

Wetland and Other Waters Delineation Report

Ashtabula Wind Farm, LLC North Dakota

**Prepared for FPL Energy
Juno Beach, FL**



Prepared by



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1.0 INTRODUCTION

Tetra Tech EC, Inc. (Tetra Tech) was retained by Ashtabula Wind Farm, LLC (Ashtabula Wind), a wholly-owned subsidiary of FPL Energy, LLC, to perform routine wetland delineations (RWD) and delineation of other potential waters of the United States (U.S.) at the site of the Ashtabula Wind Farm Project (Project). The Project is located in eastern North Dakota near the town of Valley City in Barnes County, North Dakota, as shown on **Figure 1**. The Project site includes mostly agricultural land and will consist of 133 turbines with a nameplate generating capacity of approximately 199.5 megawatts (MW).

The total Ashtabula Wind Farm project at completion will use 133 General Electric (GE) SLE 1.5 megawatt (MW) turbines with a designed nameplate generating capacity totaling 199.5 MW. Facilities planned for construction and operation of the Project include:

- turbine pads;
- turbine access roads;
- below ground electrical collection system cabling;
- substation (this parcel also used for O&M and laydown yards);
- junction boxes, and;
- overhead transmission line.

1.1 Site Visit and Regulatory Framework

The purpose of the site visit was to determine if any jurisdictional wetlands or other waters of the U.S. exist within the boundaries of the Project site. Potential permanent impacts to these wetlands or waters of the U.S. during the construction of the Project facilities were examined.

Wetlands with "jurisdictional status" are waters of the U.S. as defined by Section 404 of the Clean Water Act (CWA). These types of wetlands are regulated by the United States Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA). Several classes of water bodies are subject to federal jurisdiction under the CWA, including: traditional navigable waters (TNWs); non-navigable tributaries of TNWs that are relatively permanent; and wetlands that directly abut relatively permanent waters (RPWs) (USACE RGL 07-01).

The EPA and the USACE are required to assert jurisdiction over other certain types of waters based on a fact-specific analysis as to whether they have a significant nexus with a TNW. These types of waters include:

- Non-navigable tributaries that are relatively non-permanent.
- Wetlands adjacent to non-navigable tributaries that are relatively non-permanent.
- Wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary.

The regulations define adjacent as "bordering, contiguous, or neighboring," and state that wetlands separated from other waters of the U.S. by barriers such as natural river berms, man-made dikes and beach dunes may be considered adjacent wetlands. The ruling also requires that the agencies not generally assert jurisdiction over the following features:

- Swales or erosional features (e.g. gullies, small washes characterized by low volume, infrequent or short duration flow).
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

Recent guidance issued jointly by the EPA and the USACE states that the agencies will apply the significant nexus standards as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters.
- Significant nexus includes consideration of hydrologic and ecologic factors.

The regulations specify that tributaries to waters of the U.S. should be considered waters of the U.S. In the absence of adjacent wetlands, lateral jurisdiction over non-tidal waters extends to the ordinary high water mark. The definition of the ordinary high water mark is “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (65 *Fed. Reg.* 12823, 2000).

Only the USACE can make a final jurisdictional wetland determination at a site. If development is to occur, the USACE also determines the type of permit, if any, that may be required under the CWA. This report provides a description of wetlands and surface water bodies identified within the Project. Included is a description of the Project area, methods used to delineate wetlands, field survey results and references used to support the conclusions. Appendices include detailed aerial and topographic views, field data forms, Jurisdictional Determination (JD) Forms and site photographs.

The Valley City Wetlands Management District of the U.S. Fish and Wildlife Service (USFWS) manages four waterfowl production areas (WPAs) and multiple wetland easements within or near the Project area. The WPAs include the Breske, Grotberg, Henderson, and Getchell WPAs. Wetlands within USFWS easements on private property are held in perpetual easement under USFWS jurisdiction. The easements afford protection to wetland basins which provide important seasonal habitat to waterfowl and shorebird species during the spring migration and nesting seasons. The easements do not allow the burning, leveling, filling, and/or draining of easement wetlands or established buffers without a permit from the USFWS. However, landowners are permitted to till and farm these areas when they are not wet. No permanent impacts to these basins are allowed from wind farm construction activities. If impacts to USFWS easements wetlands occur, the landowner is responsible for ensuring that all impacts are mitigated and the wetland is restored to the pre-existing condition.

2.0 SITE DESCRIPTIONS AND LOCATION

The facilities for the proposed Project are located in 83 sections of land near the town of Valley City in Noltimier, Grand Prairie, Ashtabula, Baldwin and Ellsbury Townships, Barnes County, North Dakota as shown on **Figure 1** and as described in **Table 1**.

Table 1
Township, Range and Sections Within Project Area

Township	Range	Township Name	Sections
141N	57W	Noltimier	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17
142N	57W	Grand Prairie	2,3,4,5,6,7,8,9,10,11,14,15,16,17,18,19,20,21,22,26,27,28,29,30,31,32,33,34,35,36
142 N	58W	Ashtabula	1,2,11,12,13,14,24,25,36
142N	57W	Baldwin	9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,26,27,28,29,30,31,32,33,34,35
143N	56W	Ellsbury	7,18

The Project is located in Barnes County in the Glaciated Drift Plain physiographic region. Surface elevations range from approximately 1,400 to approximately 1,900 feet above sea level. The Glaciated Drift Plain is characterized by gently rolling topography with numerous shallow saucer-shaped depressions, but few hills or deep cup-shaped depressions. This landform occurs where moderate amounts of glacial till were deposited at the base of a moving glacier and by collapse from within the glacier when it finally melted. The surficial material consists primarily of glacial till with thin layers of windblown loess on ridges and alluvium near streams.

Land use in the Project area primarily consists of rural agricultural land, and is comprised almost entirely of cultivated farm fields, interspersed with small scattered woodlots, narrow grassed or vegetated drainages, and fallow areas. Current property use is almost exclusively limited to cultivated fields planted with corn, soybeans, wheat, barley, sunflowers, and pastures used for cattle grazing. Primary crops grown in the region are corn and soybeans, with more than 66 percent of the land in the Project area dedicated to production. Most cultivated areas have drain tile systems installed to improve agricultural production of the glacial till soils. Receiving drainages have been channelized or contoured to accommodate drainage system flows and to facilitate agricultural equipment crossing. Contoured drainage areas are typically grassed and planted with a mix of native and non-native grasses and forbs. Untilled/fallow fields have a mixture of grasses, volunteer corn plants, wild carrot, milkweeds, and mustards. Roadside edges consist of mowed and un-mowed native and non-native grasses. Similar buffers exist along low-lying creeks and drainage ditches in the farm fields.

Industrial developments in the Project area are limited to pipelines, power lines, and communication towers. Overhead and/or underground transmission lines and primary and secondary roads pass through the Project area.

Several transportation corridors occur within the Project area, including state highways and county roads. Improvements within the Project area include asphalt-paved county and township roads, gravel surfaced roads and two-track grassed farm access roads and trails.

3.0 METHODS

Wetlands within the Project area were delineated in April 2008 using the methods described in the 1987 USACE Wetland Delineation Manual (Environmental Laboratory, 1987) (1987 Manual). Delineation activities followed supplemental delineation guidance by the USACE, contained in the field memoranda dated February 20, 1992 and March 6, 1992, as well as the Questions and Answers memorandum dated

October 7, 1991. These methods incorporated a three-parameter approach using vegetation, soils and hydrology to identify the presence of freshwater wetlands. Off-site determination methods were first used to identify probable locations of wetlands and other waters of the U.S., while on-site methods were used to verify wetland identifications and gather information to support Tetra Tech's assessment of probable jurisdictional determinations. Corps jurisdiction was evaluated using the Corps JD Form Instruction Guidebook (USACE/USEPA, 2007).

3.1 Data Review

Prior to and during the field reconnaissance, available information was reviewed to identify areas that may exhibit characteristics of jurisdictional wetlands and other waters of the U.S. Tetra Tech evaluated these data layers as a whole to make probable wetland and other waters determinations; this included review of aerial photographs, topographic map(s), and the Barnes County Soil Survey. Many areas which were identified as potential wetland areas appeared to be vegetated grass swales constructed to aid in drainage of land under agricultural production. The sections below discuss the data used in this review.

3.1.1 Aerial Photograph Review

Locations of proposed wind farm facilities with the potential to impact wetland areas were identified based on a review of aerial photography obtained from the United States Geological Service (USGS) and site-specific flyover aerial photography obtained from Ashtabula Wind. The proposed wind farm facility layout was overlain onto digital versions of aerial photographs using ESRI Geographic Information System (GIS) software (**Figure 2**). Areas of potential wetlands were identified for further evaluation.

3.1.2 Topographic/National Wetlands Inventory Map Review

The proposed wind farm facilities layout was overlain onto digital versions of the USGS 7.5-minute topographic maps which make up the proposed Project area using GIS software (**Figure 3**). Perennial, intermittent and ephemeral streams and drainages which potentially could be affected by the proposed wind farm facilities were identified and investigated during field delineation.

The National Wetlands Inventory (NWI) Map for the Project area was downloaded from the USFWS Wetlands Geodatabase GIS Repository (2008). According to this map, areas identified as wetlands and waters of the U.S. were present within the Project area. Some farm or stock ponds were present within the Project vicinity, but they generally support limited amounts of wetland vegetation. The NWI map data is presented on **Figure 3**.

3.1.3 Soil Survey Review

Soil survey data for Barnes County, North Dakota was obtained from the Natural Resource Conservation Service (NRCS) Service Center Office in both printed and digital formats. These maps depict the distribution of soil series and mapping units. This information was used to study the distribution of hydric soils on the site. Numerous soil types are present within the Project area. Soil, as it relates to wetland delineations, must be a hydric soil for the area to qualify as a wetland in accordance with the 1987 Manual. Some of these mapping units have been designated "hydric soils." Hydric soils are defined as soils that formed under conditions of saturation, flooding or ponding that occurs long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, July 13, 1994). Soil types which were identified as hydric soils in the Project area are presented in **Table 2**. The distribution of hydric soils within the Project area is depicted on **Figure 4**.

