

March 18, 2019

Ms. Tanowa Troupe, Acting Secretary
Ohio Power Siting Board
Docketing Division
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3797

Re: Case No. 18-1607-EL-BGN - In the Matter of the Application of Firelands Wind, LLC
for a Certificate of Environmental Compatibility and Public Need to Construct a Wind-
Powered Electric Generation Facility in Huron and Erie Counties, Ohio.

Supplement to Application – Visual Impact Assessment

Dear Ms. Troupe:

On January 31, 2019, Firelands Wind, LLC (“Applicant”) filed an application with the Ohio Power Siting Board (“Board”) for a Certificate of Environmental Compatibility and Public Need to Construct a Wind-Powered Electric Generation Facility in Huron and Erie Counties, Ohio. On page 210 of the Application narrative, the Applicant states that it will be providing the Visual Impact Assessment (“VIA”) as a supplement to the Application. At this time, the Applicant is filing the VIA.

The original of this Supplement to the Application was filed electronically. In addition, 20 complete paper copies of the Supplement have been provided to the Docketing Division.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

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Enclosure

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CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 18th day of March, 2019.

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Visual Impact Assessment

Emerson Creek Wind Farm
Erie and Huron Counties, Ohio

Prepared for:



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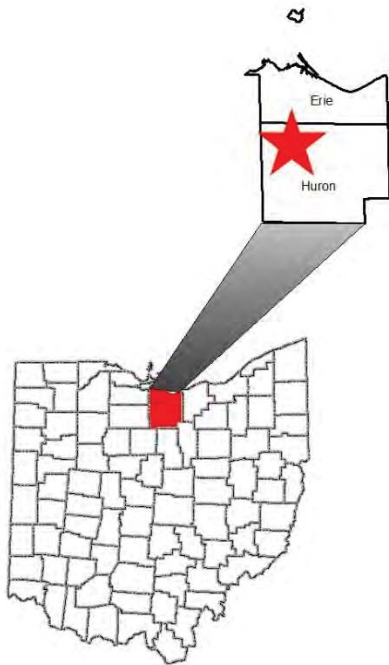
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1.0 Introduction

On behalf of Firelands Wind, LLC, Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) prepared this Visual Impact Assessment (VIA) for the proposed Emerson Creek Wind Farm (Project). The proposed Project is an up to 297.66 megawatt (MW) wind energy generating facility located in Erie and Huron Counties, Ohio (Figure 1). The purpose of this VIA is to:

- Describe the appearance of the visible components of the proposed Project.
- Describe the visual character of the Project study area.
- Inventory and evaluate existing visual resources and viewer groups.
- Evaluate potential Project visibility within the study area.
- Identify key views for visual assessment.
- Assess the visual impacts associated with the proposed action.



Inset 1. Regional Project Location (Erie, Huron and Counties)

This VIA was prepared by, and with oversight from, professionals experienced in developing visual impact assessments. It is consistent with the policies, procedures, and guidelines contained in established visual impact assessment methodologies and satisfies the requirements of Ohio Administrative Code Chapter 4906-04-08(D)(4) for the Ohio Power Siting Board.

2.0 *Project Description*

A description of the proposed Project area and the visible components of Emerson Creek Wind Farm is presented below.

2.1 Project Area

The Project area is located on approximately 32,000 acres of leased private land in Groton and Oxford Townships (Erie County), Lyme, Ridgefield, Sherman, Norwich, and Richmond Townships (Huron County). As measured from the nearest proposed turbine to the nearest municipal boundary, the Project is directly adjacent to the City of Bellevue, 1.95 miles Northwest of the City of Willard, and 3.6 miles west of the City of Norwalk. The Project area is bounded on the north by Interstate Route 80/90, on the east by State Route 99, on the south by U.S. Route 224 (Benjamin Franklin Highway), and on the west by State Route 269 (Huron Seneca County Line Road).

2.2 Proposed Project

The proposed Project evaluated in this VIA is a wind-powered electric generating facility, consisting of up to 87 wind turbine generators¹, each with a nameplate capacity rating of between 4.2 and 4.5 MW (depending on the final turbine model selected), and a total generating capacity not to exceed 297.66 MW. This assessment provides a conservative analysis because it assumes that all 87 potential locations will have a turbine installed. Along with the turbines, the Project includes associated support facilities including access roads, buried electrical collection cables, up to three permanent meteorological (met) towers, a collection substation, one temporary laydown yard, and an operations and maintenance (O&M) building. Project configuration/layout is illustrated in Figure 1. The dimensions and visual appearance of the major components of the proposed Project are described below:

2.2.1 Wind Turbines

The turbines are the largest and most visible components of the proposed Project, and therefore are the focus of this VIA. Each wind turbine consists of three major components: the tower, the nacelle, and the rotor. The nacelle sits atop the tower, and the rotor hub is mounted to the front of the nacelle. The turbine model being used for evaluation in this study, and represented in the visual simulations, is the Nordex 149 with two different hub heights. The taller of the two configurations has a maximum blade tip height of 655 feet (199.5 m) and will be placed at all but three of the proposed

¹ Although this Application evaluates 87 proposed turbine sites, the total generating capacity of the Facility will not exceed 297.66 MW. Therefore, it is expected that only 66-71 turbines will actually be constructed, depending on the model of turbine selected. However, to allow for flexibility on final site selection (e.g., selecting one turbine site over another based on additional site-specific wind data and/or if a cultural resource is discovered upon excavation and/or if a geotechnical issue is discovered during borings, etc.), the Applicant seeks approval for 87 turbine sites.

turbine locations. The shorter configuration has a maximum blade tip height of 602 feet (183.5 m), and will be located at the T67, T70 and T82 locations. Descriptions of the turbine components are provided below, and a computer model illustrating the appearance of the turbines used in this assessment is shown in Figure 2.

Tower: The towers used for commercial wind turbines are conical steel structures manufactured in multiple sections and mounted on a concrete foundation that is essentially flush with the ground surface. For the purposes of this study, two tower heights are being used. The taller has a height of 410 feet (125 m), while the shorter tower has a height of 358 feet (109 m). The towers are assumed to have a base diameter of 18.0 feet and a top diameter of 10.0 feet. The towers will be painted white or off-white in accordance with Federal Aviation Administration (FAA) regulations designed to make the structures more visible to aircraft when viewed from above. This also has the benefit of reducing visibility from ground-level vantage points, by making them less visible against the pale background of the sky.

Nacelle: The main mechanical components of the wind turbine are housed in the nacelle. These components include the drive train, gearbox, and generator. The nacelle is approximately 36.1 feet long, 13.1 feet tall (including exterior cooling equipment), and 13.3 feet wide. The nacelle is equipped with an external anemometer and a wind vane that signals wind speed and direction information to an electronic controller. Attached to the top of the nacelles, per specifications of the FAA, will be two aviation warning lights. These lights are anticipated to be flashing, medium-intensity red lights (L-864) that operate only at night. For the purposes of this study it is assumed that the nacelles will be white in color, and include no obvious lettering, logo, or other exterior marking.

Rotor: A rotor assembly is mounted to the nacelle to operate upwind of the tower. Each rotor consists of three composite blades that will be up to 246 feet (75 meters) in length, with a maximum rotor diameter of up to 489 feet (149 meters). The rotor attaches to the drive train at the front of the nacelle. Hydraulic motors within the rotor hub feather each blade according to wind conditions, which enables the turbine to operate efficiently at varying wind speeds. Depending on the model selected, the wind turbines will begin generating energy at wind speeds as low as 3 meters per second (m/s) [6.7 miles per hour (mph)] and cut out at maximum wind speeds of 22.5 m/s (50.3 mph). Rotor speed will be in the range of 6.9 to 13.9 revolutions per minute.

2.2.2 Electrical System

The proposed Project will have an electrical system consisting of two parts: (1) a system of 34.5 kV shielded and insulated cables that will collect power from each wind turbine (collection system), and (2) a collection substation

(Project substation) that will step up voltage prior to connection with the electric power grid. Each of these electrical system components is described below.

