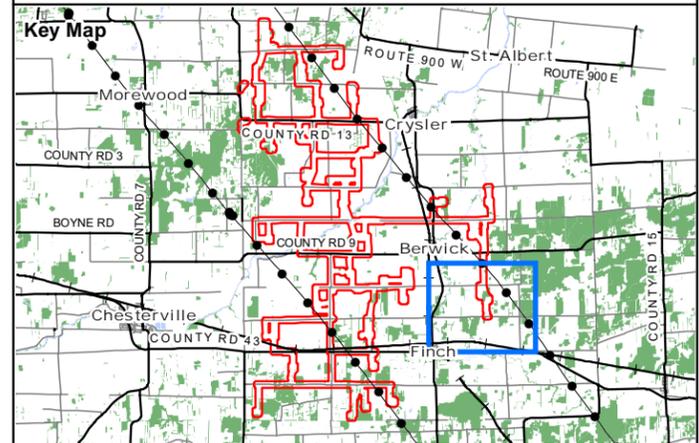
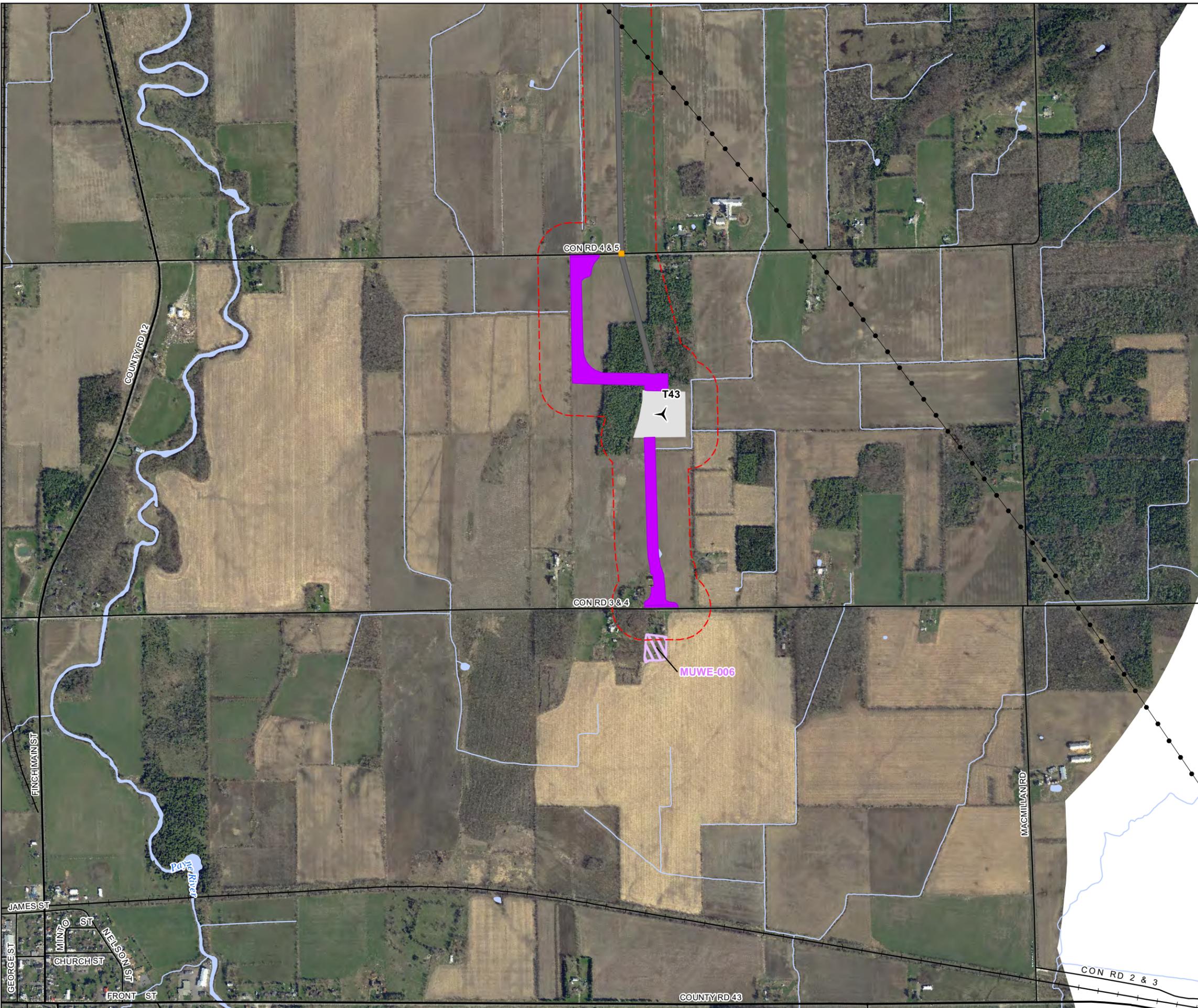
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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000



Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (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
- Treated As Significant Habitats for Species of Conservation Concern***
- ▨ Mühlenberg's Weissia (MUWE)

*Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.

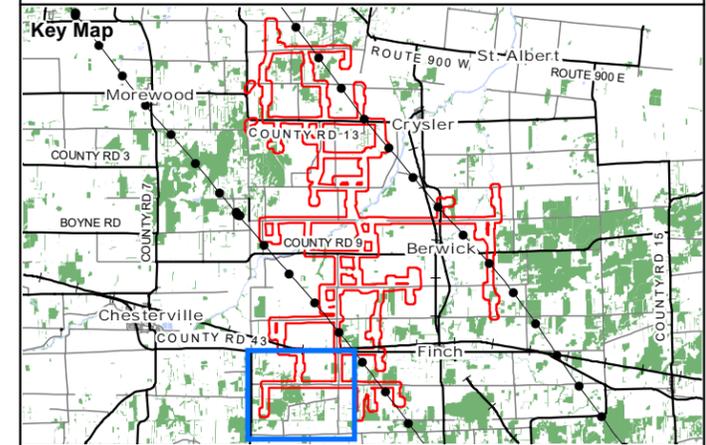


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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



Legend

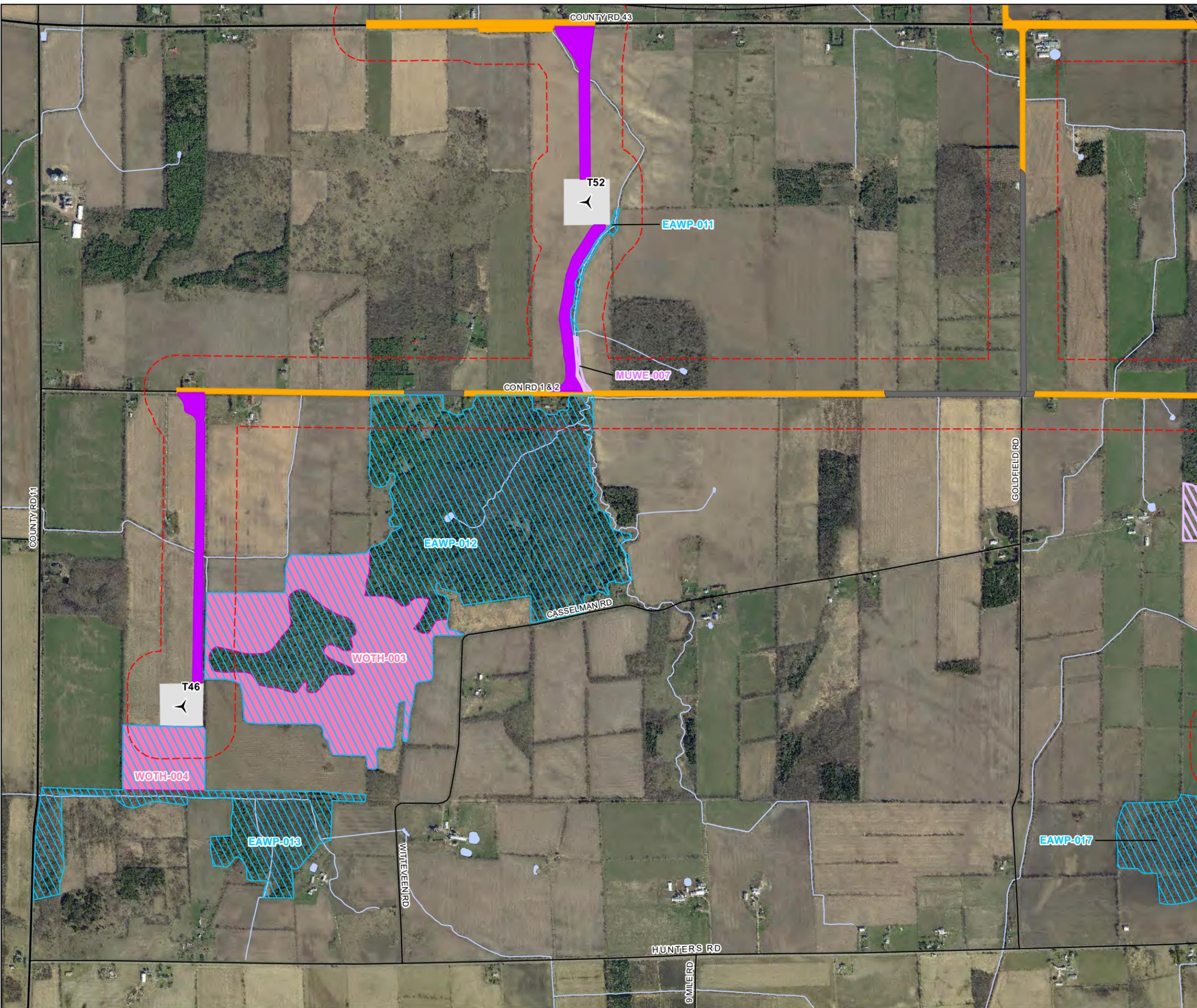
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - Permanent Watercourse (LIO)
 - Open Water (LIO)
 - Project Area
 - Proposed Turbine
 - Proposed Access Road and Collection System
 - Proposed Above/Underground Collection System
 - Proposed Underground Collection System
 - Proposed Turbine Laydown, Access Road, Collection Line
- Treated As Significant Habitats for Species of Conservation Concern***
- Eastern Wood-Pewee (EAWP)
 - Wood Thrush (WOTH)
 - Mühlenberg's Weissia (MUWE)