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Balaton	10YR 2/1 Ap	0-8	Black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; friable; about 3 percent gravel; slightly effervescent; slightly alkaline; abrupt smooth boundary.
Balaton	10YR 3/1 A	8-13	Dark gray (10YR 3/1) loam, dark gray (10YR 4/1) dry; weak and moderate very fine subangular blocky structure; friable; about 3 percent gravel; strongly effervescent; moderately alkaline; clear irregular boundary.
Barnes-Buse			SEE NEXT TWO SERIES
Barnes	N 2/0 Ap	0-8	Black (N 2/0) light silty clay loam high in content of sand; moderate, very fine, granular structure; friable; slightly acid; gradual boundary.
Barnes	N 2/0 A12	8-16	Black (N 2/0) silty clay loam high in content of sand; moderate, very fine and fine, granular structure; friable; slightly acid; gradual boundary.
Buse	10YR 2/1 Ap	0-8	Black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; common fine and medium roots throughout; common fine irregular masses of lime; about 2% gravel; slightly effervescent; slightly alkaline; abrupt smooth boundary.
Buse	10YR 5/4 Bk1	8-22	Yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; friable; common medium irregular masses of lime; about 2% gravel; violently effervescent; moderately alkaline; clear smooth boundary.
Barnes-Sioux			SEE NEXT TWO SERIES
Barnes	N 2/0 Ap	0-8	Black (N 2/0) light silty clay loam high in content of sand; moderate, very fine, granular structure; friable; slightly acid; gradual boundary.
Barnes	N 2/0 A12	8-16	Black (N 2/0) silty clay loam high in content of sand; moderate, very fine and fine, granular structure; friable; slightly acid; gradual boundary.
Sioux	10YR 2/1 A	0-6	Black (10YR 2/1) gravelly loam, dark gray (10YR 4/1) dry; weak fine granular structure; slightly hard, friable; many very fine roots; few very fine tubular pores; about 18% mixed rock fragments; slightly alkaline; clear smooth boundary.
Sioux	10YR 3/2 ABk	6-9	Dark grayish brown (10YR 3/2) gravelly sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; soft, very friable; common very fine roots; about 9% calcium carbonate equivalent; about 30% mixed rock fragments; strong effervescence; moderately alkaline; clear smooth boundary.
Barnes-Svea			SEE NEXT TWO SERIES

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Barnes	N 2/0 Ap	0-8	Black (N 2/0) light silty clay loam high in content of sand; moderate, very fine, granular structure; friable; slightly acid; gradual boundary.
Barnes	N 2/0 A12	8-16	Black (N 2/0) silty clay loam high in content of sand; moderate, very fine and fine, granular structure; friable; slightly acid; gradual boundary.
Svea	10YR 3/1 Ap	0-7	Dark gray (10YR 3/1) loam, black (10YR 2/1) moist; weak coarse subangular blocky structure parting to moderate medium granular; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine pores; neutral; abrupt smooth boundary.
Svea	10YR 3/1	7-10	Dark gray (10YR 3/1) loam, black (10YR 2/1) moist; weak coarse prismatic structure parting to moderate medium granular; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; common fine pores; neutral; clear wavy boundary.
Bearden	10YR 2/1 Ap	0-7	Black (10YR 2/1) silty clay loam; moderate very fine subangular blocky structure parting to moderate fine angular; very hard, friable, slightly sticky and slightly plastic; common fine roots; many fine pores; few threads of carbonates; strong effervescence; slightly alkaline; abrupt smooth boundary.
Bearden	10YR 4/1 ABk	7-18	Dark gray (10YR 4/1) and very dark gray (10YR 3/1) silty clay loam; weak coarse and medium subangular blocky structure; very hard, friable, sticky and plastic; common fine roots; many fine pores; few fine masses of carbonates; disseminated carbonates; violent effervescence; moderately alkaline; clear irregular boundary.
Colvin	10YR 2/1 A	0-10	Black (10YR 2/1) silty clay loam; weak coarse prismatic structure parting to moderate medium granular; hard, friable, sticky and plastic; many roots; many fine pores; strong effervescence; slightly alkaline; clear wavy boundary.
Colvin	5Y 6/1 Bkg1	10-20	Gray (5Y 6/1) and olive gray (5Y 5/2) silty clay loam; very weak medium subangular blocky structure parting to weak fine granular; hard, friable, slightly sticky and plastic; common roots; common fine pores; few masses of carbonates; violent effervescence; moderately alkaline; gradual wavy boundary.
Gardena-Zell			SEE NEXT TWO SERIES
Gardena	10YR 3/1	0-9	Dark gray (10YR 3/1) silt loam, black (10YR 2/1) moist; weak coarse and medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine pores; slightly alkaline; abrupt smooth boundary.

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Gardena	10YR 3/1 A	9-15	Dark gray (10YR 3/1) silt loam, black (10YR 2/1) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine pores; slightly alkaline; gradual wavy boundary.
Zell	10YR 4/1 A	0-6	Dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; moderate fine and medium granular structure; soft, very friable; slight effervescence; slightly alkaline; clear smooth boundary.
Zell	2.5 Y 5/2 Bk1	6-11	Grayish brown (2.5 Y 5/2) silt loam, dark grayish brown (2.5 Y 5/4) moist; weak medium and coarse subangular blocky structure parting to weak fine granular; soft, very friable; strong effervescence; moderately alkaline; clear wavy boundary.
Hamerly-Tonka			SEE NEXT TWO SERIES
Hamerly	10YR 3/1 Ap	0-8	Dark gray (10YR 3/1) loam; weak medium subangular blocky structure parting to moderate medium granular; friable; slightly sticky; strong effervescence; abrupt smooth boundary.
Hamerly	2.5 Y 6/2 Bk1	8-18	Brownish gray (2.5 Y 6/2) loam; weak medium and fine subangular blocky structure; friable; violent effervescence; gradual wavy boundary.
Tonka	10YR 2/1 A	0-13	Black (10YR 2/1) silt loam; moderate fine granular structure parting to moderate thin platy; soft, friable, slightly sticky and slightly plastic; many fine roots; many fine pores; slightly acid; abrupt wavy boundary.
Tonka	10YR 4/1 E	13-19	Dark gray (10YR 4/1) loam; many medium prominent dark brown (10YR 3/3) and dark yellowish brown (10YR 3/4) redoximorphic concentrations; moderate thin platy and moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; moderately acid; abrupt irregular boundary.
Lanona-Swenoda			SEE NEXT TWO SERIES
Lanona	10YR 2/1 Ap	0-8	Black (10YR 2/1) fine sandy loam; weak medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; many fine and very fine pores; neutral; abrupt smooth boundary.
Lanona	10YR 3/2 Bw1	8-12	Dark grayish brown (10YR 3/2) fine sandy loam; weak coarse prismatic structure parting to weak coarse subangular blocky; slightly hard, very friable, slightly sticky, and slightly plastic; common fine and very fine roots; common fine and very fine pores; neutral; clear smooth boundary.

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Swenoda	10YR 2/1 Ap	0-9	Black (10YR 2/1) fine sandy loam; weak coarse granular structure; slightly hard and very friable; slightly sticky and slightly plastic; many very fine and fine roots; neutral; clear smooth boundary.
Swenoda	10YR 2/1 A	9-13	Black (10YR 2/1) fine sandy loam; moderate medium subangular blocky structure; slightly hard and very friable; slightly sticky and slightly plastic; many very fine and fine roots; neutral; clear wavy boundary.
Lismore-Kranzburg			SEE NEXT TWO SERIES
Lismore	10YR 3/1 Ap	0-8	Dark gray (10YR 3/1) silty clay loam; weak fine granular structure; very hard; friable, slightly sticky, slightly plastic; slightly acid; abrupt smooth boundary.
Lismore	10YR 3/1 A	8-17	Dark gray (10YR 3/1) silty clay loam; weak coarse prismatic structure parting to weak medium subangular blocky; hard, friable, slightly sticky and slightly plastic; slightly acid; clear wavy boundary.
Kranzburg	10YR 2/1 Ap	0-9	Black (10YR 2/1) silty clay loam; weak fine granular structure: hard, friable, slightly sticky and slightly plastic; common fine and few medium roots; few very fine pores; neutral pH; abrupt smooth boundary.
Kranzburg	10YR 4/2 Bw1	9-18	Grayish brown (10YR 4/2) silty clay loam; moderate medium prismatic structure parting to weak medium and fine subangular blocky; hard, friable, slightly sticky and slightly plastic; few fine roots; common fine and very fine pores; slightly alkaline; clear smooth boundary.
Overly-Bearden			SEE NEXT TWO SERIES
Overly	10YR 3/1 Ap	0-5	Dark gray (10YR 3/1) silty clay loam; moderate fine granular structure; hard, friable, slightly sticky and slightly plastic; many fine roots; many fine pores; neutral; abrupt smooth boundary;
Overly	10 YR 3/1 A	5-10	Dark gray (10YR 3/1) silty clay loam; moderate coarse and medium angular blocky structure parting to moderate fine subangular blocky; hard friable, sticky and slightly plastic; many roots; many fine pores; neutral; clear wavy boundary.
Bearden	10YR 2/1 Ap	0-7	Black (10YR 2/1) silty clay loam; moderate very fine subangular blocky structure parting to moderate fine angular; very hard, friable, slightly sticky and slightly plastic; common fine roots; many fine pores; few threads of carbonates; strong effervescence; slightly alkaline; abrupt smooth boundary.