Collection System: A transformer at each turbine will raise the voltage of electricity produced by the turbine generator up to the 34.5 kV voltage level of the collection system. From the transformer, cables will join the collection circuit and turbine communication cables to form the electrical collection system. Collection cables will be buried to a minimum depth of 36 inches below the ground surface. The location of the proposed collection system is depicted on Figure 1. This 34.5 kV collection system will connect the individual turbines to the collection substation. The total length of the buried 34.5 kV collection lines carrying electricity to the Project substation will be approximately 120 miles. A cleared corridor up to 25 feet wide² is typically required for installation of the buried cables. Restoration of these disturbed areas will be completed through seeding and mulching of all exposed soils, or by a return to crop production in active agricultural fields. While the cables themselves will not be visible, any clearing associated with the installation of the buried collection lines is shown in the simulations prepared for this VIA. Appendix E, illustrates typical underground collection system trenching and cabling during construction.

Collection Substation: The collection substation will be located east of County Road 40 (Sand Hill Road), north of the intersection with County Road 41 (Yingling Road), in Lyme Township Huron County. The substation will step up voltage from 34.5 kV to 345 kV, so it can be delivered to the existing power grid. The substation will include dead-end structures, circuit breakers, air break switches, metering units, relaying, communication equipment, and a control house. The collection substation will be approximately 467 by 467 feet in size and enclosed by a chain link fence. Lightning masts will be the tallest component of the substation, at approximately 60 feet tall. The station will be accessed via a 0.1-mile, gravel-surfaced access road from County Road 40. At the time of VIA preparation, details regarding the final design of the substation were not available. Therefore, this component of the Project was not evaluated in the VIA.

2.2.3 Access Roads

The Project will require the construction of new or improved private roads to provide access to the proposed turbines. Wherever feasible, existing farm drives will be upgraded for use as Project access roads to minimize impacts. The proposed location of Project access roads is shown on Figure 1. The total length of access roads required to service

² Some sections of buried electrical cable will be wider than 20 feet to accommodate multiple circuits as the collection line corridor approaches the Project substation. However, in many other locations the disturbance will be substantially less than 20 feet, resulting in an overall average disturbance width of 20 feet across the Project area.

all proposed wind turbine locations is approximately 36.3 miles. During construction, access road installation and use could result in temporary soil disturbance to a maximum width of 36 feet. Once construction is complete, temporarily disturbed areas will be restored to their approximate pre-construction contours and revegetated. For the purposes of this study and the accompanying visual simulations, the finished roads are assumed to be gravel-surfaced with a finished width of 16 feet. Although not specifically evaluated in the VIA, any access roads or vegetation clearing necessary to accommodate these roads, are shown in the simulations, if visible.

2.2.4 Meteorological Towers

Up to three permanent met towers will be installed to collect wind data and support performance testing of the Project. These towers will be galvanized steel structures equipped with wind velocity and directional measuring instruments at three different elevations, and a red aviation warning light mounted at the top. Each tower will be self-supporting (i.e., they will be un-guyed, free standing structures) and will be constructed to the hub height of the turbine model selected for the Facility. All three potential locations for the met towers are located on agricultural land (see Figure 1), and the met towers are shown in any of the simulations where they would be visible. Alternatively, the Applicant may elect to erect two temporary meteorological towers, which would be removed after 1-2 years, and only one permanent meteorological tower. If temporary meteorological towers are installed, these structures would also be hub height, but are likely to be guyed.

2.2.5 Operations and Maintenance Facility

An O&M building and associated storage yard will be required to house operations personnel, equipment, and materials, and to provide operations staff parking. It is anticipated that an existing structure in the vicinity of the Facility will be purchased or leased and refurbished to support O&M activities. If a new building is needed, it is not expected to exceed 6,000 square feet or permanently disturb an area greater than 3 acres. Because the O&M building is anticipated to be similar in size and design to existing agricultural/utility buildings in the area, it is not addressed in this study, nor represented in the visual simulations.

2.2.6 Laydown Yards

Facility construction will require the development of a temporary laydown yard for construction staging, to be located on leased private lands. The laydown yard will accommodate material and equipment storage, parking for construction workers, and construction management trailers. The area of the laydown yard will not exceed approximately 13 acres. No lighting of the laydown areas is currently proposed, (but could be added if necessary, to resolve safety or vandalism

problems). Because the laydown yard is temporary and will be removed/restored at the end of construction, it is not represented in the visual simulations or evaluated as part of this study.

3.0 Visual Study Area

Chapter 4906-17 of the Ohio Administrative Code (OAC), Application Filing Requirements for Wind-Powered Electrical Generation Facilities, section (D)(1), indicates that a 10-mile radius is the appropriate study area for the identification of scenic and historic resources in the vicinity of a proposed wind project (OPSB, 2009). The 10-mile radius visual study area (study area) for the Emerson Creek Wind Farm encompasses approximately 946 square miles and includes portions of Crawford, Erie, Huron, Richland, Sandusky, and Seneca Counties. Municipalities that occur within 10 miles of the proposed Facility include six cities, 13 villages and 42 townships. The location and extent of the visual study area is illustrated in Figure 3.

3.1 Physiographic/Visual Setting

3.1.1 Landform and Vegetation

The visual study area occurs within the Eastern Lake and Till Plains Sections of the Central Lowland Physiographic Province in Ohio, with roughly half of the visual study area occurring in each (Fenneman and Johnson, 1946). The northern half of the visual study area is dominated by the Eastern Lake Section, which is characterized by very low relief and nearly flat topography over large areas (Ohio History Central, 2018). This region contained the former Black Swamp, a regional wetland extending southwest from present day western Lake Erie through northwest Ohio into northeastern Indiana. Within this region, surface elevations range from 570 to 800 feet above mean sea level (amsl) with very low physiographic relief (generally less than 5 feet) that is slightly dissected by streams. The Till Plains Section is a fertile region located south of the Lake Plains that is not as flat. It is characterized by gently rolling hills, most of which are well-defined recessional moraines, that can be as large as 100 feet high and 6 miles wide. Surface elevations in the Till Plains can range from 700 to 1,150 feet amsl with moderate relief (Ohio Division of Geological Survey, 1998).

Vegetation in the study area is dominated by active agricultural land (crop fields and pasture), with areas of concentrated settlement (cities and villages) and some tracts of deciduous forest (woodlots). Many of the fields and roadsides are bordered by ditches and strips of unmowed herbaceous vegetation. Forested areas occur primarily as isolated woodlots and hedgerows between crop fields and along some roads. The woodlots are comprised primarily of native deciduous trees, including maples (*Acer* spp.), oaks (*Quercus* spp.), American elm (*Ulmus americana*), American beech (*Fagus grandifolia*), and shagbark hickory (*Carya ovata*).

3.1.2 Land Use

Land use within the visual study area is largely dominated by agricultural land, along with rural and suburban residential development. Agricultural areas are typically characterized by large open fields, with soybeans and corn as the dominant crop types. Farmsteads typically include a house, barns, machine sheds, silos, and/or grain bins in well-defined clusters amongst the open fields. Rural residential development occurs sporadically throughout the study area, while higher density residential and commercial development is concentrated in the Cities of Norwalk, Willard, Sandusky, Bellevue, and Clyde. The organizational structure of the cities and villages varies but is generally characterized by a central business district surrounded by residential neighborhoods along a city street grid. Toward the outskirts, some commercial development may be present, before transitioning to adjacent agricultural and rural residential use. Commercial/industrial uses within the study area occur primarily within cities and villages, and include agricultural services, manufacturers, retail stores, grocery/convenience stores, and restaurants.

3.1.3 Water Features

Water features within the study area include the Huron River (including the East and West Branches), Slate Run, Mills Creek, Honey Creek, Frink Run, Lake Erie, and Sandusky Bay, along with various reservoirs, small ponds, and tributary streams. The West Branch of the Huron River is a dominant feature within the study area and is characterized by a meandering channel flowing through a wooded corridor. The river receives moderate fishing use and is seasonally canoeable. The northern portion of the visual study area also contains Lake Erie and Sandusky Bay, two significant water bodies in northern Ohio. Both offer recreational activities such as boating, swimming, bird watching, water sports, and hunting. Reservoirs also represent substantial water bodies within the study area and may receive some recreational use, along their shoreline. The majority of the water features within the visual study area are small ponds and streams that receive limited use by the general public and are not major visual components of the landscape.