**Candidate Habitats for Species of Conservation Concern that have been Treated As Significant with a commitment to conduct pre-construction surveys to determine significance, or which access to the habitat to conduct surveys has been denied.*



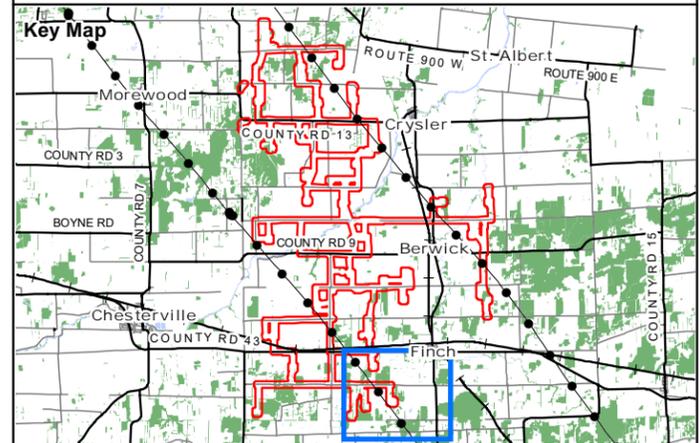
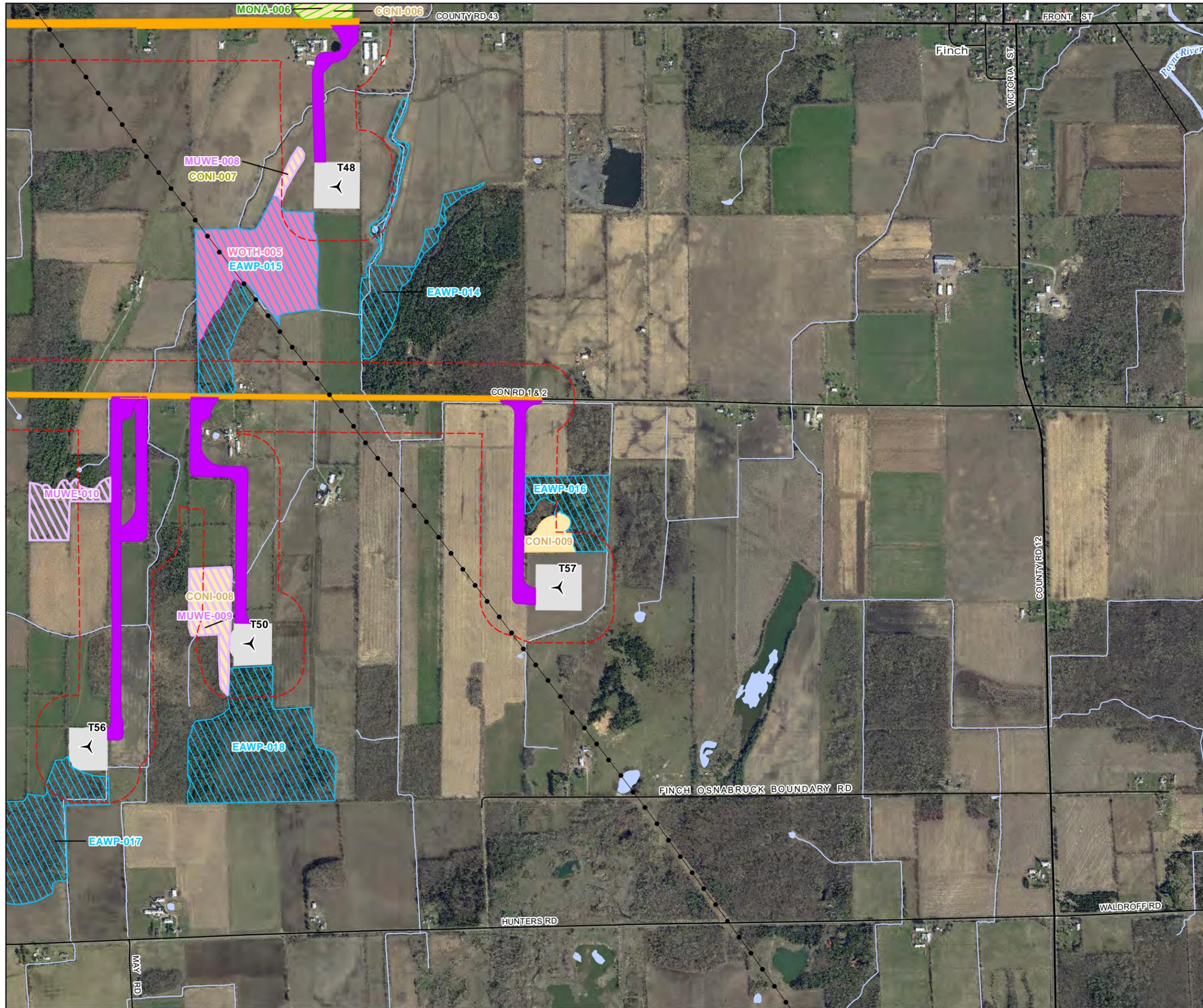
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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	



Nation Rise Wind Farm

Significant Habitats for Species of Conservation Concern



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - Permanent Watercourse (LIO)
 - Open Water (LIO)
 - 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
- Treated As Significant Habitats for Species of Conservation Concern***
- Eastern Wood-Pewee (EAWP)
 - Common Nighthawk (CONI)
 - Wood Thrush (WOTH)
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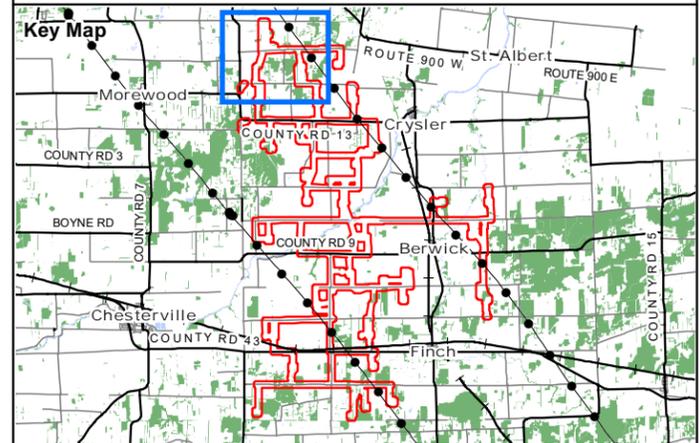
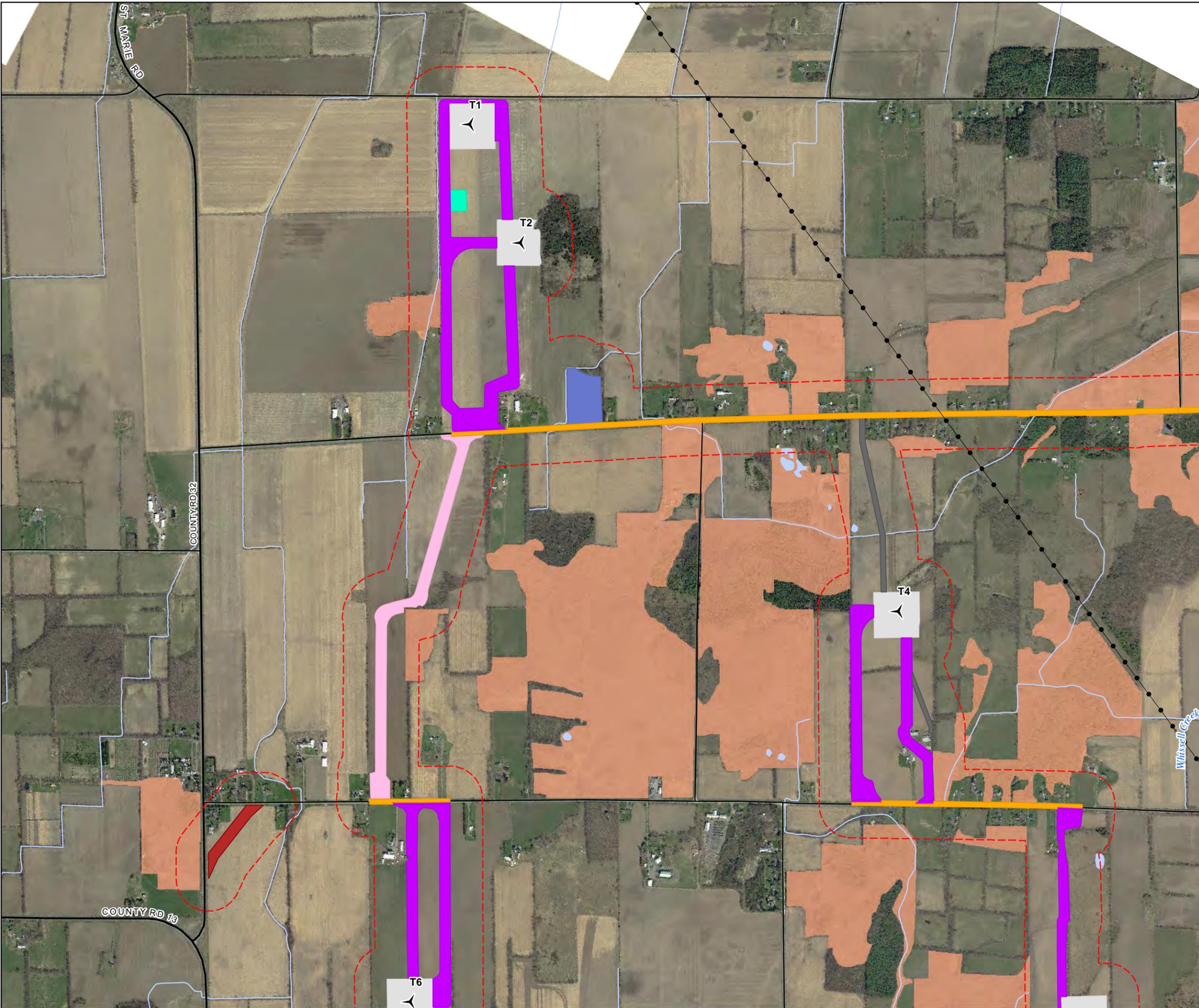
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Project: 1756 Date: May 17, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Maps 6-1 to 6-12
Generalized Significant Wildlife Habitats