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Bearden	10YR 4/1 ABk	7-18	Dark gray (10YR 4/1) and very dark gray (10YR 3/1) silty clay loam; weak coarse and medium subangular blocky structure; very hard, friable, sticky and plastic; common fine roots; many fine pores; few fine masses of carbonates; disseminated carbonates; violent effervescence; moderately alkaline; clear irregular boundary.
Parnell	10YR 2/1 A1	0-15	Black (10YR 2/1) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common roots; few fine distinct dark brown (7.5 YR 3/2) and few fine prominent reddish brown (5YR 4/4) redoximorphic concentrations; neutral; clear smooth boundary.
Parnell	10YR 3/1 A2	15-22	Dark gray (10YR 3/1) silt loam; moderate fine and medium platy structure to weak very fine subangular blocky; friable; few roots; few patchy gray (10YR 6/1) coatings on faces of peds when dry; slightly acid; clear smooth boundary.
Renshaw-Sioux			SEE NEXT TWO SERIES
Renshaw	10YR 4/1 Ap	0-7	Dark gray (10YR 4/1) loam; weak fine granular structure; slightly hard, very friable; neutral; clear smooth boundary.
Renshaw	10YR 4/2 Bw	7-15	Grayish brown (10YR 4/2) loam; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, very friable; about 5% gravel; neutral; abrupt wavy boundary.
Sioux	10YR 2/1 A	0-6	Black (10YR 2/1) gravelly loam, dark gray (10YR 4/1) dry; weak fine granular structure; slightly hard, friable; many very fine roots; few very fine tubular pores; about 18% mixed rock fragments; slightly alkaline; clear smooth boundary.
Sioux	10YR 3/2 ABk	6-9	Dark grayish brown (10YR 3/2) gravelly sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; soft, very friable; common very fine roots; about 9% calcium carbonate equivalent; about 30% mixed rock fragments; strong effervescence; moderately alkaline; clear smooth boundary.
Southam	5Y 2/1 Ag1	0-16	Black (5Y2/1) silty clay loam; massive; firm, sticky and plastic; common fine snail shell fragments; strong effervescence; slightly alkaline; gradual wavy boundary.
Southam	5Y 2/1 Ag2	16-26	Black (5Y 2/1) silty clay; few fine prominent olive brown (2.5Y 4/4) redox concentrations; massive; firm, sticky and plastic; common fine snail shell fragments; strong effervescence; slightly alkaline; gradual wavy boundary.
Svea-Cavour			SEE NEXT TWO SERIES

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Svea	10YR 3/1 Ap	0-7	Dark gray (10YR 3/1) loam, black (10YR 2/1) moist; weak coarse subangular blocky structure parting to moderate medium granular; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine pores; neutral; abrupt smooth boundary.
Svea	10YR 3/1	7-10	Dark gray (10YR 3/1) loam, black (10YR 2/1) moist; weak coarse prismatic structure parting to moderate medium granular; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; common fine pores; neutral; clear wavy boundary.
Cavour	10YR 3/1	0-6	Dark Gray (10YR 3/1) loam; moderate fine and medium granular structure; slightly hard, friable; neutral; abrupt smooth boundary.
Cavour	10YR 5/1 and 6/1 E	6-8	Gray (10YR 5/1 and 6/1) silt loam; weak thin platy structure; slightly hard, very friable; neutral; abrupt wavy boundary.
Vallers	10YR 2/1 Ap	0-9	Black (10YR 2/1) loam; moderate very fine and fine granular structure; hard, friable, sticky and plastic; strong effervescence; slightly alkaline; abrupt smooth boundary.
Vallers	5Y 5/1 and 5/2 Bkg	9-22	Gray (5 Y 5/1) and olive gray (5Y 5/2) clay loam; many medium prominent yellowish brown (10YR 5/4) redoximorphic concentrations; weak medium subangular blocky structure; hard, firm, sticky and plastic; about 5% pebbles and other rock fragments; violent effervescence; slightly alkaline; clear wavy boundary.
Vallers-Parnell			SEE NEXT TWO SERIES
Vallers	10YR 2/1 Ap	0-9	Black (10YR 2/1) loam; moderate very fine and fine granular structure; hard, friable, sticky and plastic; strong effervescence; slightly alkaline; abrupt smooth boundary.
Vallers	5Y 5/1 and 5/2 Bkg	9-22	Gray (5 Y 5/1) and olive gray (5Y 5/2) clay loam; many medium prominent yellowish brown (10YR 5/4) redoximorphic concentrations; weak medium subangular blocky structure; hard, firm, sticky and plastic; about 5% pebbles and other rock fragments; violent effervescence; slightly alkaline; clear wavy boundary.
Parnell	10YR 2/1 A1	0-15	Black (10YR 2/1) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common roots; few fine distinct dark brown (7.5 YR 3/2) and few fine prominent reddish brown (5YR 4/4) redoximorphic concentrations; neutral; clear smooth boundary.

Table 2
Hydric Soils found in the Ashtabula Wind Farm Project

Soil Name	Color (wet)	Interval (inches)	Description
Parnell	10YR 3/1 A2	15-22	Dark gray (10YR 3/1) silt loam; moderate fine and medium platy structure to weak very fine subangular blocky; friable; few roots; few patchy gray (10YR 6/1) coatings on faces of peds when dry; slightly acid; clear smooth boundary.

4.0 ON-SITE RECONNAISSANCE AND DELINEATION

Tetra Tech biologists conducted field investigations from April 26 through April 30, 2008 to determine the presence and extent of potential wetland vegetation, soil and hydrology as they relate to the proposed locations of Project facilities. This study was based on the current federal regulatory definition of wetlands as generally defined in, and regulated under 33 Code of Federal Regulations (CFR) and 40 CFR 230. Methodology is described in **Section 3.0** above.

At most sites, point-specific field data on soils, vegetation, and hydrology were collected and documented during subsequent field visits. The following Project facilities and associated buffer areas were surveyed for the presence of wetlands:

- Turbine Locations: 250-foot radius;
- Private Access Roads: 250-foot wide area (125 feet on either side of centerline);
- Public Access Roads: 66-foot wide area (33 feet on either side of centerline);
- Interconnection lines: 250-foot wide area (125 feet on either side of centerline); and,
- Substation (this parcel also used for O&M and Laydown Yard).

Wetland and Relatively Permanent Water (RPW) boundaries were marked at 50- to 75-foot intervals (depending on the line of sight) with pin flags which were numbered sequentially.

Generally, if a linear feature such as a drainage or grass swale was being investigated, transects were placed perpendicular to the feature being investigated at the location of the proposed potential impact that would result from construction of the project facility. Sampling plots were then placed along each transect. These plots were the points in the field at which wetland characteristics were studied in accordance with the USACE 1987 Wetlands Delineation Manual (1987 Manual). Typically, Sample Plot "A" was oriented within the feature being investigated at a location determined to have the highest potential to exhibit wetland characteristics. This determination was based on local topography, presence of defined bed and bank, undercutting, sediment deposition, presence of standing or flowing water or the vegetation. If positive indicators of wetland vegetation, hydrology, and hydric soils as defined by the 1987 Manual were present at Plot "A", data was collected from additional sample plots placed to delineate the transition from wetland to non-wetland habitats. The boundary of each wetland delineated was determined as the location where at least one of the above three parameters failed to meet wetland criteria. Following the site visit by Tetra Tech wetland biologists, a subsequent field effort was carried out from May 12-17, 2008 by a North Dakota Professional Soil Classifier. Soil characterization was performed for those areas which were determined to be USFWS easement wetlands and/or USACE wetlands or RPWs in order to determine if hydric soils were present as required by State of North Dakota regulations.

Vegetation within each sample plot was characterized to determine dominance of either hydrophytic or

non-hydrophytic vegetation. Dominance was estimated based on the percent coverage within sample plots with a 5-foot radius for herbaceous vegetation and a 30-foot radius for trees and shrubs. Wetland indicator status for all plant species follows the USFWS Region 6 *National List of Plant Species That Occur in Wetlands*. Hydrology was assessed by evaluating each sample plot for field indicators of wetland hydrology such as inundation, soil saturation, water marks, drift lines, drainage patterns, and topographic position.

Plot location data was collected using Trimble©, GeoXH™ Global Positioning System (GPS) surveying units equipped with Terra Sync, Version 3.10 software. This Trimble unit utilizes the Wide Area Augmentation System (WAAS) which employs a system of satellites and ground stations that provide GPS signal corrections, increasing position accuracy an average of up to five times better than a non-WAAS enabled GPS receiver. During data collection activities the unit's internal antenna was used. The locations were collected in Universal Trans Mercator (UTM) coordinates referenced to the North American Datum (NAD) 1983 datum.

5.0 RESULTS

The following sections describe conditions at the Project site based on data collected at the plots referenced above. Due to the extremely large Project area, the results of the wetland delineations are discussed by Township Name and section number. Site names for those areas which had potential impacts from wind farm facilities are identified with a location identification number (ID) consisting of Township number, the section number in which the specific site is located, followed by a site number. Following this nomenclature system, a location with the ID of 142-24-2, for example, would be Location 2 in Section 24 of Township 142.

Copies of field data sheets and site photographs taken of the investigated areas to document delineation activities are included in **Appendix A** and are identified by location ID and organized by Township, Range and section number as described above. An aerial photograph and USGS 7.5 Minute topographic map of each section are also presented in **Appendix A**. Copies of the USACE JD Soil Description Forms completed for those areas of potential impacts from turbine access road construction are presented in **Appendix B**. **Figure 2** displays all Project facility locations on an aerial photograph. **Figure 3** displays the Project on a USGS 7.5 Minute topographic map. A summary of locations investigated, which includes location ID, facility type, habitat type, and jurisdictional opinion, is presented in **Table 3**.

USFWS easement wetland boundaries as marked on the easement maps provided to Tetra Tech depict approximate location, size and shape of all protected wetlands based on information and maps available at the time the USFWS easement maps were prepared. The delineated wetlands boundaries as defined by Tetra Tech, represent the wetland boundaries determined by application of the wetland delineation methods prescribed in the USACE 1987 Manual.

5.1 Site Vegetation

Much of the vegetation encountered in the Project area consisted of crops or herbaceous species typical of fallow fields and pastures. Areas identified as non-wetland grass swales were commonly vegetated with a mix of native and non-native grasses and forbs, and were generally mowed on an annual basis to limit invasion by shrubs and trees. Wetland areas were typically vegetated with a variety of wetland plants typical of the eastern North Dakota ecotone and comprised of a variety of sedge, grass, forb, shrub and tree species. Dominant vegetation identified at each plot is presented on the field data sheets in **Appendix A**.

5.2 Project Soils

Seventeen hydric soils were identified during field surveys and were consistent with soil series descriptions.