3.2 Distance Zones

Three distinct distance zones are typically defined in visual studies. Consistent with established protocols (e.g. USDOT FHWA, 1981), EDR defines these zones as follows:

- *Foreground:* 0 to approximately 0.5 mile. At these distances, a viewer is able to perceive details of an object with clarity. Surface textures, small features, and the full intensity and value of color can be seen in foreground objects.

- *Middle ground:* approximately 0.5 to 4.0 miles. The middle ground is usually the predominant distance at which landscapes are seen. At these distances a viewer can perceive individual structures and trees but not in great detail. This is the zone where the parts of the landscape start to join together; individual hills become a range, individual trees merge into a forest, and buildings appear as simple geometric forms. Colors will be clearly distinguishable but will have a bluish cast and a softer tone than those in the foreground. Contrast in color and texture among landscape elements will be reduced.
- *Background:* Over 4.0 miles. The background defines the broader regional landscape within which a view occurs. Within this distance zone, the landscape has been simplified; only broad landforms are discernable, and atmospheric conditions often render the landscape an overall bluish color. Texture has generally disappeared, and color has flattened, but large patterns of vegetation are discernable. Silhouettes of one land mass set against another and against the skyline or horizon are the dominant visual characteristics in the background. The background contributes to scenic quality by providing a softened backdrop for foreground and middle ground features, an attractive vista, or a distant focal point.

The land area of each LSZ within the study area, broken down by distance zone (i.e., distance from the nearest proposed turbine locations), is summarized in Table 1.

Table 1. Area of Each Distance Zone within the 10-Mile Study Area

Distance Zone	Area Per Distance Zone (square miles)
Foreground (<0.5-mile)	42.6 (4.5%)
Middle Ground (0.5 – 4.0 miles)	282.5 (29.9%)
Background (>4.0 miles)	621.0 (65.6%)
Total Study Area	946.1

3.3 Landscape Similarity Zones

The definition of landscape character types found in a study area provides a useful framework for the analysis of available visual resources and viewer circumstances. These landscape character types, referred to in this report as Landscape Similarity Zones (LSZs), are defined based on the similarity of landscape features such as landform, vegetation, water, and land use patterns, as well as characteristics that affect visual sensitivity, such as the availability of open views, scenic quality and user activity. These generally homogeneous character zones were identified in accordance with established visual assessment methodologies (Smardon et al., 1988; USDA Forest Service, 1995; USDOT Federal Highway Administration, 1981; USDOI Bureau of Land Management, 1980). The U.S. Geological

Survey (USGS) National Land Cover Dataset (NLCD) was used to help define the location of these zones, and is illustrated in Figure 4. The four identified LSZs that occur within the study area include the following:

- Rural Residential/Agricultural Zone
- City/Village Zone
- Suburban Residential Zone
- Transportation Corridor Zone

The general landscape character, use, and potential views to the proposed Project within each of the LSZs that occur within the study area are described below.

3.3.1 Zone 1: Rural Residential/Agricultural Zone



Inset 2. Representative Photograph of the Rural Residential/Agricultural Landscape Similarity Zone, prevalent throughout the visual study area. County Road 30 (Section Line Road 30 North), Township of Sherman, Huron County, Ohio (Viewpoint 54).

The majority of the visual study area is dominated by the Rural Residential/Agricultural LSZ. This LSZ is characterized by relatively level topography with a mix of working farms and associated agricultural fields, rural residences, hedgerows, and small woodlots, along a network of local and county roads. Land use is predominantly crop farming

(soybeans and corn). Due to the prevalence of agricultural fields, open views are generally available within this LSZ. These views generally feature an active agricultural field in the foreground and/or middle ground that is backed by forest vegetation in the form of hedgerows and woodlots. Manmade elements such as utility lines, working farm equipment, barns, silos, fencing, and widely scattered residences can often be seen at varying distances throughout the view. Although presenting a pleasant rural view, scenic quality in this zone is generally considered to be moderate. In some areas of this LSZ, water features are present in the form of creeks, small ponds, and reservoirs. The elevated earthen embankments of the reservoirs and the larger expanse of open water provide additional opportunities for long distance views towards the Project area. Due to the proposed location of the Project almost exclusively within this zone, and the abundance of open fields, viewers will be afforded foreground (0-0.5 mile), middle ground (0.5-3.5 miles), and background (>3.5 miles) views of the proposed Project from many areas within the Rural Residential/Agricultural LSZ.



Inset 3. Representative Photographs of the Rural Residential/Agricultural Landscape Similarity Zone.

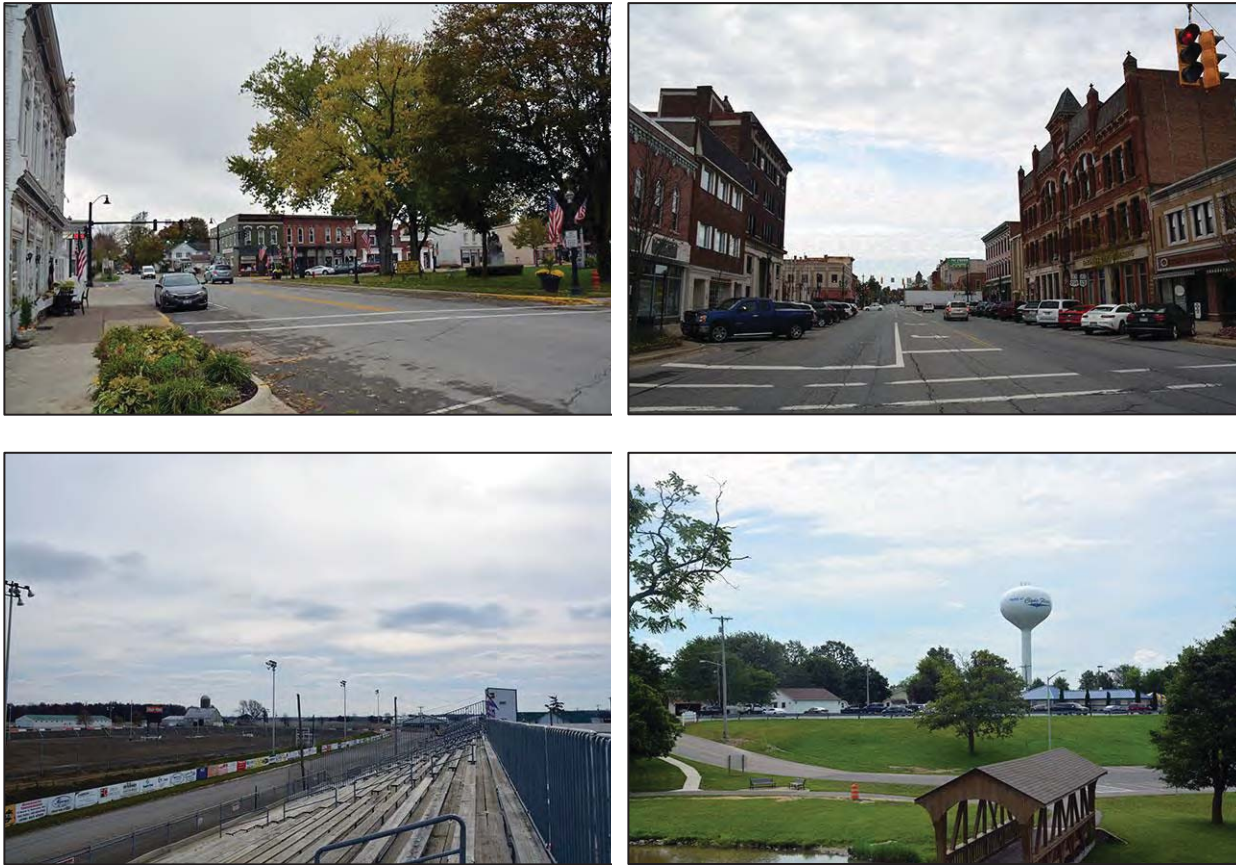
Top Left: County Road 22 (Prairie Rd), Township of Lyme, Huron County, Ohio (Viewpoint 88);

Top Right: South Township Road 106, Township of Reed, Seneca County, Ohio (Viewpoint 86);

Bottom Left: Bellevue Reservoir, Township of Lyme, Huron County, Ohio (Viewpoint 45);

Bottom Right: Edison Woods Metro Park, West Oak Hickory Trail, Township of Berlin, Erie County, Ohio (Viewpoint 10);

3.3.2 Zone 2. City/Village Zone



Inset 4. Representative Photographs of the City/Village/Hamlet Zone.