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
 - Proposed Temporary Turning Radius
 - Proposed Temporary Access Road for Construction
 - Proposed Meteorological Tower Footprint and Access Road
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

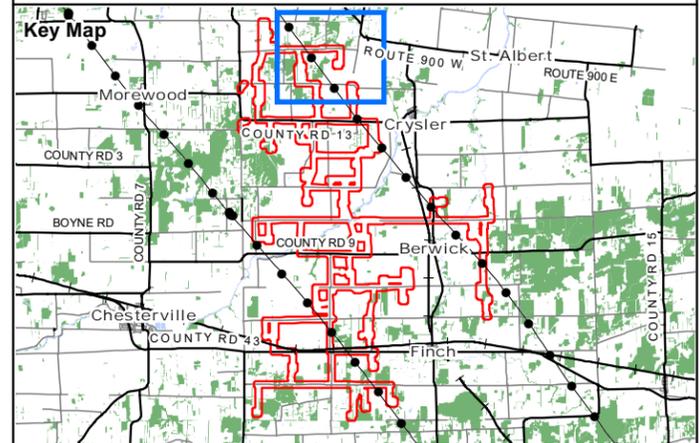
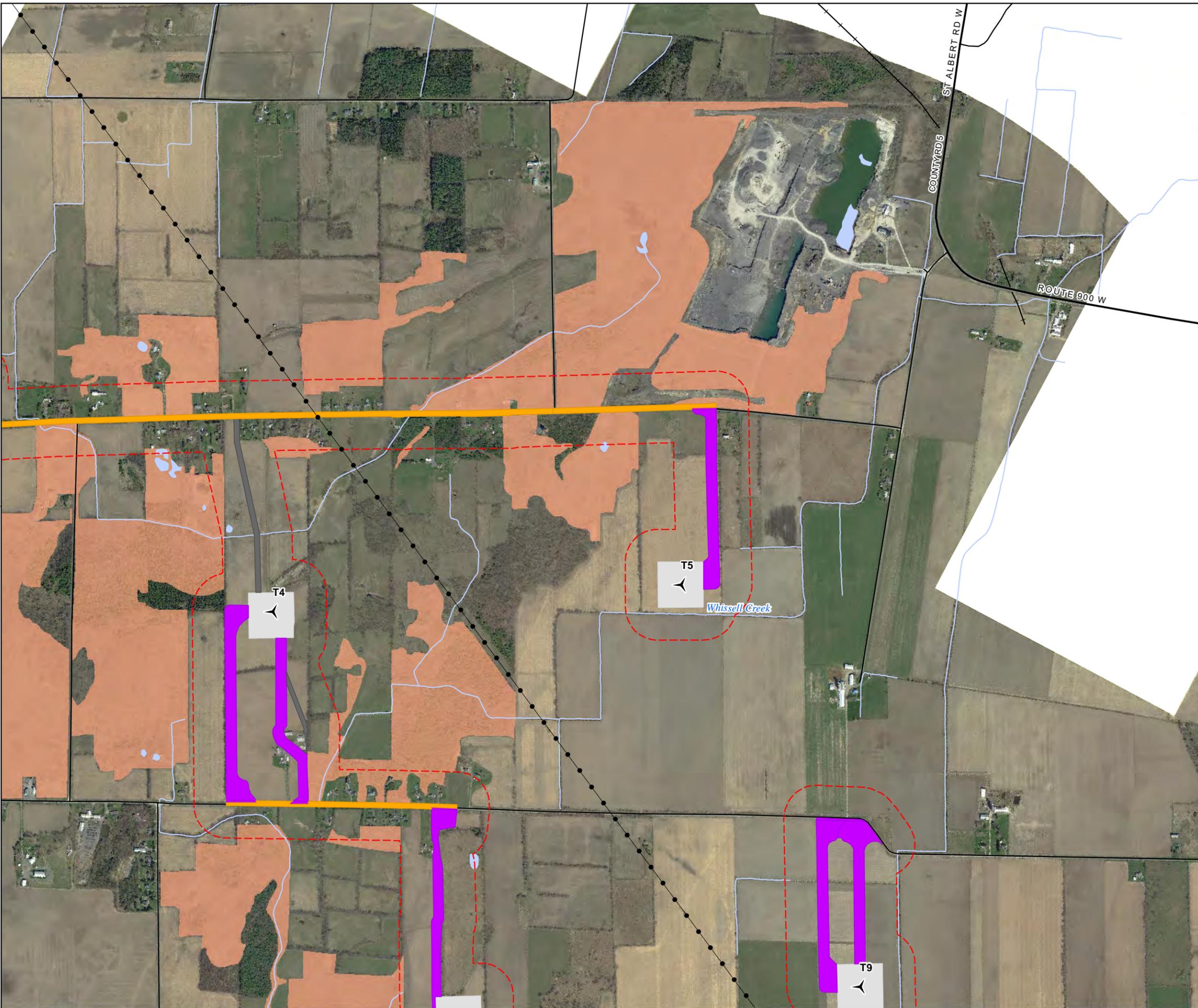


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (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

Treated As Significant Generalized Wildlife Habitats*

- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

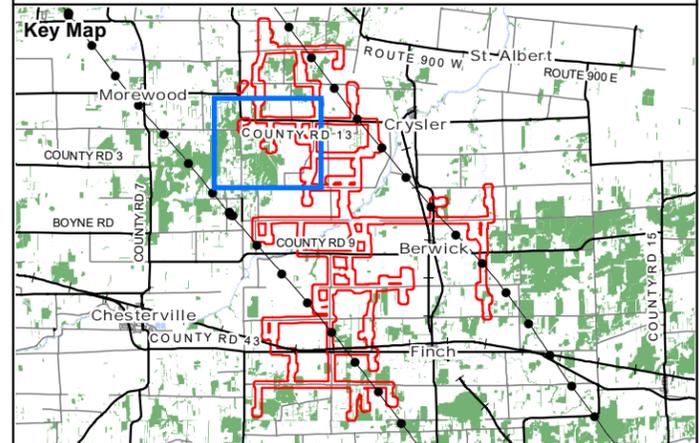
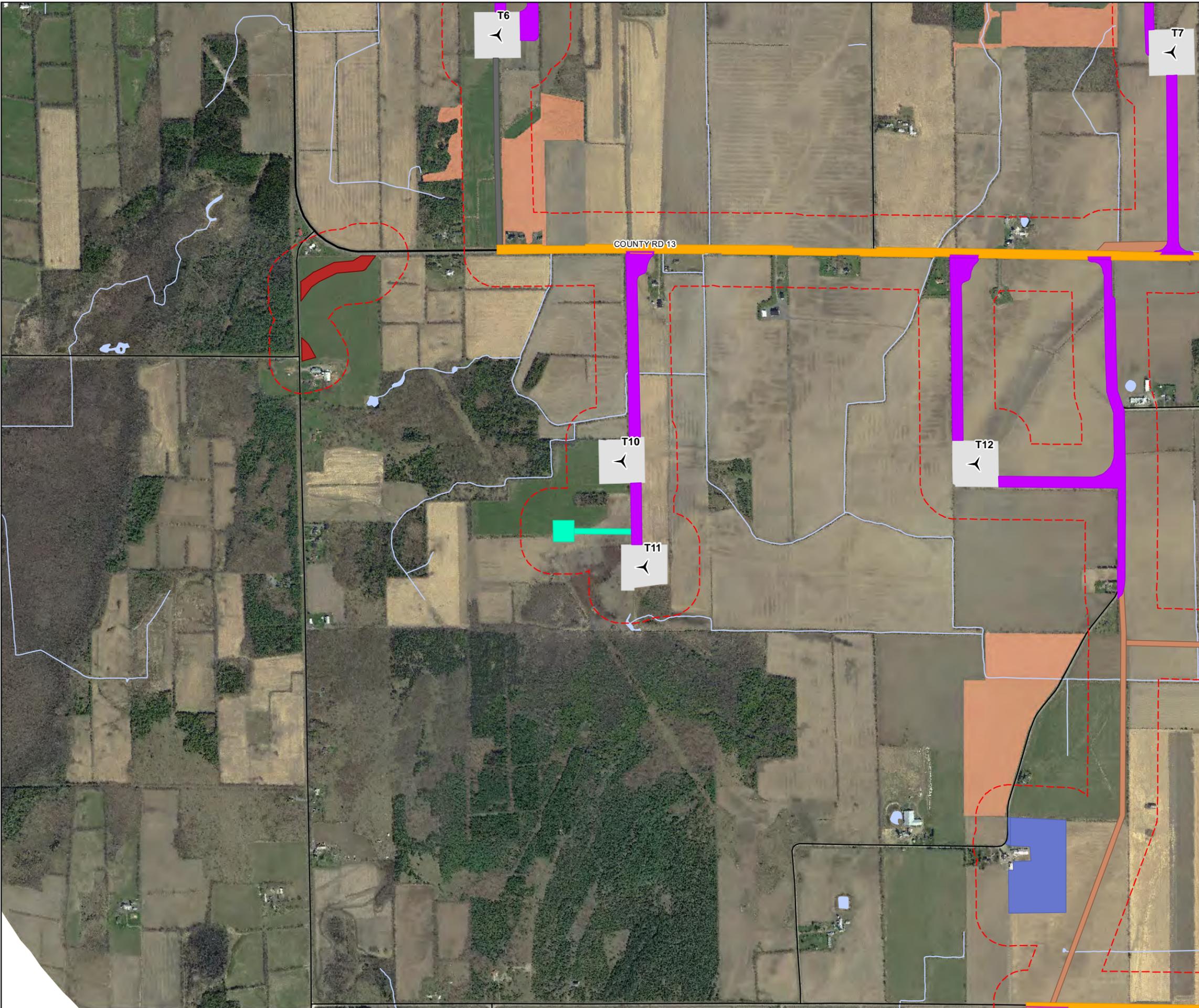