These soils included: 66B-Balaton loam, 14D-Barnes-Buse loams, 16B-Barnes-Sioux loams, 17B-Barnes-Svea loams, 18-Bearden silty clay loam, 19-Colvin silty clay loam, 40B-Gardena-Zell silt loams, 50-Hamerly-Tonka complex, 15B-Lanona-Swenoda fine sandy loams, 12-Lismore-Kranzburg silty clay loams, 62-Overly-Bearden silty clay loams, 3-Parnell silty clay loam, 67C-Renshaw-Sioux loams, 6-Southam silty clay loam, 87-Svea-Cavour loams, 77-Vallers loam and 71-Vallers-Parnell complex. **Table 2** lists the soil types identified as hydric soils in Barnes County. See **Figure 4** for a depiction of the Project on a hydric soil map.

5.3 Site Hydrology

The drainage networks in North Dakota are well established, with low stream gradients, scattered areas of poor drainage and original wetlands remaining. The Project area has been subjected to historic modification of landform and hydrology. Most of the modification was conducted to improve drainage and facilitate agricultural commodity production by alteration of natural drainage contours. Smaller drainages have been channelized and deepened with narrow riparian buffers consisting of native and non-native grasses. A limited number of terrace systems designed to slow runoff and prevent erosion are also present in the Project area.

5.4 Wetlands

Wetland types and riparian communities found in the Project area include emergent and scrub-shrub wetlands, floodplains and mixed deciduous woodlands.

Approximately 317 areas which exhibited the potential to be wetlands were identified during desktop review prior to field verification. These areas were subsequently investigated during the field reconnaissance conducted in April 2008. These areas are summarized in **Table 3** and shown on **Figures 3** and **4**. Field reconnaissance confirmed the presence of 138 areas which meet the definition of wetlands. Positive indicators for all three wetland parameters were not identified in the remaining features. Ninety-five jurisdictional areas, which consist of RPWs with seasonal flow and isolated wetlands held in perpetual easement by the USFWS, were identified. A summary of these jurisdictional areas is presented in **Table 4**. USFWS easement wetland boundaries as marked on the easement maps provided to Tetra Tech depict approximate location, size and shape of all protected wetlands based on information and maps available at the time the USFWS easement maps were prepared. The delineated wetlands boundaries, as defined by Tetra Tech, represent the wetland boundaries determined by application of the wetland delineation methods prescribed in the USACE 1987 Manual. Supporting documentation for areas investigated is presented in **Appendix A**. **Figure 5** depicts jurisdictional areas located within the buffer of Project facilities.

6.0 CONCLUSIONS

During this investigation, Tetra Tech identified ninety-five locations at which proposed project facilities or activities (road construction, installation of UE or aerial transmission line installation) are in proximity to areas which were classified as jurisdictional waters of the U.S. Ninety locations were determined to be isolated seasonal farmed wetlands or herbaceous wetlands which are protected by perpetual easements purchased by the USFWS. These jurisdictional areas are identified on **Table 4** and depicted in **Figure 5**.

The landform and hydrology of large portions of the site have been modified to improve drainage and facilitate agricultural commodity production. Areas identified as non-wetland grass swales did not possess positive indicators for vegetation, hydrology and soils or characteristics of RPWs such as ordinary high water marks or defined bed and banks and therefore did not meet the definition of jurisdictional areas according to the 1987 Manual or U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. Distinct areas that met the definition of wetlands were delineated at the site. The majority of

locations identified as wetlands were isolated wetlands which do not meet the significant nexus test for classification as a water of the U.S. Wetland areas which were classified as USACE jurisdictional areas were wetlands which directly abut or are immediately adjacent to RPWs with seasonal flow or were areas which were classified as RPWs. Most RPWs were channelized or altered drainages or streams with defined bed and banks and exhibited an OHWM.

Based on the results of this investigation, the project layout at the time of the delineation, and micro-siting activities, there will be no permanent impacts to jurisdictional areas planned from the Project construction activities. No temporary or permanent impacts are anticipated from the installation of UE collector lines beneath jurisdictional areas as HDD techniques will be used for UE collector installation.

No temporary or permanent impacts to jurisdictional areas will occur from the construction of transmission line structures. No transmission line structures will be placed within jurisdictional areas along the proposed transmission line route.

As currently designed, the project is eligible for no notification authorization under NWP #12 Utility Line Activities.

7.0 REFERENCES

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Tables

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
141-2-1n&s	Collector	Yes	RPW -Seasonal Flow	Intermittent Stream, USACE Jurisdiction and USFWS Wetland Easement
141-2-2	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-3	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-4	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-5	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-6	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-7/8	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-9	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-10/11	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-2-12	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
141-2-13	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
141-3-1	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
141-3-2e&w	Collector	Yes	RPW -Seasonal Flow	Intermittent Stream, USACE Jurisdiction
141-3-3	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed
141-4-1	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
141-4-2	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-4-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
141-4-4	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
141-4-5	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-4-6	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-4-7	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-4-8	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-4-9	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-4-10	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-4-11	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
141-4-12	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
141-5-2	Within buffer	No	Perennial	Lake
141-5-3	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
141-5-4	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
141-6-1	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
141-6-2	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
141-6-3	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
141-6-4	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
141-6-5	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
141-6-6	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-6-7	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-6-8	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-8-1	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
141-8-2	Road/collector	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
141-9-1	Road/collector	No	NA	Rock pile
141-9-2	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
141-9-3	Road/collector	No	NA	Rock pile
141-9-4	Road/collector	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
141-11-1	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-11-2	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-11-3	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
141-11-4	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
141-11-5	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-3-1	Collector	Yes	Seasonal	Intermittent Stream, USACE Jurisdiction
142-4-1	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-4-2	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-4-3	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-4-4	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-4-5	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-4-6	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-4-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-4-8	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-4-9	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-4-10	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-4-11	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-5-1	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-5-2	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-5-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
142-5-4	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-5-5	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-5-6	Collector	No	NA	Pasture
142-5-7	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-5-8	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-5-9	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-5-10	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-5-11	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-5-12	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-6-1	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-6-2	Road	No	NA	Cropland/Farmed/Effectively Drained
142-7-1	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-7-2	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-7-3	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-7-4	Road	No	Isolated Wetland	Isolated Herbaceous Wetland
142-7-5	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-8-1	Road	No	NA	Cropland/Farmed/Effectively Drained
142-8-2	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-8-3	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-8-4	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-8-5	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-8-6	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-8-7	Collector	No	NA	Pasture
142-8-8	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-8-9	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-8-10	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-9-1	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-9-2	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-9-3	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-9-4	Turbine	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-9-5	Turbine	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-9-6	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-9-7	Road	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed w/ Wetland Easement

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
142-9-8	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-9-9	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-9-10/11/12	Road/collector	No	Isolated Wetland	Seasonal Wetland, Farmed, Location 12 has a USFWS Wetland Easement
142-9-13	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-9-14	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-9-15	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-9-16	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-9-17	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-1	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-10-2	Road	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-10-3	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-10-4	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-10-5	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-7	Laydown Area	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-8	Laydown Area	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-9	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-10-10	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-11	Collector	Yes	RPW - Seasonal Flow	Intermittent Stream, USACE Jurisdiction
142-10-12	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-13	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-10-14	Within buffer	No	NA	Farmers junk pile
142-10-15	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-10-16	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-1	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-16-3	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-16-4	Collector	Yes	RPW - Seasonal Flow	Intermittent Stream, USACE Jurisdiction
142-16-5	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-8	Road	No	NA	Cropland/Farmed/Effectively Drained
142-16-9	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-16-10	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-16-11	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-12	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-13	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-16-14	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-17-1	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
142-17-2	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-17-3	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-17-4	Collector	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-17-5	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-17-6	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-17-7	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-17-8	Collector	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-18-1	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-18-2	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-18-3	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-20-1	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-20-2	Road	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-20-3	Road	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-20-4	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-20-4a	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-20-5	Road/collector	No	NA	Grass swale
142-20-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-21-1	Now Outside the Buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-21-2	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-21-3	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-21-4	Road	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-21-5	Within buffer	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-21-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-21-7	Collector	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
142-21-8	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-22-1	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-22-2	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-22-3	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-27-1	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-27-2	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-28-1	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-28-2	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
142-28-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-28-4	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-28-5	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-28-6	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-28-7	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-28-8	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-9	Road/collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-10	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-11	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-28-12	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-13	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-28-14	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-15	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-16	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-28-17	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-28-18	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-28-19	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-28-20	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-21	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-28-22	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-31-1	Collector	No	Perennial	Lake side
142-31-2	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-31-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-32-1	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-32-2	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-32-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-32-4	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-32-5	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-32-6	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-32-7	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-32-8	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-33-1	Outside Buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
142-33-2e&w	Road/collector	No	NA	Field Drainage
142-33-3	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-33-4	Road	No	NA	Cropland/Farmed/Effectively Drained
142-33-5	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-33-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-33-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-33-8	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-33-9	Road/collector	No	Isolated Wetland	Isolated Herbaceous Wetland
142-33-10	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-33-11	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-33-12	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-33-13	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-33-14	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
142-33-18	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
142-34-1	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-34-2	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-34-3	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-34-3b	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-34-4	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-34-5	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
142-34-6	Collector	No	NA	Cropland/Farmed/Effectively Drained
142-34-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
142-34-8	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
142-34-9	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-13-1	Tline	Yes	Perennial	Lake, USACE Jurisdiction
143-14-1e&w	Collector	Yes	PRPW - Seasonal Flow	Intermittent Stream with abutting herbaceous wetland, USACE Jurisdiction and USFWS Wetland Easement
143-15-1	Tline	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-15-2	Tline	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-15-3	Tline	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-15-4	Tline	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
143-15-5	Tline	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-15-5b	Tline	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-15-6	Tline	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-19-1	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-20-1	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-20-2	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-20-3	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-20-4	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-20-5	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-20-6	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-20-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-21-1	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-22-1	Outside Buffer	No	Isolated Wetland	Isolated Forested Wetland w/ USFWS Wetland Easement
143-22-2	Collector	No	NA	Cropland/Farmed/Effectively Drained
143-22-3	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
143-22-4	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-22-5	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-22-6	Road/collector	No	Isolated Wetland	Seasonal Wetland, Effectively Drained and Farmed
143-22-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-22-8	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-22-9	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-22-10	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-22-11	Tline	No	Isolated Wetland	Isolated Herbaceous Wetland
143-27-1	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-27-1b	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-27-2	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-3	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-4	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-5	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
143-27-6	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-7	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-7b	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-8	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-9/10/11	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-12	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-27-14	Collector	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-28-1	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-28-2	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-28-3	Within buffer	No	Isolated Wetland	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-28-4	Within buffer	No	NA	Grass swale
143-29-1	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-29-2	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-29-3	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-29-4	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-30-1	Collector	No	NA	Cropland/Farmed/Effectively Drained
143-30-2	Collector	No	NA	Cropland/Farmed/Effectively Drained
143-30-3	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-30-4	Within buffer	No	NA	Seasonal Wetland, Effectively Drained and Farmed
143-30-5	Collector	No	NA	Cropland/Farmed/Effectively Drained
143-30-6	Road	No	NA	Cropland/Farmed/Effectively Drained
143-32-1	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-32-2	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-32-3	Collector	No	NA	Cropland/Farmed/Effectively Drained
143-32-4	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
143-32-5	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-32-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-32-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-32-8	Road	No	NA	Cropland/Farmed/Effectively Drained
143-32-9	Collector	No	NA	Cropland/Farmed/Effectively Drained