Top Left: Main Street, Village of Milan, Erie County, Ohio (Viewpoint 03);

Top Right: Intersection of State Route 61 (E. Main St.), and South Linwood Avenue, City of Norwalk, Huron County, Ohio (Viewpoint 58);

Bottom Left: Attica Fairgrounds and Attica Raceway Park, Village of Attica, Seneca County, Ohio (Viewpoint 127);

Bottom Right: Clyde Community Park, City of Clyde, Sandusky County, Ohio (Viewpoint 118);

This LSZ includes the Cities of Norwalk, Willard, Bellevue, Huron, Sandusky, and Clyde and the Villages of Chatfield, New Washington, Tiro, Monroeville, North Fairfield, Plymouth, Attica, Bloomville, Republic, Bay View, Berlin Heights, Castalia, and Milan. The majority of this zone is characterized by a mix of moderate to high-density commercial and residential development concentrated within a central business district or along a main street that transitions to surrounding residential neighborhoods. In some instances, such as in the Cities of Huron and Norwalk and the Village of Milan, natural features associated with the Huron River contribute to the visual character of the City/Village zone. In these areas, tracts of mature forest vegetation and water bodies become dominant features within the city or village limits. At the outskirts of the cities and villages there is often a fairground facility, as is the case in the Village of Attica, or a large park/natural area, such as the Memorial Reservoir area in the City of Norwalk. These areas see high concentrations of people, and, unlike the majority of this LSZ, offer open views of the surrounding landscape. The

shoreline of Lake Erie is also a prominent feature in the City/Village LSZ in waterfront cities such as Sandusky and Huron. The open water of the lake also offers open, long-distance views, although these views are in the opposite direction of the proposed Project.

Elsewhere in this zone, vegetation and landform may contribute to visual character in city and village areas, but buildings (typically 2-3 stories tall) and other man-made features dominate the landscape. These features are highly variable in their size, architectural style, and arrangement, but are typically dominated by masonry or wood-sided buildings fronting on an organized grid of local streets. Scenic quality is generally moderate and influenced largely by the arrangement and condition of built structures in the view. The majority of the visually sensitive sites identified in the study area fall within the City/Village LSZ. Activities within this zone are primarily associated with local business and residential uses, as well as local travel. Views within this zone are typically focused on the roadways and adjacent structures, and outward views toward the Project area will generally be well screened by structures and trees along roads and within yards. However, occasional open views of the Project may be available from some open road corridors oriented toward the Project area or the outskirts of this LSZ, where structures and vegetation density decrease, and screening is reduced.

3.3.3 Zone 3. Suburban Residential Zone



Inset 5. Representative Photographs of the Suburban Residential Landscape Similarity Zone.

Left: State Route 19 (S. Madison St.), south of the Village of Republic, Township of Scipio, Seneca County, Ohio (Viewpoint 134);

Right: County Road 78 (Willard West Rd.), west of the City of Willard, Huron County, Ohio (Viewpoint 79);

This zone is dominated by medium-density residential neighborhood development that typically occurs on the outskirts of the City/Village LSZ. Single family homes (typically 1-2 stories tall) and accessory structures set in yards with mowed lawns and ornamental trees and shrubs define the character of this zone. Topography is generally level throughout the majority of this LSZ but becomes slightly more rolling in communities around the Huron River valley. Residential

neighborhoods are often surrounded by stands of trees, and mature trees are relatively common within these neighborhoods. Scenic quality in this LSZ is unremarkable, although homes and yards generally appear neat and well-maintained. Open views to the surrounding landscape are generally more restricted than in open agricultural areas, but more available than in the cities and villages due to the wider spacing of the homes and yards. The effect of vegetation on potential Project visibility is highly variable in this LSZ. Areas of Suburban development adjacent to agricultural fields may offer open views in some areas, while those surrounded by trees will generally be well screened especially in riparian areas around the Huron River. Land use in this zone is almost exclusively residential.

3.3.4 Zone 4. Transportation Corridor Zone



Inset 6. Representative Photographs of the Transportation Landscape Similarity Zone.

Left: United States Route 20, Township of Ridgefield, Huron County, Ohio (Viewpoint 32);

Right: View of Interstate 80 from North County Road 268 (Vickery Rd.), Township of Townsend, Sandusky County, Ohio (Viewpoint 114);

The Transportation Corridor LSZ includes Interstate Route 80/90 and U.S. Routes 2 and 20. Views along these heavily used transportation corridors are dominated by automobiles, pavement, guard rails, and signs in the foreground. Surrounding land use is predominantly open agricultural land and forest vegetation but may include high density commercial and residential development where the corridors pass through cities and villages. Scenic quality is largely defined by the surrounding landscape but is generally compromised by the abundance of transportation infrastructure in the view. Views towards the Project will be available from a variety of distances within this zone, although intervening vegetation and buildings will provide significant screening in many areas.

3.4 Viewer/User Groups

Three categories of viewer/user groups were identified within the visual study area. These include the following:

3.4.1 Local Residents

Local residents include those who live and work within the visual study area. They generally view the landscape from their yards, homes, local roads and places of employment. Residents are concentrated in and around the Cities of Norwalk, Willard, and Bellevue and the Villages of Monroeville, Attica, Bellevue, Castalia, and Milan. However, rural residents occur throughout the visual study area. Except when involved in local travel, residents are likely to be stationary and have frequent or prolonged views of the landscape. Local residents may view the landscape from ground level or elevated viewpoints (typically upper floors/stories of homes). Residents' sensitivity to visual quality is variable, however, it is assumed that residents may be sensitive to changes in particular views that are important to them.

3.4.2 Through Travelers/Commuters

Commuters and travelers passing through the area view the landscape from motor vehicles on their way to work or other destinations. Commuters and through travelers are typically moving, have a relatively narrow field of view, and are destination oriented. Drivers on major roads in the area (e.g., Interstate Route 90/80 and U.S. Routes 250 and 20) will generally be focused on the road and traffic conditions but do have the opportunity to observe roadside scenery. Passengers in moving vehicles will have greater opportunities for prolonged off-road views than will drivers. However, through travelers and commuters are generally considered to have relatively low sensitivity to visual quality of the surrounding landscape.

3.4.3 Tourists/Recreational Users

Recreational users and tourists include local residents and out-of-town visitors involved in cultural and recreational activities at parks, recreational facilities, and historic sites, as well as in undeveloped natural settings. These viewers are concentrated in the recreational facilities/cultural sites located within and adjacent to the visual study area, including State Wildlife Areas, a scenic byway, the Huron River, local parks, historic sites, the shoreline of Lake Erie and Cedar Point rollercoaster park. Members of this group may view the landscape from area highways while on their way to these destinations, or from the sites themselves. This group includes bicyclists, hikers, hunters, fishermen and those involved in more passive recreational activities (e.g., picnicking, sightseeing, or walking). Recreational users and tourists will often have continuous views of landscape features over relatively long periods of time and will typically only view the surrounding landscape from ground-level vantage points. Their sensitivity to visual quality will vary depending on the activity in which they are engaged, but for many, scenic quality will be a less important part of their recreational experience than the height or speed of the rollercoaster.

3.5 Visually Sensitive Resources

A comprehensive inventory of visually sensitive resources (VSRs) was conducted for the 10-mile radius visual study area. This inventory revealed that there are no State Parks; National Heritage Areas; National Wildlife Refuges; National Natural Landmarks; National Parks; National Recreation Areas; National Seashores; National Forests; National or State Designated Wild, Scenic, or Recreational Rivers; or State Historic Markers within the study area (OHC, 2019a; NPS, 2019b; NPS, 2019c; USFWS, 2019; USFS, 2013; NPS, 2014). However, the Project's visual study area includes 377 sites that could be considered VSRs of local, regional or statewide significance. These include 142 individual properties and 15 districts listed on the National Register of Historic Places (NRHP); 36 properties eligible for listing on the NRHP; 11 State Wildlife Areas; one river listed on the Nationwide Rivers Inventory; one designated scenic byway; two State and Federally designated trails; four State nature preserves; nine areas of intensive land use; 19 major transportation corridors; 92 local parks; four local trails; and 41 local water resources. The aforementioned VSRs are discussed below and shown on Figure 5.