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
 - Proposed Temporary Turning Radius
 - Proposed Crane Path
 - Proposed Meteorological Tower Footprint and Access Road
 - Treated As Significant Generalized Wildlife Habitats***
 - Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

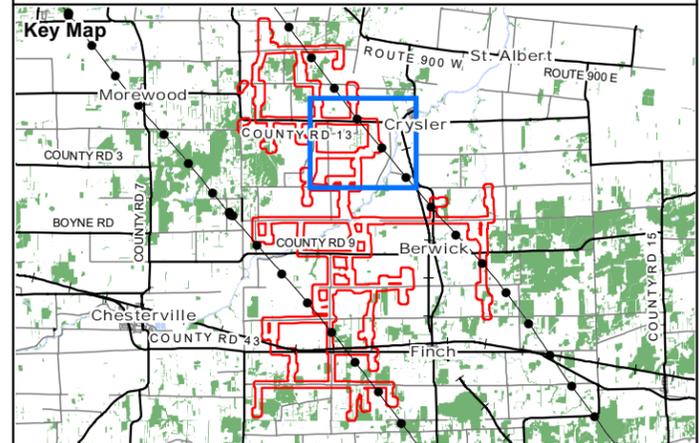
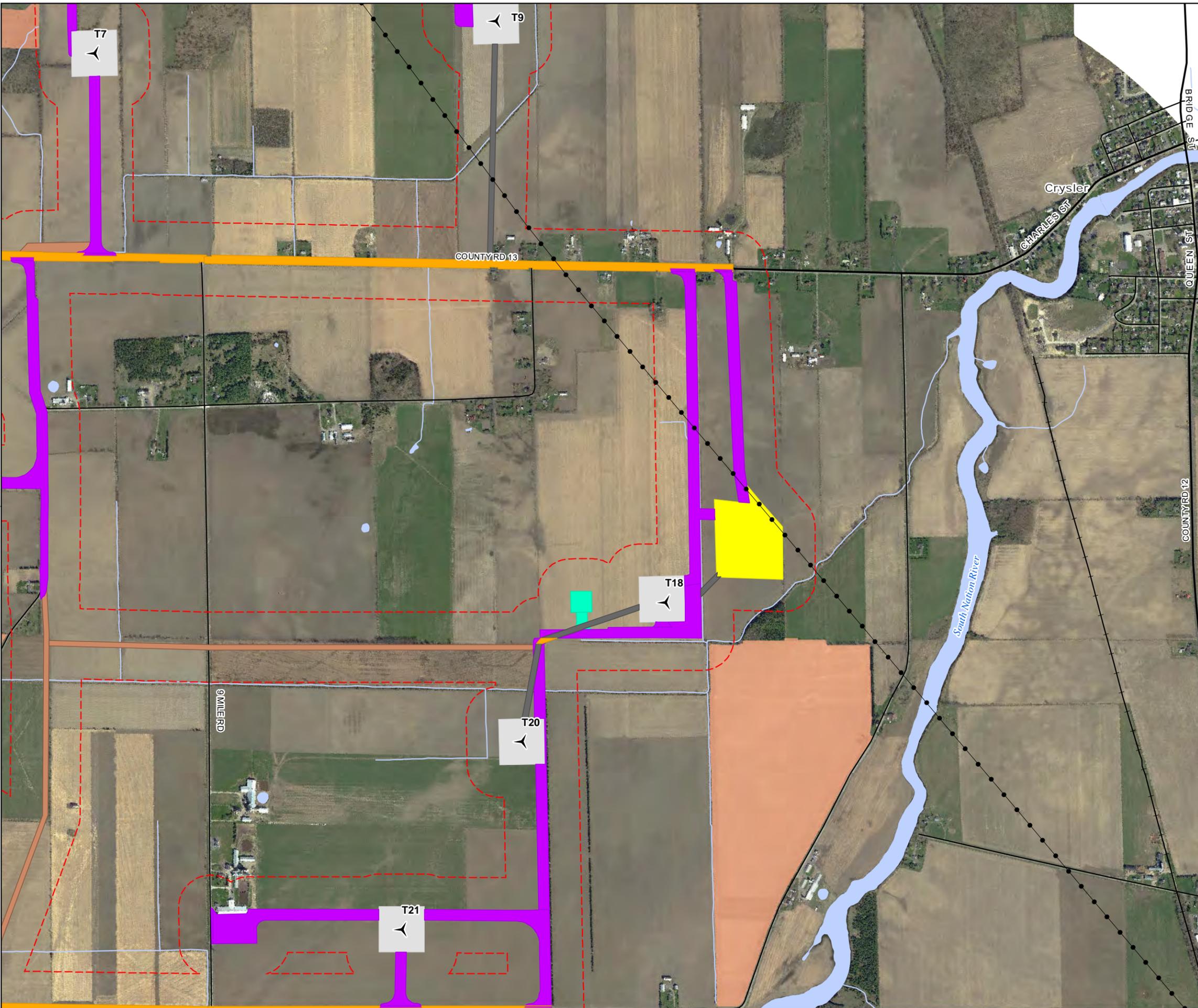