Table 3
Ashtabula Wind Farm
Summary of Investigated Areas

Location ID	Facility Type	RPW(Y/N)	Type	Area Description
143-32-10	Road	No	Isolated Wetland	Isolated Herbaceous Wetland
143-32-11	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-32-12	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-33-2	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-33-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-33-4	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-33-5	Within buffer	No	NA	Cropland/Farmed/Effectively Drained
143-33-6	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
143-33-7	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-33-8	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
143-33-9	Collector	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-33-10	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-33-11	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-33-12	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland w/ USFWS Wetland Easement
143-33-13	Collector	No	NA	Seasonal Wetland, Farmed w/ USFWS Wetland Easement
143-34-1	Tline	No	NA	Cropland/Farmed/Effectively Drained
143-34-2	Tline	No	Isolated Wetland	Isolated Herbaceous Wetland
143-34-3	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-34-4	T-Line and Collector	No	Isolated Wetland	Isolated Herbaceous Wetland
143-34-5	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-34-6	Within buffer	No	Isolated Wetland	Isolated Herbaceous Wetland
143-34-7	Road/collector	No	NA	Cropland/Farmed/Effectively Drained
143-34-8	Collector	No	NA	Cropland/Farmed/Effectively Drained

Table 4
Ashtabula Wind Farm
Jurisdictional Area Impact Summary

Location ID	Habitat Type	Rapanos Determination	Delineated Area or Width	Estimated Permanent Impacts (sq ft)	Jurisdiction	Facility Type	Easting*	Northing*	Documentation	Avoidance/Minimization
141-2-1n&s	Intermittent Stream/Farmed	RPW -Seasonal Flow	100	0	USACE/USFWS	Collector	585442.810	5212922.560	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-2	Herbaceous Wetland	Isolated Wetland	15006.2	0	USFWS	Collector	585490.20	5212749.24	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-3	Herbaceous Wetland	Isolated Wetland	17815.7	0	USFWS	Collector	585663.76	5212668.81	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-4	Herbaceous Wetland	Isolated Wetland	991.7	0	USFWS	Collector	585716.68	5212514.29	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-5	Herbaceous Wetland	Isolated Wetland	650.4	0	USFWS	Collector	585708.98	5212413.15	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-6	Herbaceous Wetland	Isolated Wetland	33437.1	0	USFWS	Collector	585928.35	5212186.21	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-7/8	Herbaceous Wetland	Isolated Wetland	8308.7	0	USFWS	Collector	585950.08	5212046.37	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-9	Herbaceous Wetland	Isolated Wetland	4204.7	0	USFWS	Collector	586049.00	5211654.92	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-10/11	Herbaceous Wetland	Isolated Wetland	19324.6	0	USFWS	Collector	586137.90	5211767.11	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-2-12	Cropland/Farmed	Isolated Farmed Wetland	765.2	0	USFWS	Collector	586162.80	5211555.83	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-3-1	Cropland/Farmed	Isolated Farmed Wetland	12518.3	0	USFWS	Collector	583866.06	5213085.79	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-3-2e&w	Intermittent Stream	RPW -Seasonal Flow	105	0	USACE	Collector	584689.500	5213091.030	Data Form I, Photographs	Collectors will be installed using HDD
141-4-4	Cropland/Farmed	Isolated Farmed Wetland	2657.8	0	USFWS	Collector	583098.02	5212253.63	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-4-5	Herbaceous Wetland	Isolated Wetland	2130.1	0	USFWS	Collector	583202.08	5212135.09	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-4-6	Herbaceous Wetland	Isolated Wetland	8433.1	0	USFWS	Collector	583046.65	5211967.81	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-4-8	Herbaceous Wetland	Isolated Wetland	6533.5	0	USFWS	Collector	583050.61	5211758.38	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-4-10	Herbaceous Wetland	Isolated Wetland	4339.6	0	USFWS	Collector	583117.78	5211508.13	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-4-11	Cropland/Farmed	Isolated Farmed Wetland	1238.5	0	USFWS	Collector	583073.28	5211510.20	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-4-12	Cropland/Farmed	Isolated Farmed Wetland	2257.1	0	USFWS	Collector	582943.03	5211510.36	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-11-1	Herbaceous Wetland	Isolated Wetland	1137.6	0	USFWS	Road/collector	586188.77	5211442.17	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-11-4	Herbaceous Wetland	Isolated Wetland	1423.9	0	USFWS	Road/collector	585650.36	5210958.95	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
141-11-5	Herbaceous Wetland	Isolated Wetland	48917.5	0	USFWS	Road/collector	585733.37	5210807.17	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-3-1	Intermittent Stream	RPW- Seasonal Flow	20	0	USACE	Buried Collector	583668.33	5221941.41	Data Form I, Photographs	Collectors will be installed using HDD

Table 4
Ashtabula Wind Farm
Jurisdictional Area Impact Summary

Location ID	Habitat Type	Rapanos Determination	Delineated Area or Width	Estimated Permanent Impacts (sq ft)	Jurisdiction	Facility Type	Easting*	Northing*	Documentation	Avoidance/Minimization
142-4-3	Herbaceous Wetland	Isolated Wetland	1323.5	0	USFWS	Collector	583606.31	5221924.11	Data Form I, Photographs	Ensure that no impacts occur during construction
142-9-2	Herbaceous Wetland	Isolated Wetland	29258	0	USFWS	Within buffer	583028.59	5220072.08	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-9-3	Cropland/Farmed	Isolated Farmed Wetland	1439.8	0	USFWS	Turbine	582978.59	5219939.01	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-9-4	Cropland/Farmed	Isolated Farmed Wetland	2707.0	0	USFWS	Turbine	583034.94	5219898.51	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-9-5	Cropland/Farmed	Isolated Farmed Wetland	692.6	0	USFWS	Turbine	583117.93	5219895.04	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-9-6	Herbaceous Wetland	Isolated Wetland	868.1	0	USFWS	Collector	582884.51	5219566.59	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-9-12	Herbaceous Wetland	Isolated Wetland	18,374	0	USFWS	Road/collector	582264.92	5219831.87	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-10-11	Intermittent Stream	RPW- Seasonal Flow	89	0	USACE	Collector/Tline	583705.70	5219882.25	Data Form I, Photographs	No transmission line structure will be placed in jurisdictional areas, Collector will be installed using HDD
142-16-4	Intermittent Stream	RPW- Seasonal Flow	267	0	USACE	Collector	583523.71	5218212.71	Data Form I, Photographs	Collectors will be installed using HDD
142-21-2	Cropland/Farmed	Isolated Farmed Wetland	1933.6	0	USFWS	Collector	583356.33	5217250.17	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-9	Cropland/Farmed Effectively drained.	Non-Wetland	NA	0	USFWS	Road/collector	582332.23	5215623.67	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-10	Cropland/Farmed	Isolated Farmed Wetland	2165.7	0	USFWS	Within buffer	582548.13	5215733.73	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-11	Herbaceous Wetland	Isolated Wetland	9784.0	0	USFWS	Within buffer	582658.20	5215661.77	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-12	Cropland/Farmed	Isolated Farmed Wetland	1964.8	0	USFWS	Within buffer	582749.97	5215743.14	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-13	Herbaceous Wetland	Isolated Wetland	1036.9	0	USFWS	Within buffer	582792.25	5215713.03	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-14	Cropland/Farmed	Isolated Farmed Wetland	306.3	0	USFWS	Within buffer	582793.66	5215672.35	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-15	Cropland/Farmed	Isolated Farmed Wetland	4279.0	0	USFWS	Within buffer	582789.43	5215805.70	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-16	Herbaceous Wetland	Isolated Wetland	1557.4	0	USFWS	Within buffer	582823.30	5215871.32	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-17	Herbaceous Wetland	Isolated Wetland	2127.8	0	USFWS	Within buffer	582986.28	5215860.73	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-18	Herbaceous Wetland	Isolated Wetland	3916.1	0	USFWS	Within buffer	583058.25	5215939.05	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-19	Herbaceous Wetland	Isolated Wetland	825.7	0	USFWS	Within buffer	583172.55	5215920.00	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-20	Cropland/Farmed	Isolated Farmed Wetland	697.9	0	USFWS	Within buffer	582804.40	5215919.05	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-28-21	Cropland/Farmed	Isolated Farmed Wetland	538.7	0	USFWS	Within buffer	582579.14	5215677.00	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required