3.5.1 Historic Sites

EDR reviewed the NRHP website, the Ohio History Connection (OHC) website hosted by the Ohio Historic Preservation Office (OHPO), and the OHC shapefiles to identify significant historic buildings and/or districts located within 10 miles of the Project area (National Park Service, 2018; OHC, 2018). A total of 157 NRHP-listed sites were identified including 15 Historic Districts.

For three of the sites the setting and views are mentioned as reasons for their listing on the NRHP (Bowers, 1992; Drown and Howe, 1978; Johannesen, 1973). These three sites are Hunts Corners, Heter Farm and John Wright Mansion, each of which are described below.

- *Hunts Corners:* Hunts Corners is a historic district comprised of 14 contributing resources at the intersection of Sandhill Road and State Route 547 in Lyme Township, approximately 0.65 mile from the Project boundary. The late nineteenth century buildings serve various domestic, agricultural and religious functions, built in either wood frame or brick. Hunts Corners was founded as an agricultural crossroads settlement built by German-American settlers.
- *Heter Farm:* Heter Farm is a historic farm grouping consisting of a farm house, large barn, and surrounding smaller outbuildings in Thompson Township, located approximately 1.42 miles from the Project boundary.

The mid- to late-nineteenth century Greek Revival structures serve agricultural and domestic functions and is an excellent example of Greek Revival vernacular buildings dating from 1849-1854. Additionally, the house and barn are well-known local landmarks due to their visibility on a small rise in a relatively flat area.

- *John Wright Mansion:* The John Wright Mansion is a historic farmhouse located in Lyme Township, approximately 1.60 miles from the Project boundary. Built in 1881, the Second Empire Style-mansion represents an unusual combination of location and architectural styles, as most examples of this style are generally urban residences rather than a relatively isolated farmhouse in a rural setting. The three-story brick mansion is noted for its distinctive historic architecture, including an extremely symmetrical façade.

In addition to the NRHP-listed sites, an additional 36 sites within the visual study area have been designated as NRHP-eligible by the OHPO. These sites occur throughout the visual study area but tend to be concentrated in and around the cities and villages with a few individual properties scattered throughout.

For more information on NRHP-listed and eligible sites and their proximity to the Project, please see Appendix B.

3.5.2 State Wildlife Areas

Review of the Ohio Department of Natural Resources (ODNR) website indicated the presence of 11 State Wildlife Areas (WA) within the visual study area (ODNR, 2012). For a list of these wildlife areas and their distance from the nearest proposed turbine, see Appendix B. The State WAs located in closest proximity to the Project boundary and therefore with the most potential for views of the proposed Project are described below.

- *Milan WA:* This 296-acre WA is located in Erie County outside of the Village of Milan, approximately 1.6 miles from the nearest proposed turbine. The area is characterized by oak-hickory woods and also includes the Christiana Creek, the Huron River, and the East Branch of the Huron River. Most of the WA topography is relatively level, but some steep slopes occur along the Huron River. The Milan WA offers opportunities for fishing, hunting, hiking, and wildlife observation (ODNR, 2012a).
- *Willard Marsh WA:* This 1,676-acre WA lies in the muck farming region of north central Ohio, approximately 2.6 miles from the nearest proposed turbine. The area is mostly flat with little natural drainage. Approximately two-thirds of the area is woodland while the remainder is divided equally between openland and brushland. The Willard Marsh WA offers opportunities for hunting, hiking, and wildlife observation (ODNR, 2012b).

- *Resthaven WA*: The Resthaven Wildlife Area totals 2,272 acres, including 444 acres of water. The WA is located at the northern edge of Castalia, approximately 4.2 miles from the nearest proposed turbine. Most of the land is woodland, shrublands, and grasslands, while 90 acres are in crop rotation. Much of the area was previously strip-mined, which left rough surfaces that have since reverted to woody vegetation and cattails. The Resthaven WA offers opportunities for fishing, boating, hunting, hiking, and wildlife observation (ODNR, 2012c).

3.5.3 Nationwide Rivers Inventory

Although there are no State or Federally-designated wild, scenic, or recreational rivers within 10 miles of the Project area, review of the Nationwide Rivers Inventory website indicates the presence of one listed river within the visual study area. The West Branch of the Huron River is listed for its outstanding recreational value and is located approximately 2.0 miles east of the Project boundary at its closest point. The river is characterized as a meandering stream flowing through a moderately wooded corridor, with some high banks and scattered housing along the river's edge. The stream is generally narrow with somewhat silted waters. It is used moderately for fishing and can be canoed seasonally (NPS, 2019).

3.5.4 Sites, Areas, Lakes, Reservoirs, or Highways Designated or Eligible as Scenic

The Lake Erie Coastal Ohio Scenic Byway in Erie County is the only designated scenic area within the visual study area, and at its closest point is located 6.7 miles north-northeast from the Project boundary (ODOT, 2019).

3.5.5 State and Federally Designated Trails

There is one State designated trail and one State bike route located within the visual study area. These include the Buckeye Trail and the North Coast Inland Trail Bike Route, described below (NPS, 2018a; ODOT, 2019a; Buckeye Trail Association, 2019).

- *Buckeye Trail*: The Buckeye Trail is a 1,444-mile long-distance hiking trail that loops around the state of Ohio. At its closest point, the trail comes within 0.1 miles of the nearest proposed turbine. The trail passes through scenic areas in the state as well as many small towns, offering users opportunities for both historical and outdoor recreation experiences.

- *North Coast Inland Trail Bike Route:* The North Coast Inland Trail is a work-in-process multipurpose trail. The trail covers many different distinct landscapes, including farmland, urban areas, and forests, as well as abandoned railroads. Within the study area, the trail consists of a paved hiking and bike path open year-round for walking, jogging, cycling, and in-line skating. At its nearest point, the trail is located approximately 0.3 miles from the nearest proposed turbine

3.5.6 State Nature and Historic Preserves

Review of the Ohio State Historic Preservation Office and ODNR websites indicated that there are no State Historic Preserves within the visual study area (Ohio History Connection, 2019). However, the area does include four State Nature Preserves (ODNR, 2019). These include the Erie Sand Barrens State Nature Preserve, Sheldon Marsh State Nature Preserve, Dupont Marsh State Nature Preserve, and Old Woman Creek (NERR) State Nature Preserve, which are described below.

- *Erie Sand Barrens State Nature Preserve:* Erie Sand Barrens State Nature Preserve consists of 32 acres in Erie County, approximately 2.3 miles from the nearest proposed turbine. The sandy soil of the preserve is well-drained but hosts wet depressions between the dry ridges. Erie Sand Barrens is noted for its wet meadows with rare plants as well as its remnant beach ridger that support dry sand prairie species. The preserve provides opportunities for hiking and bird-watching (ODNR, 2019a).
- *Sheldon Marsh State Nature Preserve:* Sheldon Marsh State Nature Preserve is comprised of 472 acres in the Sandusky Bay region, approximately 7.0 miles from the nearest proposed turbine. The preserve hosts contiguous wetlands that comprise some of the last remaining undeveloped stretches of shoreline in this area. The preserve contains many types of habitats, including old field, hardwood forest, woodland swamp, cattail marsh, barrier sand beach, and open water-lake. Sheldon Marsh is noted for its barrier beach and associated unusual plants, as well as excellent bird watching during spring and fall (ODNR, 2019b).
- *Dupont Marsh State Nature Preserve:* Dupont Marsh State Nature Preserve consists of 114 acres in Erie County, approximately 6.7 miles from the nearest proposed turbine. Most of the preserve consists of a marsh situated along the edge of the Huron River. Vegetation primarily consists of burreed, cattail, and spatter-dock around the shores and pondweeds and water-milfoil in deeper areas. The higher ground adjacent to the marsh was formerly pasture and farmland but is now occupied by typical old-field vegetation, including hawthorn and locust. The preserve is noted as an excellent site for viewing wildlife, as well as for its marshes which are considered the best remaining riverine marshes in Ohio (ODNR, 2019c).