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

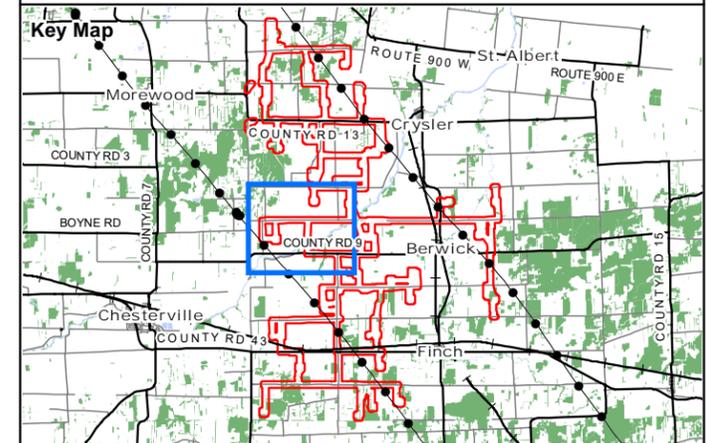


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



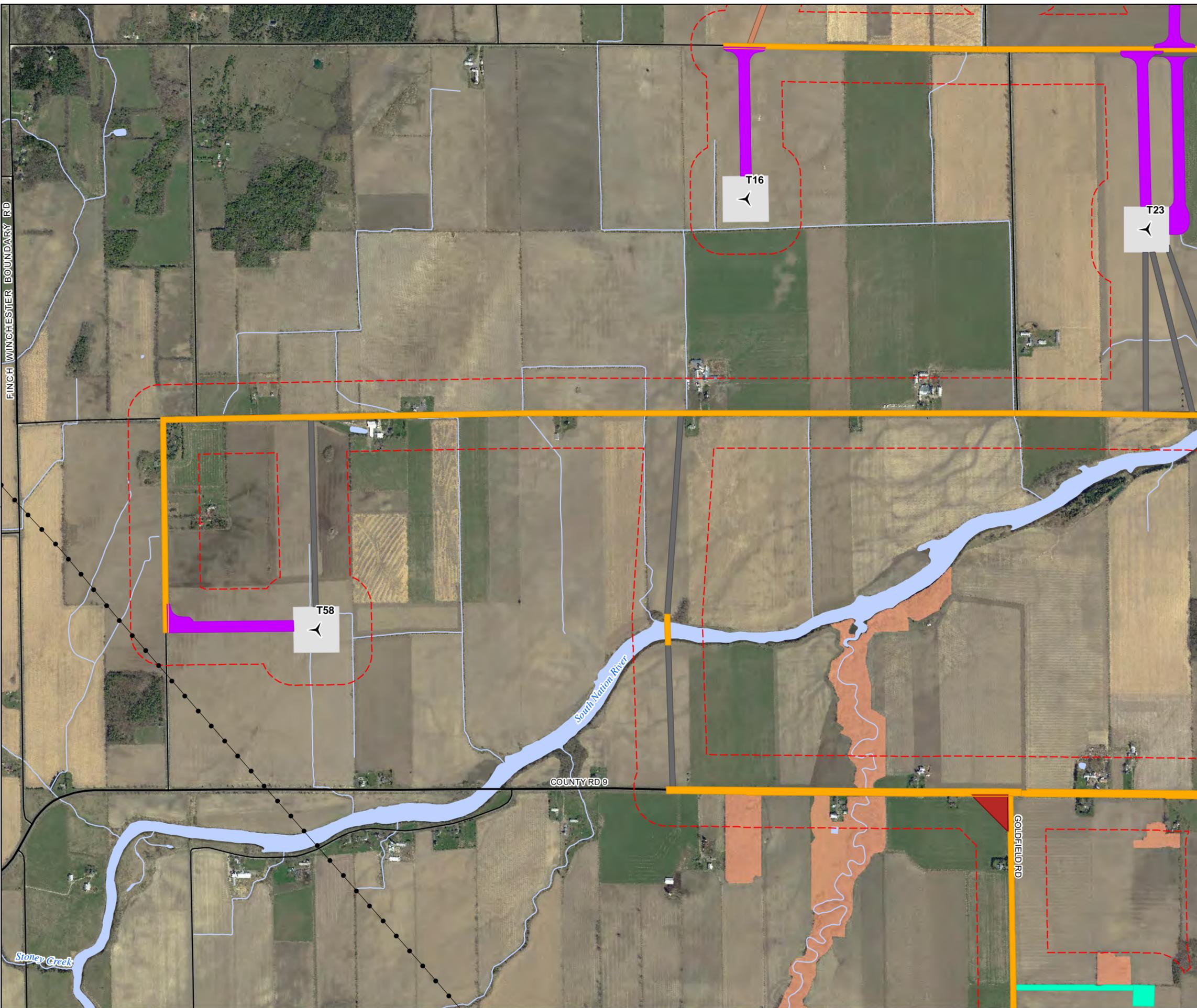
- Legend**
- Utility Line
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (LIO)
- Project Components**
- Project Area
 - ▲ Proposed Turbine
 - Proposed Access Road and Collection System
 - Proposed Above/Underground Collection System
 - Proposed Underground Collection System
 - Proposed Turbine Laydown, Access Road, Collection Line
 - Proposed Temporary Turning Radius
 - Proposed Crane Path
 - Proposed Meteorological Tower Footprint and Access Road
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).



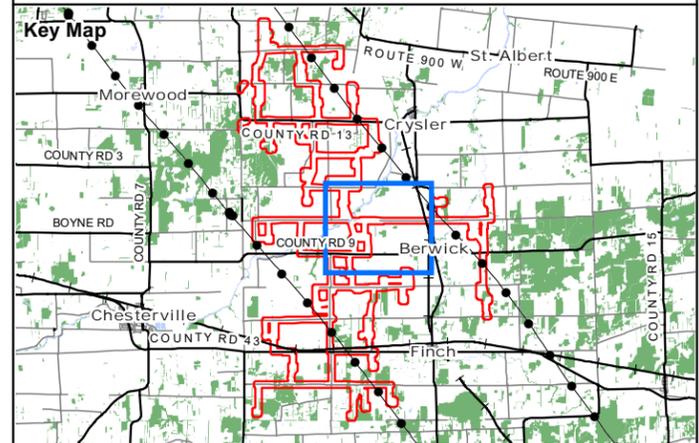
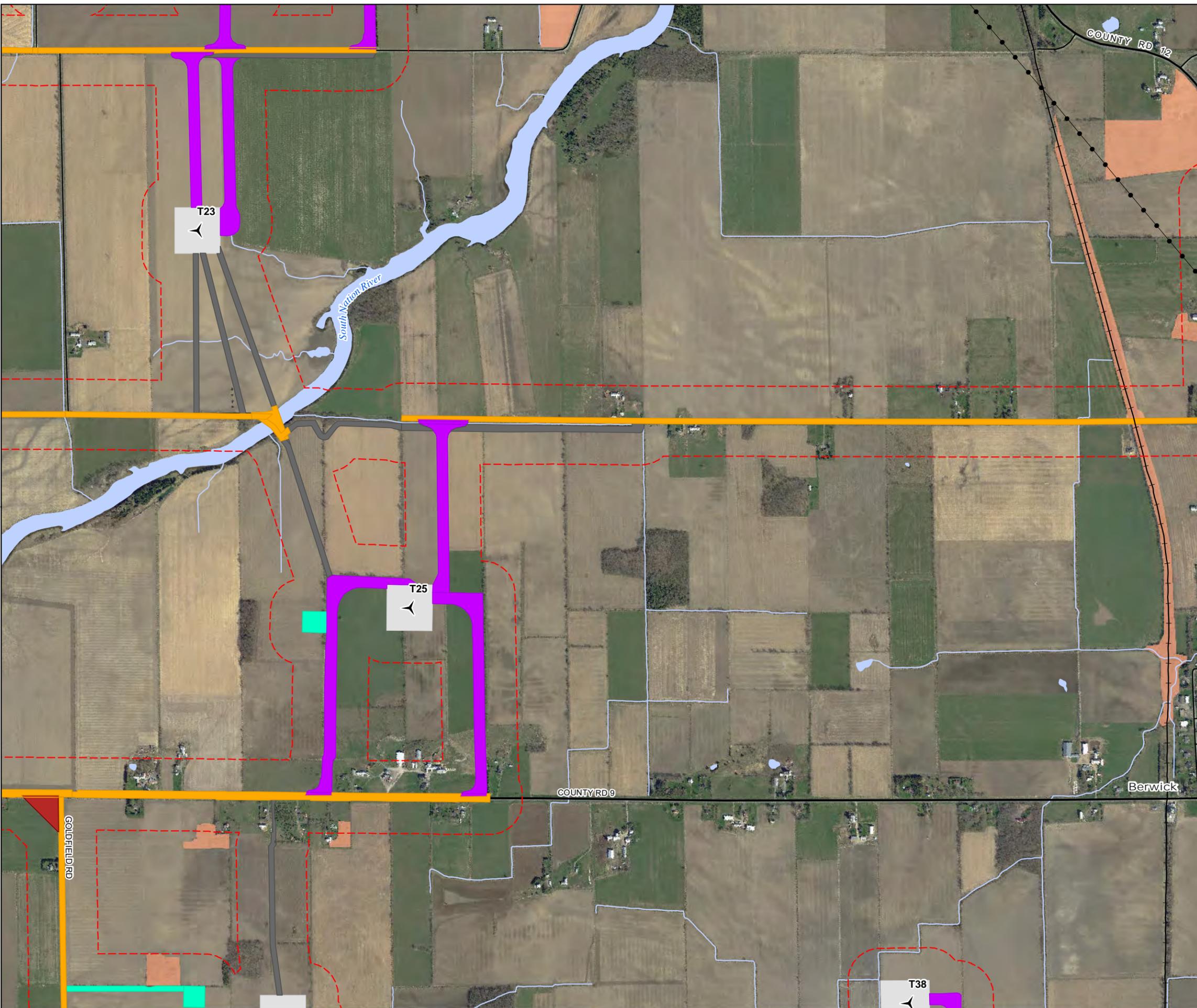
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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	



Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

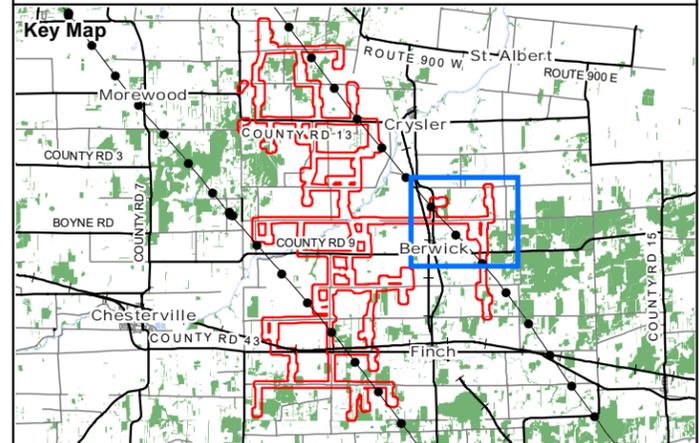
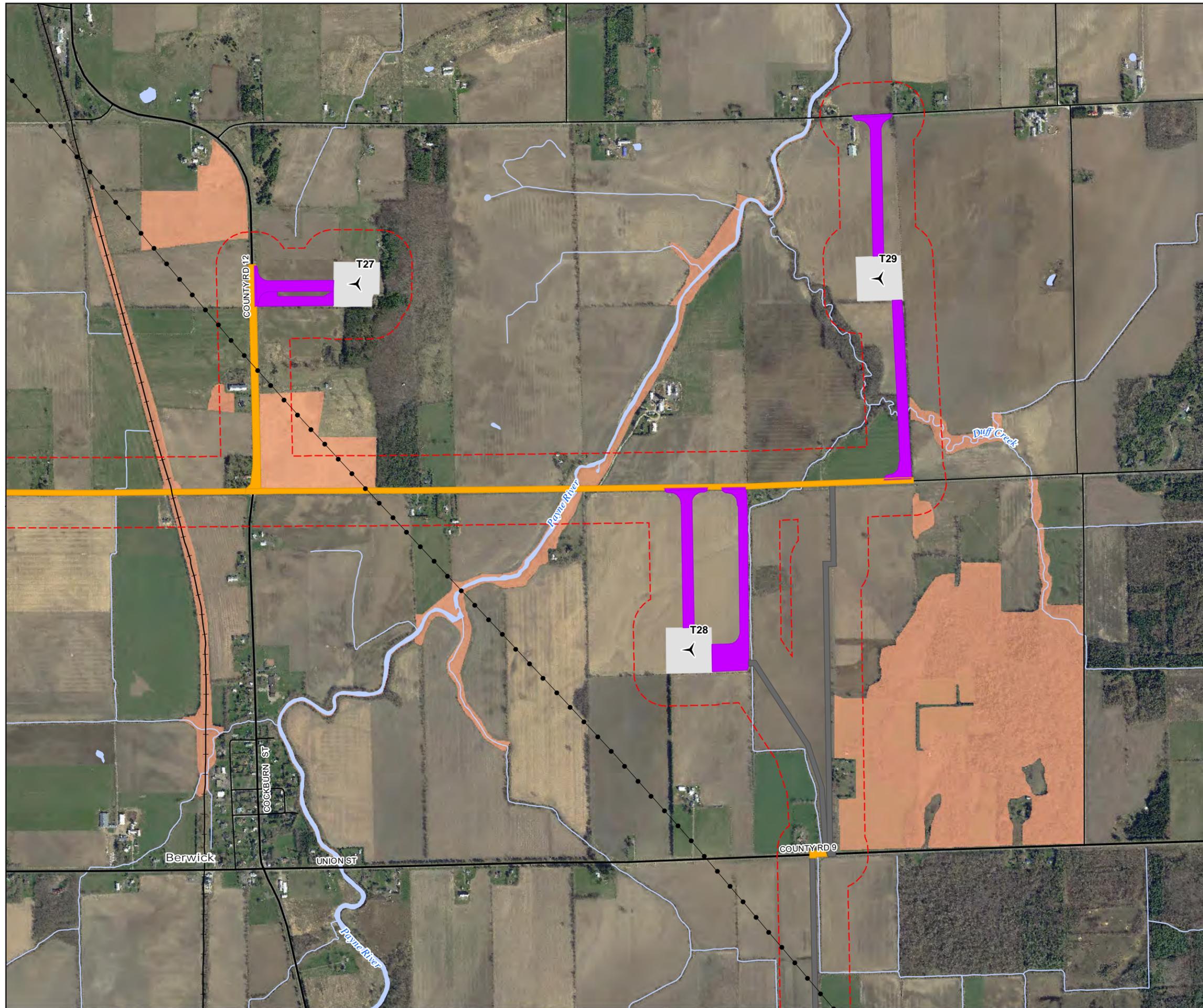


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (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
- Treated As Significant Generalized Wildlife Habitats***
- █ Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

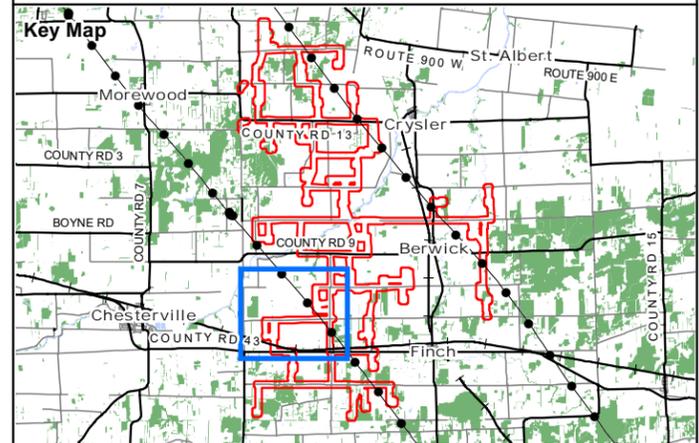
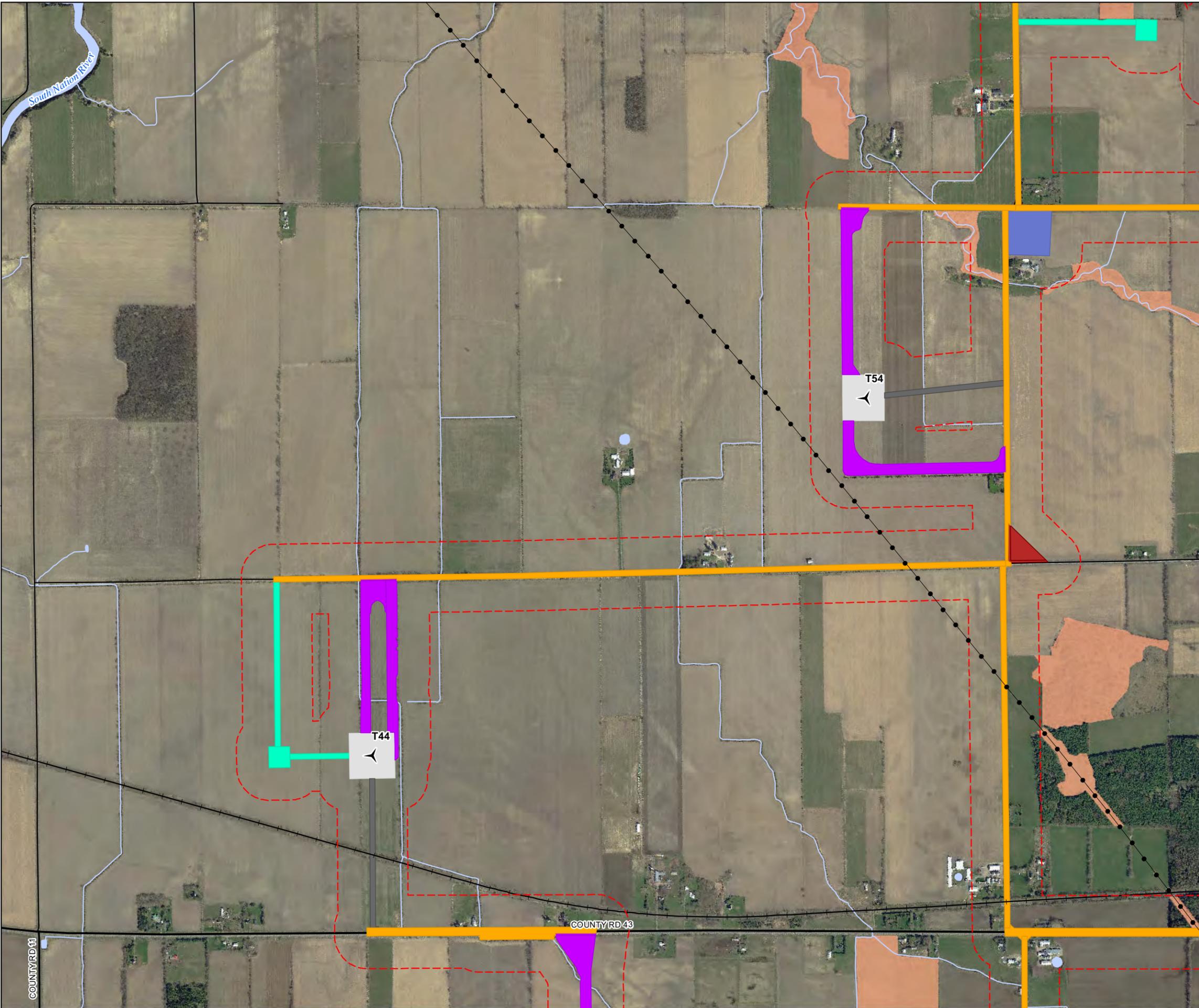


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
 - Proposed Temporary Turning Radius
 - Proposed Meteorological Tower Footprint and Access Road
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