Table 4
Ashtabula Wind Farm
Jurisdictional Area Impact Summary

Location ID	Habitat Type	Rapanos Determination	Delineated Area or Width	Estimated Permanent Impacts (sq ft)	Jurisdiction	Facility Type	Easting*	Northing*	Documentation	Avoidance/Minimization
142-28-22	Cropland/Farmed	Isolated Farmed Wetland	519.4	0	USFWS	Within buffer	582579.14	5215677.00	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-33-1	Herbaceous Wetland	Isolated Wetland	5417.4	0	USFWS	Outside Buffer	583571.54	5214655.29	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-33-5	Herbaceous Wetland	Isolated Wetland	13256.7	0	USFWS	Within buffer	583171.49	5213759.94	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-33-14	Cropland/Farmed	Isolated Farmed Wetland	1521.3	0	USFWS	Collector	583728.61	5214557.84	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
142-33-18	Herbaceous Wetland	Isolated Wetland	1545.1	0	USFWS	Collector	583274.19	5214670.72	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-13-1	Lake	RPW-Perennial Flow	990	0	USACE	Tline	586854.52	5229252.55	Data Form I, Photographs	No transmission line structure will be placed in jurisdictional areas
143-14-1e	Herbaceous Wetland	Isolated Wetland	160	0	USACE/USFWS	Collector	585352.28	5229233.21	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-14-1w	Herbaceous Wetland	Isolated Wetland	160	0	USACE/USFWS	Collector	585352.28	5229233.21	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-15-1	Herbaceous Wetland	Isolated Wetland	4684.1	0	USFWS	Tline	583538.65	5227634.83	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-15-2	Herbaceous Wetland	Isolated Wetland	7924.7	0	USFWS	Tline	583529.79	5228032.33	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-15-3	Herbaceous Wetland	Isolated Wetland	2744.4	0	USFWS	Tline	584234.99	5227656.38	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-15-4	Herbaceous Wetland	Isolated Wetland	505.5	0	USFWS	Tline	583550.58	5228211.85	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-15-5	Cropland/Farmed	Isolated Farmed Wetland	7101.5	0	USFWS	Tline	584488.39	5229106.65	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-15-5b	Cropland/Farmed	Isolated Farmed Wetland	1525.3	0	USFWS	Tline	584404.33	5229210.22	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-15-6	Cropland/Farmed	Isolated Farmed Wetland	1807.1	0	USFWS	Tline	584670.81	5229167.03	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required, no transmission line structure will be placed in wetland easement area
143-20-1	Herbaceous Wetland	Isolated Wetland	8408.0	0	USFWS	Within buffer	580344.68	5226242.91	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-20-2	Cropland/Farmed	Isolated Farmed Wetland	908.3	0	USFWS	Within buffer	580361.62	5226606.51	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required

Table 4
Ashtabula Wind Farm
Jurisdictional Area Impact Summary

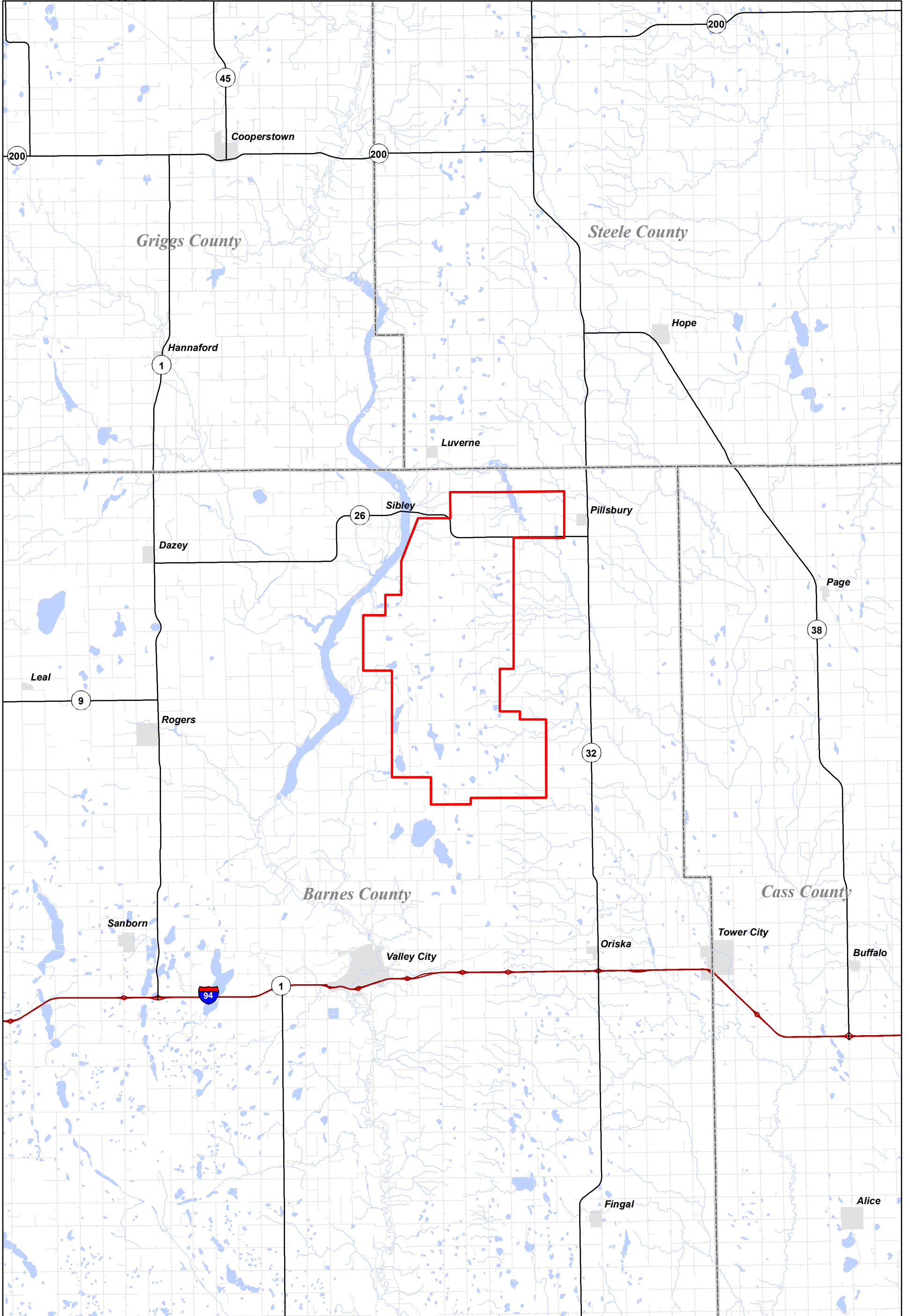
Location ID	Habitat Type	Rapanos Determination	Delineated Area or Width	Estimated Permanent Impacts (sq ft)	Jurisdiction	Facility Type	Easting*	Northing*	Documentation	Avoidance/Minimization
143-20-3	Cropland/Farmed	Isolated Farmed Wetland	767.1	0	USFWS	Within buffer	580746.85	5226940.94	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-20-4	Cropland/Farmed	Isolated Farmed Wetland	2867.3	0	USFWS	Within buffer	580840.22	5227003.75	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-20-5	Cropland/Farmed	Isolated Farmed Wetland	3124.6	0	USFWS	Within buffer	581246.19	5227161.15	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-20-6	Cropland/Farmed	Isolated Farmed Wetland	991.3	0	USFWS	Within buffer	581557.54	5227402.38	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-20-7	Herbaceous Wetland	Isolated Wetland	1770.7	0	USFWS	Within buffer	581735.34	5227366.39	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-21-1	Herbaceous Wetland	Isolated Wetland	15,200	0	USFWS	Collector	583517.57	5226282.66	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-22-1	Forested Wetland	Isolated Wetland	1029.4	0	USFWS	Outside Buffer	584372.17	5227600.30	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-22-8	Cropland/Farmed	Isolated Farmed Wetland	1664.7	0	USFWS	Within buffer	583647.07	5226580.94	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-22-9	Cropland/Farmed	Isolated Farmed Wetland	1960.0	0	USFWS	Within buffer	583648.81	5226479.51	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-22-10	Herbaceous Wetland	Isolated Wetland	8004.8	0	USFWS	Collector	583633.99	5226350.39	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-1	Herbaceous Wetland	Isolated Wetland	991.3	0	USFWS	Collector	583680.56	5224525.82	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-1b	Herbaceous Wetland	Isolated Wetland	17144.4	0	USFWS	Collector	583720.75	5224549.80	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-2	Cropland/Farmed	Isolated Farmed Wetland	699.4	0	USFWS	Collector	583609.04	5224784.06	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-3	Cropland/Farmed	Isolated Farmed Wetland	1047.1	0	USFWS	Collector	583610.80	5224869.17	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-4	Cropland/Farmed	Isolated Farmed Wetland	542.9	0	USFWS	Collector	583659.39	5224932.22	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-5	Cropland/Farmed	Isolated Farmed Wetland	626.0	0	USFWS	Collector	583633.99	5225186.22	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-6	Cropland/Farmed	Isolated Farmed Wetland	10526.6	0	USFWS	Collector	583748.29	5225173.52	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-7	Cropland/Farmed	Isolated Farmed Wetland	1449.2	0	USFWS	Collector	583900.69	5225186.22	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-7b	Cropland/Farmed	Isolated Farmed Wetland	1345.1	0	USFWS	Collector	583869.89	5225257.77	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-8	Cropland/Farmed	Isolated Farmed Wetland	1193.7	0	USFWS	Collector	584019.85	5225109.30	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-9/10/11	Cropland/Farmed	Isolated Farmed Wetland	73484.3	0	USFWS	Collector	584141.99	5225271.20	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-12	Cropland/Farmed	Isolated Wetland	1770.7	0	USFWS	Collector	584332.49	5225154.47	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-27-14	Cropland/Farmed	Isolated Wetland	484.1	0	USFWS	Collector	583614.30	5224504.99	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-28-1	Herbaceous Wetland	Isolated Wetland	3241.7	0	USFWS	Collector	583523.92	5225931.29	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required