- *Old Woman Creek (NERR) State Nature Preserve*: Old Woman Creek State Nature Preserve preserves 571 acres in Erie County, approximately 9.0 miles from the nearest proposed turbine. The area is also protected as a National Estuarine Research Reserve (NERR) and serves as a field laboratory where scientists can study the natural estuary system. The nature preserve features a variety of aquatic and terrestrial habitats, including marshlands, open water, a barrier sand beach, upland forests, and old crop fields in early plant succession. The area is noted as one of the few remaining freshwater estuaries in the Lake Erie region and an excellent site for viewing American water lotus beds and bald eagles (ODNR, 2019d).

3.5.7 Areas of Intensive Land Use

Areas of concentrated settlement within the visual study area are considered visually sensitive due to the type/intensity of land use they receive. The visual study area contains three cities and five villages within 5 miles of the Project area. Each of these is listed below, along their 2010 Census population.

- City of Bellevue, population: 8,202, located approximately 0.4 mile from the nearest proposed turbine.
- City of Norwalk, population: 17,012, located approximately 3.8 miles from the nearest proposed turbine.
- City of Willard, population: 6,236, located approximately 2.1 miles from the nearest proposed turbine.
- Village of Attica, population: 899, located approximately 2.6 miles from the nearest proposed turbine.
- Village of Monroeville, population: 1,400, located approximately 1.5 miles from the nearest proposed turbine.
- Village of New Washington, population: 967, located approximately 5.7 miles from the nearest proposed turbine
- Village of Castalia, population: 852, located approximately 3.9 miles from the nearest proposed turbine
- Village of Milan, population: 1,367, located approximately 3.8 miles from the nearest proposed turbine

For more information on the visual character of the cities and villages within the visual study area, see Section 3.2.2.

3.5.8 Transportation Corridors

Nineteen well-used transportation corridors traverse the visual study area, including one Interstate highway, three U.S. highways, and 15 State highways. For more information on transportation corridors within the visual study area, and their proximity to the Project, please see Appendix B.

3.5.9 Local Parks and Recreational Facilities

Twenty-six local recreational facilities were identified within 5 miles of the proposed Project, including parks, soccer complexes, and sports complexes. An additional 56 local parks were identified between 5 and 10 miles within the visual study area. For a complete list of local park and recreational facilities within the visual study area and their proximity to the Project area, see Appendix B.

3.5.10 Local Trails and Bike Routes

In addition to trails that are State or Federally-designated (described above in Section 3.5.5), three local bike routes occur within 5 miles of the proposed Project. These include the OH 101 Bike Route in Erie and Sandusky Counties, West Bogart Road Bike route in Erie County, and a community Bike Path in Erie, Huron, Richland, and Sandusky Counties. At their closest points, these bike routes come within 3.5, 3.9, and 0.6 miles, respectively, of the nearest proposed turbine (Ohio Bikeways, 2019).

3.5.11 Water Resources

Forty-one water resources were identified within 5 miles of the Project area. These include Bellevue Reservoir, located approximately 0.4 miles from the nearest proposed turbine, the West Branch of the Huron River, located approximately 1.0 miles from the nearest proposed turbine, and Willard Reservoir, located approximately 4.9 miles from the nearest proposed turbine. Major waterbodies located within 10 miles of the Project area include Lake Erie, located approximately 7.0 miles from the nearest proposed turbine, and Sandusky Bay, located approximately 7.6 miles from the nearest proposed turbine. For a complete list of water resources in the visual study area as well as their proximity to the Project area and potential visibility of the proposed Project, see Appendix B.

All inventoried scenic/sensitive resources within the 10-mile radius visual study area are listed in Appendix B. The location of mapped visually sensitive resources within the visual study area is illustrated in Figure 5.

4.0 Visual Impact Assessment Methodology

The VIA procedures used for this study comply with the requirements of Ohio Administrative Code Chapter 4906-04-08(D)(4) for the Ohio Power Siting Board, and are consistent with methodologies developed by the U.S. Department of the Interior, Bureau of Land Management (1980), U.S. Department of Agriculture, National Forest Service (1974), U.S. Department of Transportation, Federal Highway Administration (1981), and other state and federal agencies. They are widely accepted as standard visual impact methodology for wind energy projects (CEIWEF, 2007). The specific techniques used to assess potential Project visibility and visual impacts are described in the following section.

4.1 Project Visibility

An analysis of potential turbine visibility was undertaken to identify those locations within the visual study area where there is potential for the Project wind turbines to be seen from ground-level vantage points. This analysis included identifying potentially visible areas on viewshed maps and verifying visibility in the field. The methodology employed for each of these assessment techniques is described below.

4.1.1 Viewshed Analysis

Viewshed analyses were based on the Ohio Statewide Imagery Program's 2007 light detection and ranging (lidar) data for Erie, Huron, Sandusky, and Seneca Counties. Lidar is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the earth to generate precise, three-dimensional information about the shape of the earth and its surface characteristics (NOAA, 2018). It is important to note that the lidar data used in this analysis are from 2007, which raises the possibility that the resulting analysis may not reflect landscape conditions as they currently exist. However, based on review of current aerial photography and field review, it does not appear that significant changes have occurred since that time.

Viewshed Analysis – Topography Only

To determine if certain geographic areas or sensitive resources within the study area would definitely be screened from view of the Project, topographic viewshed maps for the Project were prepared using a lidar-derived bare earth digital terrain model (DTM); the location and height of all proposed turbines (see Figures 1 and 2); an assumed viewer height of 6 feet; and ESRI ArcGIS® software with the Spatial Analyst extension. The topographic viewshed analysis is based upon the existence of a direct, unobstructed line of sight to a proposed turbine from various observation points throughout the study area based on the screening provided by topography only. The resulting topographic viewshed maps define the maximum area from which any turbine could potentially be seen within the study area. Because the screening provided by vegetation and structures is not considered in this analysis, the topographic viewshed--rather

than demonstrate project visibility--is a definitive indicator of the lack of visibility of the potential Project. Topographic viewshed maps assume that no trees exist or built structures, and therefore are very accurate in predicting where visibility will not occur due to topographic interference. However, they are less accurate in identifying areas from which the Project would actually be visible. Trees and buildings can limit or eliminate visibility in areas indicated as having potential Project visibility in the topographic viewshed analysis.

Two 10-mile radius topographic viewsheds were mapped; one to illustrate "worst case" daytime visibility (based on the blade tip heights described in Section 2.2.1) and the other to illustrate potential visibility of turbine lights (based on a FAA warning light heights described in Section 2.2.1). The FAA warning light (i.e., nacelle height) viewshed analysis was based on the assumption that all turbines would be lit, in conformance with FAA lighting guidelines for turbines that exceed a maximum height of 500 feet (FAA, 2016).

Viewshed Analysis – Topography, Structures and Vegetation

To provide a more accurate analysis of potential Project visibility within the study area, a second-level viewshed analysis was completed to incorporate the screening effect of structures and vegetation, as captured in the previously referenced 2007 lidar data. A digital surface model (DSM) of the study area was created from the lidar data, which includes the elevations of buildings, trees, and other objects large enough to be measured by the lidar technology. The DSM was then used as a base layer for the viewshed analysis, as described above. Once the viewshed analysis was completed, a conditional statement was used to set Project visibility to zero in locations where the DSM elevation exceeded the bare earth elevation by 6 feet or more. This was done for two reasons; 1) because in locations where trees or structures are present in the DSM, the viewshed would reflect visibility from the vantage point of standing on the tree top or building roof, which is not the intent of this analysis and 2) to reflect the fact that ground-level vantage points within buildings or areas of vegetation exceeding 6 feet in height will generally be screened from views of the Project.

Because it accounts for the screening provided by structures and trees, this second-level viewshed analysis is a more accurate representation of potential Project visibility. However, it is worth noting that because characteristics of the proposed turbines that influence visibility (color, narrow profile, distance from viewer, etc.) cannot be taken into consideration in the viewshed analyses, being located within the viewshed does not necessarily equate to actual Project visibility. The viewshed analyses help define those areas with the greatest potential for Project visibility within the study area. Field review is required to confirm the accuracy of the viewshed analyses.