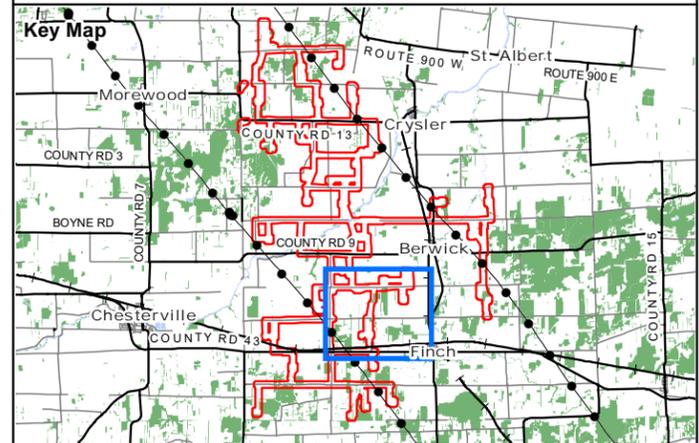
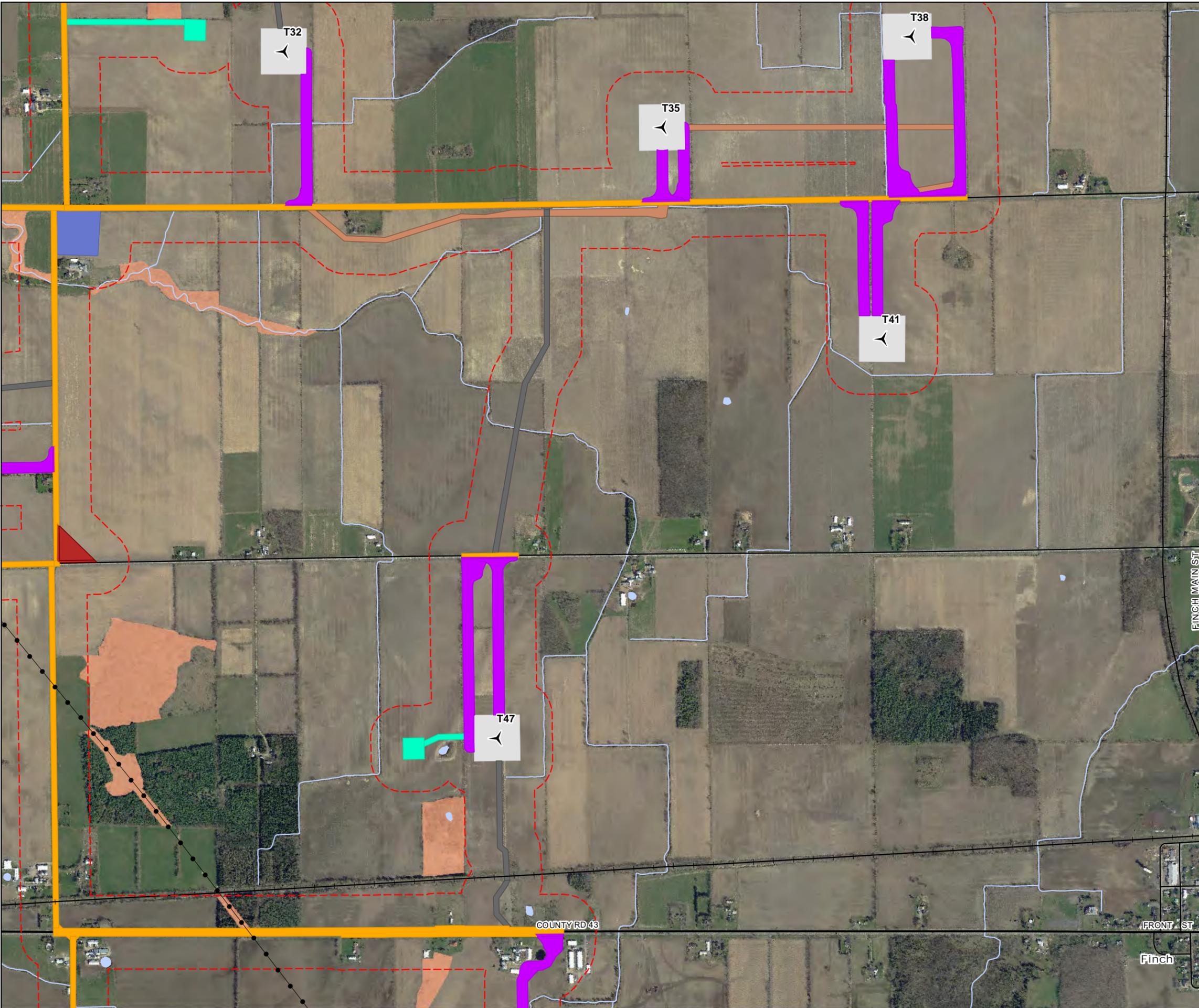


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - ~ Open Water (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
 - Proposed Temporary Turning Radius
 - Proposed Crane Path
 - Proposed Meteorological Tower Footprint and Access Road
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

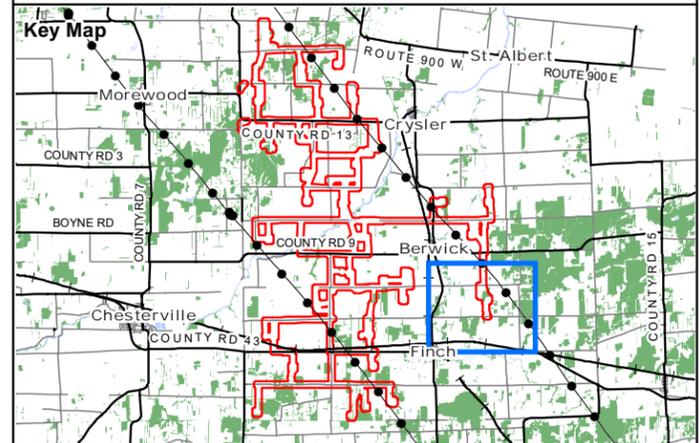
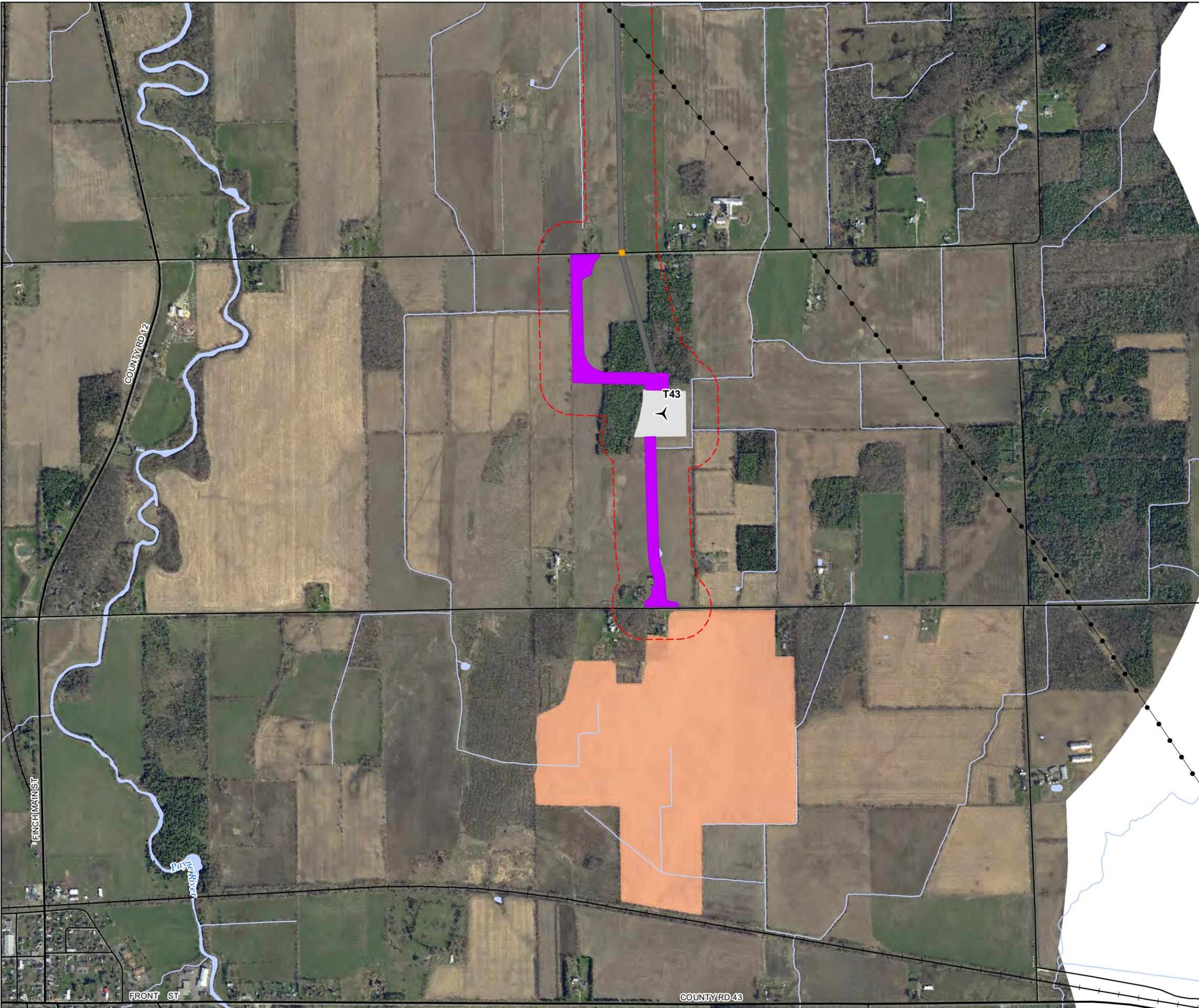


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - +— Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (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
- Treated As Significant Generalized Wildlife Habitats***
- Generalized Wildlife Habitat