Table 4
Ashtabula Wind Farm
Jurisdictional Area Impact Summary

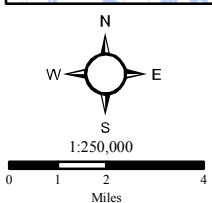
Location ID	Habitat Type	Rapanos Determination	Delineated Area or Width	Estimated Permanent Impacts (sq ft)	Jurisdiction	Facility Type	Easting*	Northing*	Documentation	Avoidance/Minimization
143-28-2	Herbaceous Wetland	Isolated Wetland	15,908	0	USFWS	Collector	583542.97	5225325.92	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-28-3	Cropland/Farmed	Isolated Farmed Wetland	154.1	0	USFWS	Within buffer	583545.09	5224712.09	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-33-2	Herbaceous Wetland	Isolated Wetland	11,203	0	USFWS	Within Buffer	583557.79	5223867.54	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-33-9	Herbaceous Wetland	Isolated Wetland	23,617	0	USFWS	Within Buffer	582795.79	5223571.20	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-33-10	Herbaceous Wetland	Isolated Wetland	5923.7	0	USFWS	Within buffer	582907.97	5223812.50	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-33-11	Herbaceous Wetland	Isolated Wetland	635.7	0	USFWS	Within buffer	582996.87	5223939.50	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-33-12	Herbaceous Wetland	Isolated Wetland	2458.8	0	USFWS	Within buffer	583130.22	5223854.84	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required
143-33-13	Cropland/Farmed	Isolated Farmed Wetland	928.7	0	USFWS	Collector	583223.36	5223979.72	Data Form I, Photographs	USFWS Wetland Easement, Complete avoidance required

UTM Coordinates (Zone 14N, NAD 83)

Figures

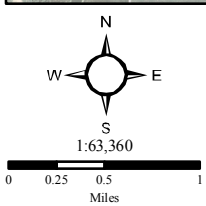
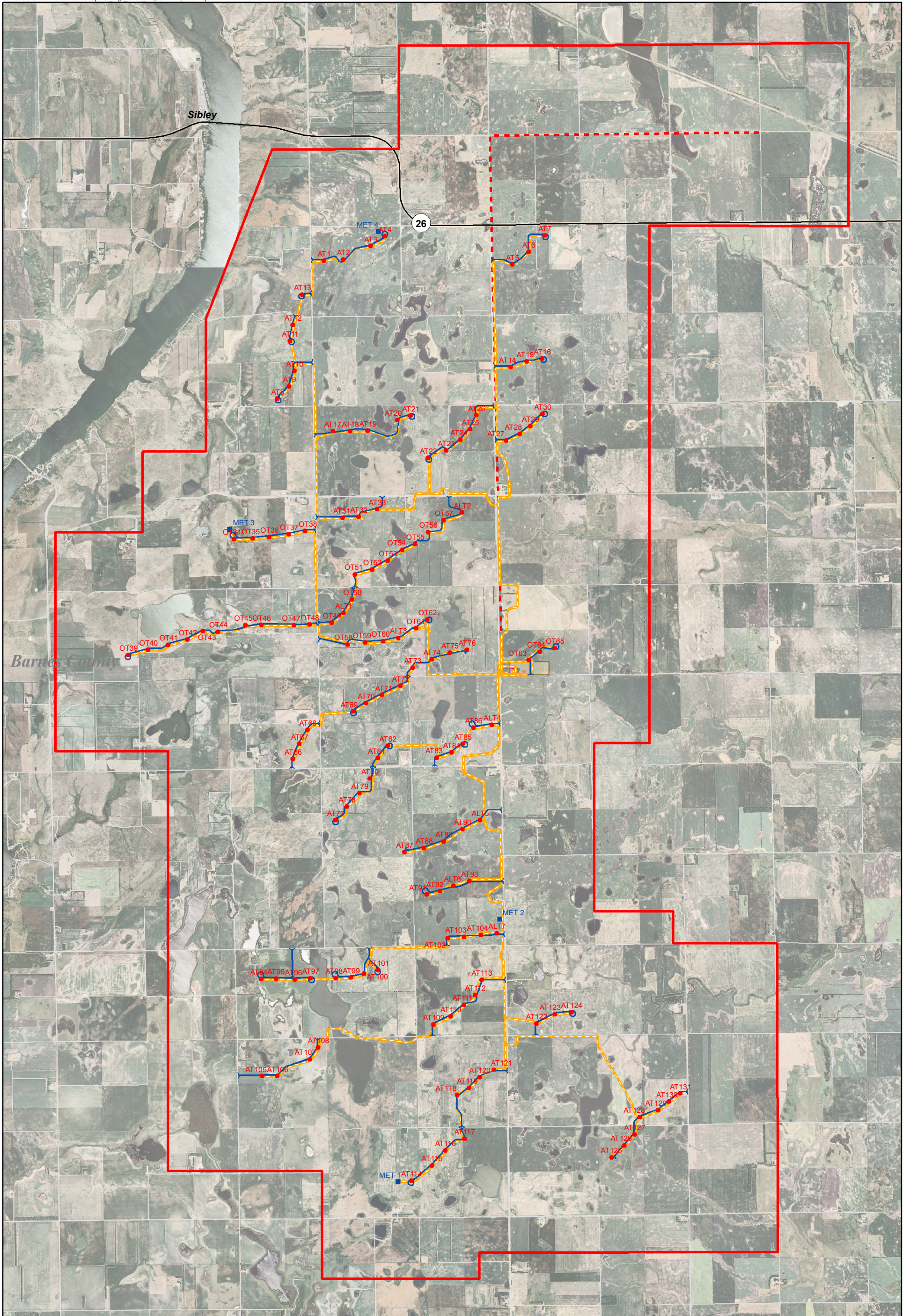


June 30 2008



- Project Boundary
- County Boundary
- Interstate
- Major Road
- Local Road
- River / Stream
- Lake / Pond
- Municipality

Project Vicinity Map
Ashtabula Wind Energy Center
Barnes County, North Dakota

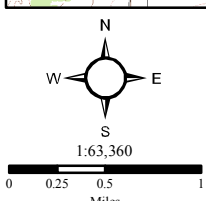
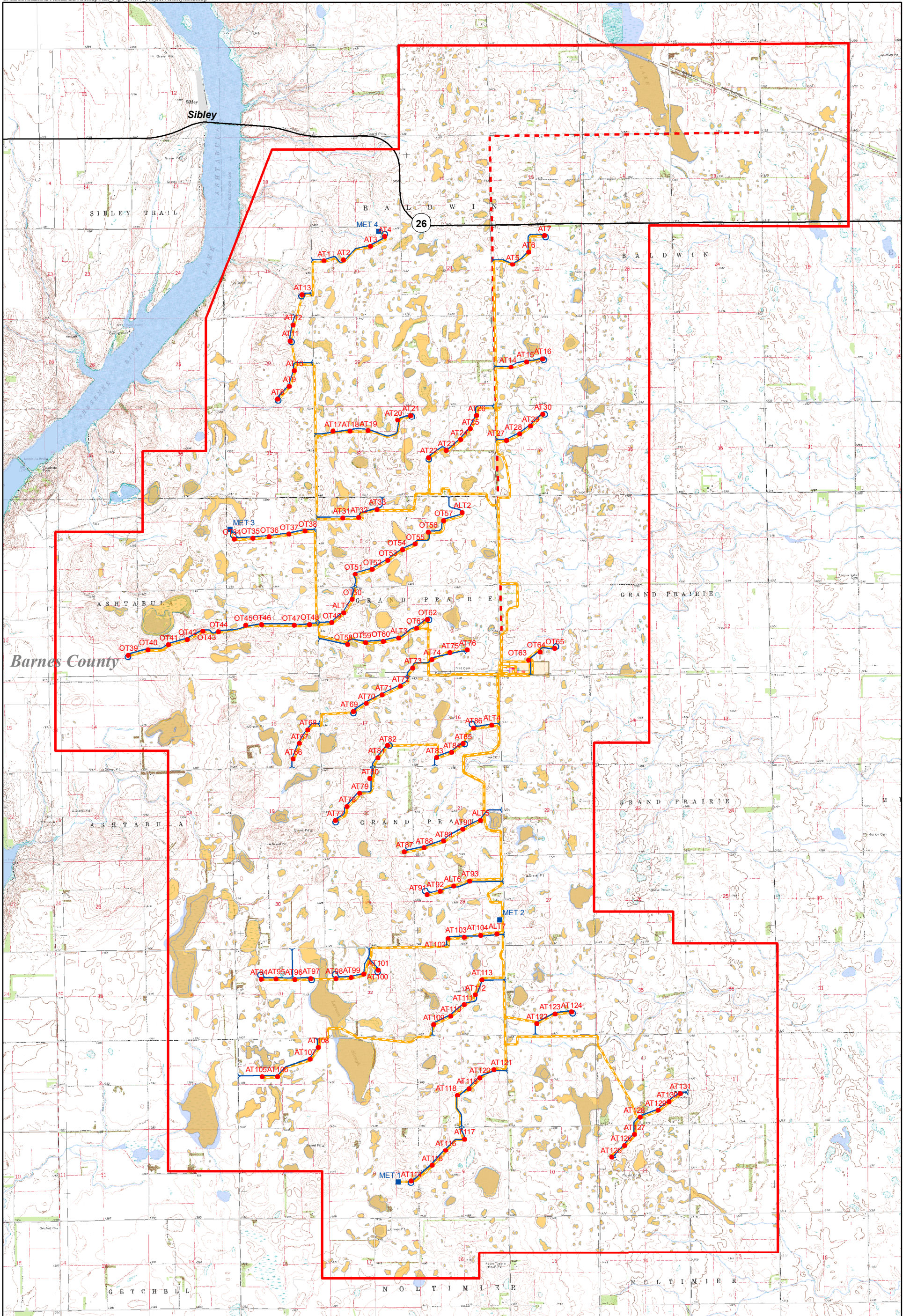


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|------------------|--------------|-----------------------------|--------------|
| Project Boundary | Interstate | Turbine Location (06-09-08) | Laydown Area |
| County Boundary | Major Road | Collector (06-09-08) | O&M Building |
| Municipality | Local Road | Access Road (06-09-08) | Substation |
| | Municipality | MET Tower | |
| | | Transmission Line | |