4.1.2 Field Verification

Visibility of the proposed Project was evaluated in the field on multiple occasions from July 2017 through December 2018 (July 19 & 20, 2017, October 29 & 30, 2018, November 14, 2018 and December 11, 2018). The purpose of these site visits was to verify potential turbine visibility in the field and to obtain photographs for subsequent use in the development of visual simulations. Weather conditions during the 2018 visits were variable at best, ranging from overcast with fog, to ice and snow. However, clear conditions during the 2017 field visit allowed assessment of potential Project visibility, and provided photographs that collectively depict a representative variety of sky/lighting conditions. The photographs depict the study area during both summer conditions, when the aesthetic quality of the landscape (i.e., with vegetation in full foliage) and outdoor activity by viewers are generally the highest, and winter conditions when lack of tree foliage provide for a “worst-case” screening scenario.

During the field verification, public roads were driven, and public vantage points were visited within the study area to document points from which the turbines would likely be visible, partially screened, or fully screened. The determination of Project visibility at a specific location was made based on the visibility of existing structures located in proximity to the proposed turbine sites (communication towers, silos, woodlots, etc.), which served as locational and scale references. Photos were taken from 144 representative viewpoints within the study area. During the field surveys, photographs were taken with a Canon EOS 5D Mark IV with a fixed 50 mm lens or a Nikon D7100 digital SLR camera with a focal length between 28 and 35 mm (equivalent to between 45 and 55 mm on a standard 35 mm film camera). This focal length is the standard used in visual impact assessment because it most closely approximates normal human perception of spatial relationships and scale in the landscape. Viewpoint locations were determined using hand-held global positioning system (GPS) units and high-resolution aerial photographs (digital ortho quarter quadrangles). The time and location of each photo were documented on all electronic equipment (camera, GPS unit, etc.) and noted on field maps and data sheets. Viewpoints photographed during field review generally represented the most open, unobstructed available views toward the Project area from various LSZs, distances, directions, and VSRs within the visual study area. Locations of the viewpoints are indicated in Figure 9 and a photo log, including a representative photograph toward the Project area from each viewpoint, is included as Appendix C.

4.2 Project Visual Impact

Beyond evaluating potential Project visibility, the VIA also examined the visual impact of the proposed wind turbines on aesthetic resources and viewers within the visual study area. Assessment of visual impact involved creating computer models of the proposed Project turbines and layout, selecting representative viewpoints within the study area, and preparing computer-assisted visual simulations of the proposed Project from those locations. These

simulations were then used to characterize the type and extent of visual impact resulting from Project construction. At the time of submittal of this VIA, the location and design of the collection substation was unknown. Evaluation of the visual effect of this component of the Project is therefore not included in this VIA. Details of the visual impact assessment procedures are described below.

4.2.1 Viewpoint Selection

From the photo documentation conducted during field verification, EDR selected a total of 10 viewpoints for development of visual simulations, with an additional two viewpoints selected for the production of “wire frame” renderings. These viewpoints were selected based upon the following criteria:

1. They provide clear, unobstructed views of the Project (as determined through field review and follow-up verification through computer modeling).
2. They illustrate Project visibility from certain VSRs within the visual study area where open views are available.
3. They illustrate typical views from LSZs where views of the Project will be available.
4. They illustrate typical views of the proposed Project that will be available to representative viewer/user groups within the visual study area.
5. They illustrate typical views of different numbers of turbines, from a variety of viewer distances, and under different lighting conditions, to illustrate the range of visual change that will occur with the Project in place.
6. They include views where turbines from other proposed projects will also be available, to allow an assessment of potential cumulative visual impacts.

Location of the selected viewpoints is indicated in Figure 9. Locational details and the criteria for selection of each viewpoint are summarized in Tables 2 and 3, below:

Table 2. Viewpoints Selected for Simulation and Evaluation

Viewpoint Number	Location and/or VSRs	LSZ Represented	Viewer Group Represented	Viewing Distance ¹	View Orientation ²
017	County Road 114 (Thomas Rd), Township of Oxford, Erie County	Rural Residential/Agricultural, Transportation Corridor	Local Residents	0.81	SW
031	Memorial Reservoir Foot Bridge, City of Norwalk, Huron County	City/Village, Suburban Residential Zone	Tourists/Recreational Users	8.24	NW

Viewpoint Number	Location and/or VSRs	LSZ Represented	Viewer Group Represented	Viewing Distance ¹	View Orientation ²
044	Bellevue Reservoir, Township of Sherman, Huron County	Rural Residential/Agricultural Zone	Tourists/Recreational Users	0.49	SSW
048	County Road 30 (Section Line Rd 30 N), Township of Lyme, Huron County	Rural Residential/Agricultural Zone	Local Residents	1.20	NE
055	County Road 64 (Pontiac Section Line Rd), Township of Sherman, Huron County	Rural Residential/Agricultural Zone	Local Residents	0.20	NE
068	State Route 99 Township of Greenfield, Huron County	Rural Residential/Agricultural Zone	Local Residents, Through Travelers/Commuters	2.15	W
082	County Road 78 (Willard West Rd) Township of Richmond, Huron County	Rural Residential/Agricultural Zone	Local Residents	0.63	SW
089	Bellevue Reservoir, City of Bellevue, Huron County	City/Village, Suburban Residential Zone	Local Residents, Tourists/Recreational Users	0.65	SE
135	State Route 62 (E Jefferson St.), Republic Park	Suburban Residential Zone	Local Residents, Tourists/Recreational Users	9.32	ENE
138	State Route 101 (Portland Rd.), Butternut Ridge Church of Christ and Cemetery	Suburban Residential Zone	Local Residents	7.78	E

¹Distance from viewpoint to nearest visible turbine (in miles)

²N = North, S = South, E = East, W = West

Table 3. Viewpoints Selected for Wire Frame Renderings

Viewpoint Number	Location and/or VSR	LSZ Represented	Viewer Group Represented	Viewing Distance ¹	View Orientation ²
030	Memorial Reservoir, City of Norwalk, Huron County	City/Village, Suburban Residential Zone	Local Residents, Tourists/Recreational Users	8.25	SW
143	United States Route 6 (Lake Erie Coastal Ohio Scenic Byway) at the Joseph Steinen Wildlife Area	Rural Residential/Agricultural, Suburban Residential Zone	Local Residents, Tourists/Recreational Users, Through Travelers/Commuters	6.80	SW

¹Distance from viewpoint to nearest turbine (in miles)

²N = North, S = South, E = East, W = West

4.2.2 Visual Simulations

To show anticipated visual changes associated with the proposed Project, high-resolution computer-enhanced image processing was used to create 10 realistic photographic simulations and two “wire frame” renderings from 12 representative viewpoints. The photographic simulations were developed by using Autodesk 3ds Max Design® to create a simulated perspective (camera view) to match the location, bearing, and focal length of each existing conditions photograph. Existing elements in the view (e.g., topography, buildings, roads, existing communications towers) were modeled based on aerial photographs and DSM data in AutoCAD Civil 3D®. A three dimensional (3-D) topographic mesh of the landform (based on DSM data) was then brought into the 3-D model space. At this point minor adjustments were made to camera and target location, focal length, and camera roll to align all modeled elements with the corresponding elements in the photograph. This assures that any elements introduced to the model space (e.g., the proposed turbines) will be shown in proportion, perspective, and proper relation to the existing landscape elements in the view. Consequently, the alignment, elevations, dimensions and locations of the proposed Project structures will be accurate and true in their relationship to other landscape elements in the photograph.

Computer models of the proposed turbines and turbine layout were prepared based on specifications and coordinates provided by the Applicant. For the purposes of this analysis, it was assumed that the turbines would be Nordex N149 machines at 125m hub height except for T67, T70, and TT82 which would be the Nordex N149 at 109m hub height (Figure 2), and all turbine rotors were modeled facing into the prevailing wind (i.e., oriented to the southwest). Using the camera view as guidance, the visible portions of the modeled Project components were then imported to the landscape model space described above and set at the proper coordinates.