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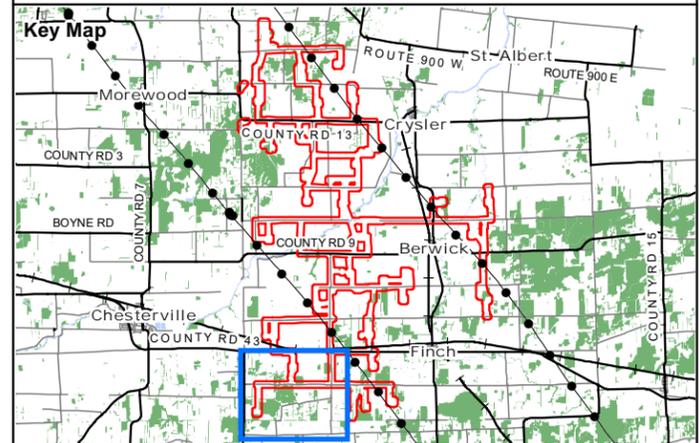
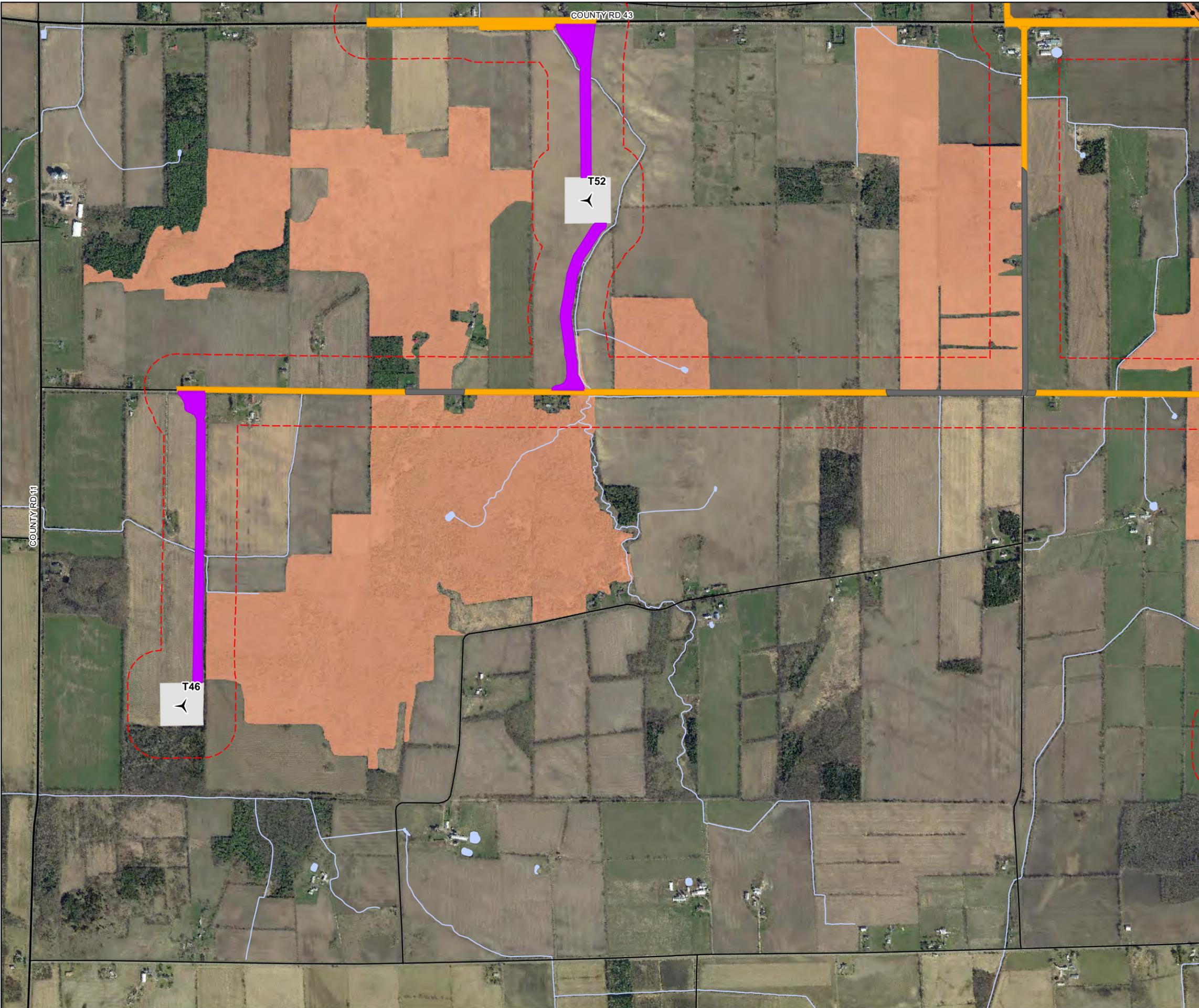


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



Legend

- Utility Line
- Railway
- Primary Road
- Secondary Road
- ~ Permanent Watercourse (LIO)
- Open Water (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

Treated As Significant Generalized Wildlife Habitats*

- Generalized Wildlife Habitat

*Generalized Candidate Significant Wildlife Habitats that have been Treated As Significant following the Natural Heritage Assessment Guide for Renewable Energy Projects (OMNR 2012).

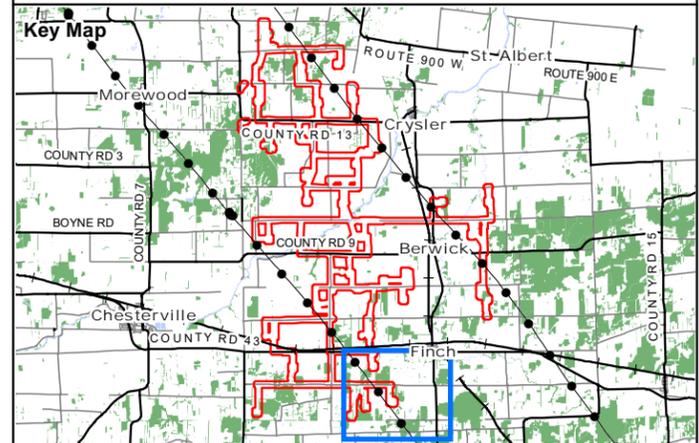
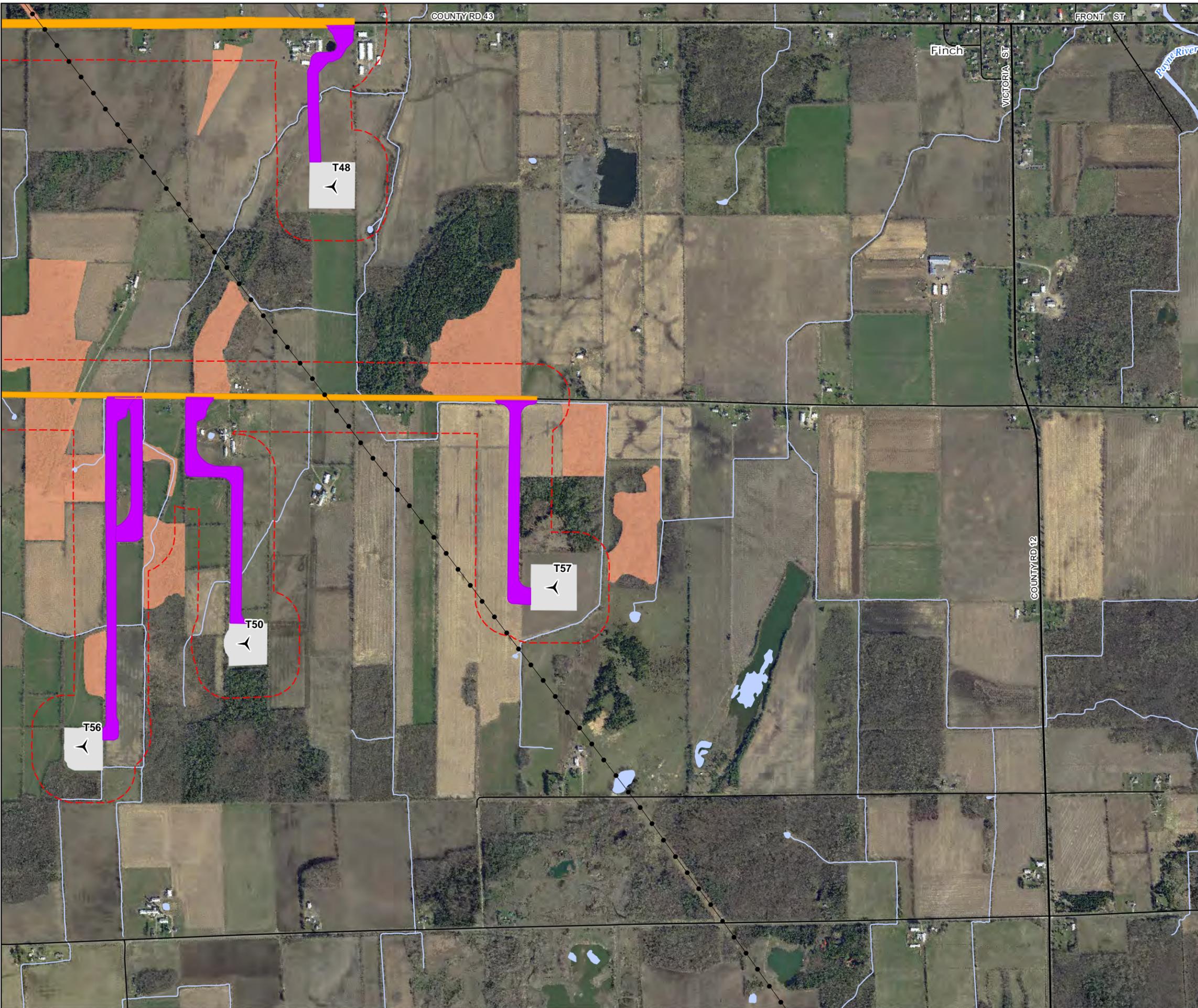


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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	

Nation Rise Wind Farm

Generalized Significant Wildlife Habitat



- Legend**
- Utility Line
 - Railway
 - Primary Road
 - Secondary Road
 - ~ Permanent Watercourse (LIO)
 - Open Water (LIO)
- Project Components**
- Project Area
 - Proposed Turbine
 - Proposed Access Road and Collection System
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Project: 1756 Date: May 5, 2017	NAD83 - UTM Zone 18 Size: 11x17" 1:14,000
0 200 400 600 800 Meters	
N	