June 30 2008

Project Area Map
Ashtabula Wind Energy Center
Barnes County, North Dakota

Figure 2

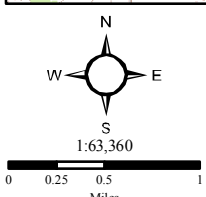
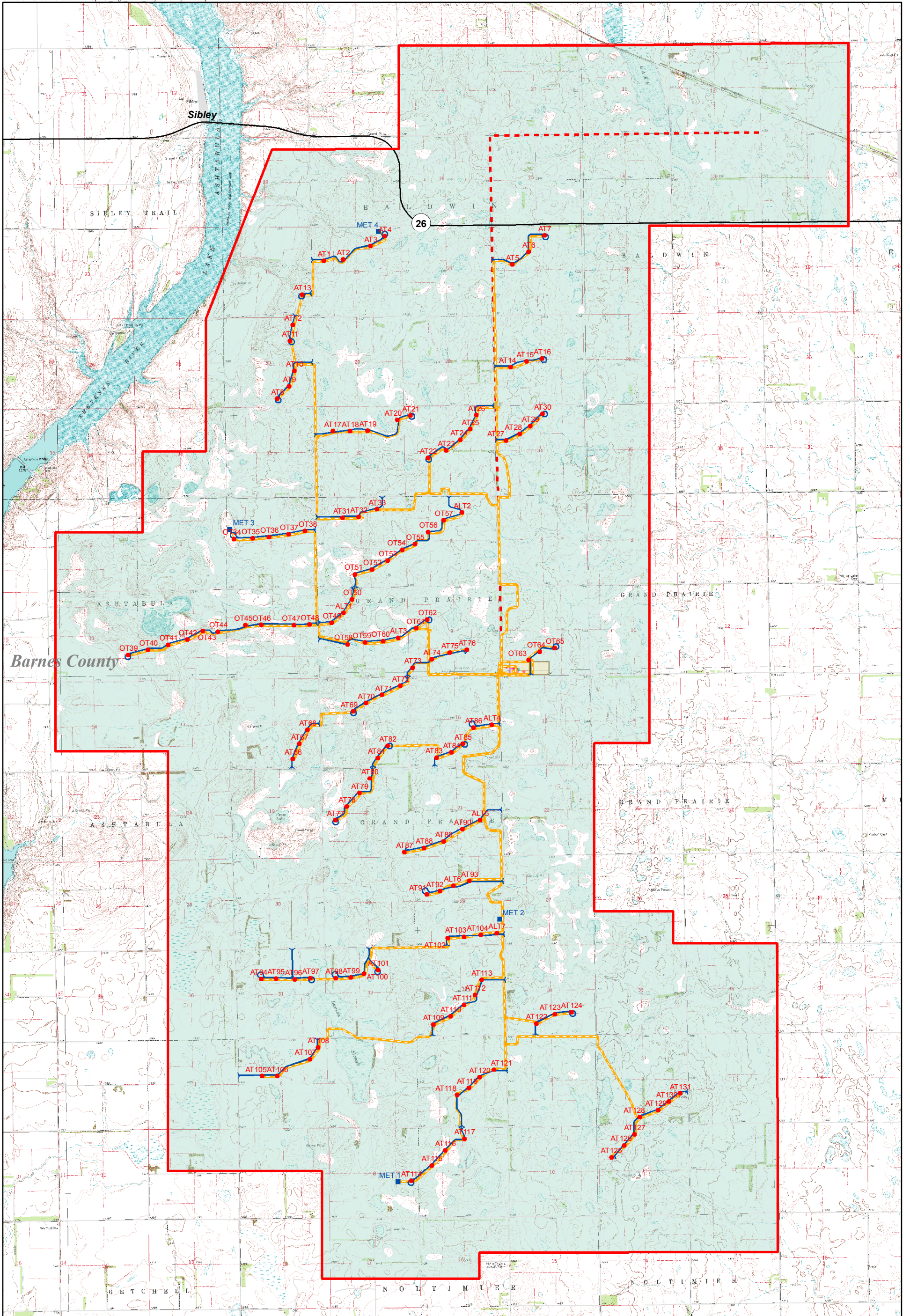


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|------------------|----------------|-----------------------------|--------------|
| Project Boundary | River / Stream | Turbine Location (06-09-08) | Laydown Area |
| County Boundary | Lake / Pond | Collector (06-09-08) | O&M Building |
| Interstate | Municipality | Access Road (06-09-08) | Substation |
| Major Road | NW1 Area | MET Tower | |
| Local Road | | Transmission Line | |

National Wetlands Inventory Map
Ashtabula Wind Energy Center
Barnes County, North Dakota

June 30 2008

Figure 3



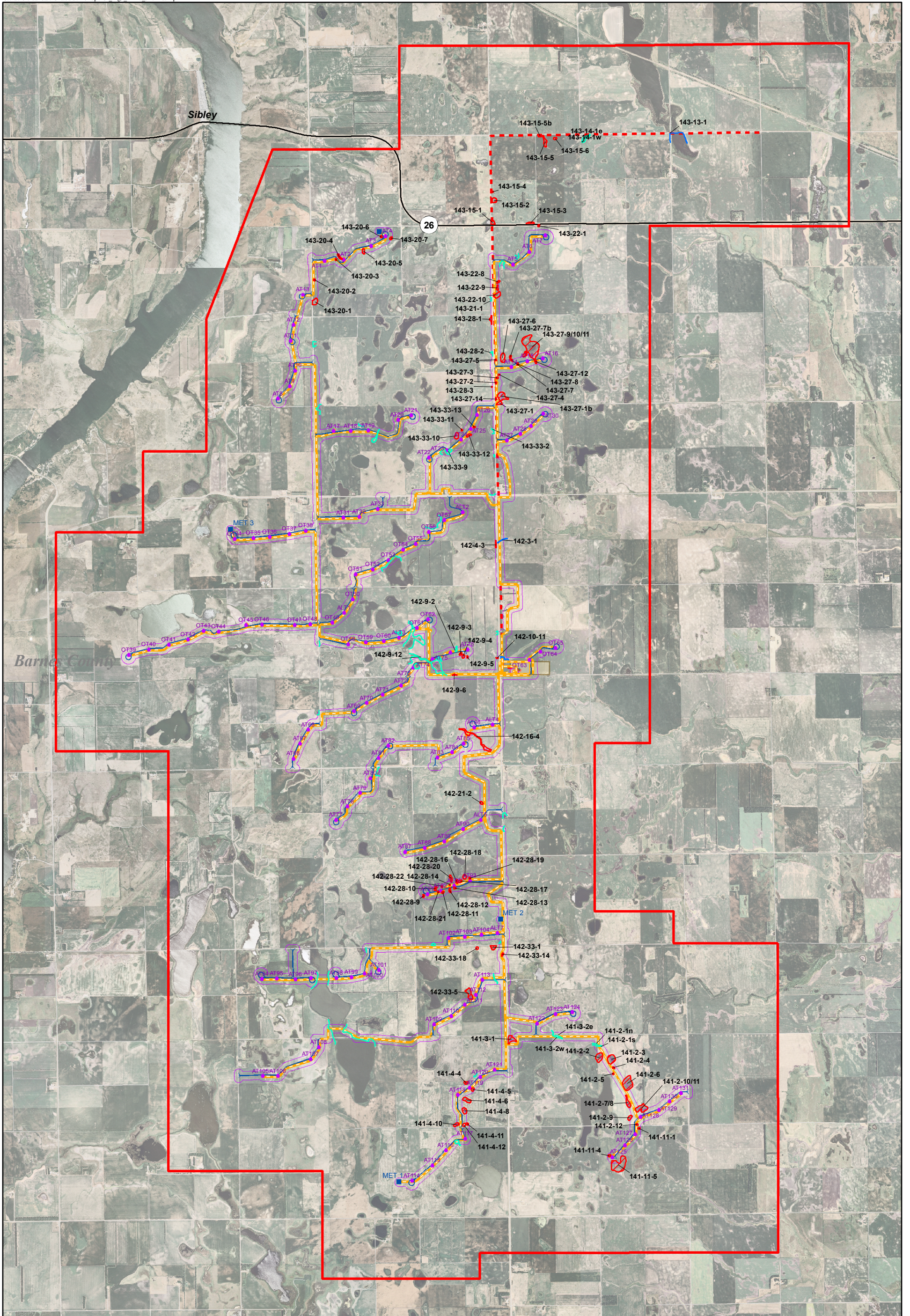
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|------------------|--------------|-----------------------------|--------------|
| Project Boundary | Hydric Soil | Turbine Location (06-09-08) | Laydown Area |
| County Boundary | Municipality | Collector (06-09-08) | O&M Building |
| Interstate | | Access Road (06-09-08) | Substation |
| Major Road | | MET Tower | |
| Local Road | | Transmission Line | |



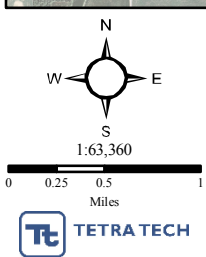
June 30 2008

Hydric Soils Map
Ashtabula Wind Energy Center
Barnes County, North Dakota

Figure 4



September 3, 2008



- | | | | |
|------------------|-----------------|-----------------------------|--------------|
| Project Boundary | Municipality | Turbine Location (06-09-08) | Laydown Area |
| County Boundary | Wetland3a | Collector (06-09-08) | O&M Building |
| Interstate | RPW3 | Access Road (06-09-08) | Substation |
| Major Road | Wetland2 | MET Tower | |
| Local Road | 250 foot buffer | Transmission Line | |

Jurisdictional Delineations
Ashtabula Wind Energy Center
Barnes County, North Dakota

Figure 5

Explanation of Legend Symbols

Line Generic – Used to denote a feature of interest during the site but for which a jurisdictional opinion could not be rendered based on field conditions. These areas may be later determined to be jurisdictional following review of USGS topographic maps, NWI data and/or aerial photographs.

RPW2 – Relatively permanent water as defined by the USACE Jurisdictional Guide Book.

Wetland2 – A line representing a wetland boundary which due to length or size of the wetland could not be collected as a closed wetland polygon (Wetland3).

Wetland3 – Wetland which the boundaries were such that GPS data could be collected using a closed polygon.

Appendices

Appendix A

Appendix B