At this point, a “wire frame” model of the facility and known reference points are shown on each of the photographs. For viewpoint numbers 30 and 130 the process ended at this step, because the “wire frame” rendering showed that there was no visibility of the Project from these viewpoints. For the remaining viewpoints, once the proposed Project was accurately aligned within the camera view, a lighting system was created based on the actual time, date, and location of the photograph. Using the Arnold® rendering engine within the Autodesk 3ds Max Design® software, light reflection, highlights, color casting, and shadows were accurately rendered on the modeled turbines, based on actual environmental conditions represented in each photograph. The rendered Project was then superimposed over the photograph in Adobe Photoshop® and portions of the Project components that fell behind vegetation, structures or topography were masked out. Photoshop was also used to take out any vegetation proposed to be removed as part of the Project. Once the turbines were added to the photo, any shadows cast on the ground by the proposed structures were also included by rendering a separate “shadow pass” over the DSM model in Autodesk 3ds Max Design® and then overlaying the shadows on the simulated view with the proper fall-off and transparency using Adobe Photoshop®.

Simulation methodology and accuracy is outlined in Figure 6 and the computer model of the turbine used in this VIA is shown in Figure 2.

4.2.3 Illustrative Project Renderings

Recent revisions to the OPSB regulations require that the following additional analysis be included with the visual impact assessment: *"The applicant shall provide photographic simulations or artists pictorial sketches of the proposed facility from at least one vantage point in each area of three square miles within the project area, showing views to the north, south, east, and west. The photographic simulations or artists pictorial sketches shall incorporate the environmental and atmospheric conditions under which the facility would be most visible."* To address this requirement, EDR placed a three mile by three mile grid over the proposed Project area to identify locations from public roads that would likely have views of the proposed Project. This overlay process identified 15 viewpoints that could be used to meet the OPSB requirement of illustrating views (renderings) of the Project in four cardinal directions (north, south, east and west). These locations are listed below in Table 4 and are illustrated in Appendix F. Once the viewpoint locations were established, EDR generated four virtual cameras at each location using Autodesk 3ds Max Design® software. Each of the cameras was set to look in the four cardinal directions, as required by the OPSB. The methodology used to create these renderings is described below.

Table 4. Three Square Mile Proposed Project Rendering Locations

Viewpoint Name	Location	County	Township	Latitude	Longitude
Project Rendering 1	Corner of Road 38 (Billings Rd)	Erie	Groton	41.31857001° N	82.79292154° W
Project Rendering 2	State Route 99	Erie	Oxford	41.30903497° N	82.73968599° W
Project Rendering 3	County Road 94 (Higbee Rd)	Erie	Oxford	41.31036861° N	82.68559812° W
Project Rendering 4	United State Highway 20	Huron	Lyme	41.26678378° N	82.80900716° W
Project Rendering 5	United State Highway 20	Huron	Lyme	41.25803437° N	82.75751610° W
Project Rendering 6	State Route 4	Huron	Lyme	41.24247887° N	82.80518985° W
Project Rendering 7	County Road 40 (Sand Hill Rd)	Huron	Lyme	41.24457149° N	82.76373810° W
Project Rendering 8	County Road 64 (Pontiac Section Line Rd)	Huron	Sherman	41.18020864° N	82.83009264° W
Project Rendering 9	County Road 64 (Pontiac Section Line Rd)	Huron	Sherman	41.17923303° N	82.77470122° W
Project Rendering 10	Intersection of State Route 4 & N. Township Rd 122	Seneca	Reed	41.13881407° N	82.85287847° W
Project Rendering 11	County Road 194 (Jennifer Rd)	Huron	Norwich	41.13764570° N	82.81501557° W
Project Rendering 12	County Road 96 (Gregory Rd)	Huron	Norwich	41.13308886° N	82.74446087° W
Project Rendering 13	County Road 8 (Greenfield Section Line Rd)	Huron	Norwich	41.10954640° N	82.81196673° W
Project Rendering 14	County Road 9 (Scottwood Rd)	Huron	Norwich	41.11521575° N	82.76678038° W
Project Rendering 15	County Road 12 (Town Line Rd 12)	Huron	Richmond	41.07058013° N	82.82119203° W

Since actual photographs were not taken at the selected viewpoint locations, high-resolution lidar data were used to create a three-dimensional (3D) computer model of the existing landscape. Lidar is essentially a collection of points (a "point cloud") representing the horizontal and vertical positions of existing elements in the landscape. These points were assigned dimensions in Autodesk 3ds Max Design® so that they would be visible to the cameras in the model. Additionally, EDR used georeferenced aerial photographs taken during the growing season in order to apply a color value to each of the points in the point cloud. This allows for an accurate representation of the colors present in the existing landscape. Once the existing landscape representation was completed, EDR added the proposed Project turbines to the 3D model, as described in Section 5.2.2. In addition, turbines associated with the proposed Republic and Seneca Wind Farms were added to the lidar landscape model to illustrate cumulative project visibility. In order to differentiate between the proposed projects, the Seneca and Republic turbines were assigned a dark gray color. This is only intended to clearly distinguish the proposed Project from the other turbines, and should not be misinterpreted as the actual turbine color. With the turbines and environmental point cloud in place, EDR used the Arnold® rendering engine within the Autodesk 3ds Max Design® software to render the views. This ensures that light reflection, highlights, color casting, and shadows are an accurate representation of typical environmental conditions. The skies were programmed to be cloudless and blue, providing a high contrast background. The resulting renderings assume high visibility viewing conditions from each of the four view directions at 15 viewing locations (total of 60 renderings). The resulting Project renderings are provided in Appendix F, along with the mapped viewpoint locations and technical specifications. It should be noted that the geometric values that were applied to the points appear as circles in the completed viewpoint renderings when proximate to the viewer. These circles represent actual screening elements found in the Project area, such as portions of trees, utility poles, houses, barns, or other built structures.

5.0 Visual Impact Assessment Results

5.1 Project Visibility

5.1.1 Viewshed Analysis

The topographic viewshed analysis indicates that areas where there is no possibility of seeing the Project based on screening by topography alone are extremely limited. These areas consist of a few topographic depressions primarily occurring along river and creek valleys, including portions of the Huron River valley. The topographic viewshed analysis suggested that nearly all of the inventoried VSRs within the visual study area could potentially have some degree of visibility of the Project due to a lack of topographic screening.

Factoring vegetation and structures into the viewshed analysis (the DSM viewshed) provides a more accurate indication of potential Project visibility (Figure 7). The blade tip viewshed analysis indicates that approximately 544.2 square miles, or 57.5% of the visual study area could have views of the proposed Project when considering the screening provided by structures and vegetation (Table 5). Visibility will be eliminated throughout the study area along forested stream corridors and river valleys as well as within small tracts of remnant forest vegetation between agricultural fields. Visibility is also drastically reduced or eliminated in cities and villages due to the screening provided by buildings and vegetation. In general, areas of screened views increase in size with distance from the Project. Sizable areas of limited or no turbine visibility occur in the Cities of Norwalk, Clyde and Bellevue; the Villages of Milan, Castalia, Berlin Heights, and Willard; and portions of the Huron River valley. The viewshed analysis indicates that views of the Project will be fully screened from 252 of the inventoried visually sensitive resources within the 10-mile radius study area. These include 147 NRHP-listed resources, 28 NRHP-eligible resources, one State Wildlife Area, 15 transportation corridors, and 61 local parks (see Appendix B). Only one of the inventoried VSRs, the NRHP-eligible Thompson Twp.- Royer Ditch (Carries- TR 80), is indicated as having fully unobstructed views of the Project. The remaining 125 identified resources are indicated as having partially screened views, depending on the exact location of the viewer within the resource's mapped boundary.

During evening hours, potential for FAA obstruction warning light visibility, as indicated by the DSM viewshed analysis, is limited to 454.8 square miles, or approximately 48.1% of the visual study area. This analysis indicates that the FAA warning lights will generally be screened from view in the same areas where screening of daytime views of the blade tip was indicated. The areas where FAA lights are predicted to be screened are slightly expanded due to the shorter height of the FAA warning lights in comparison to the turbine blade tip.

Table 5. Ten Mile-Radius Visual Study Area Viewshed Results Summary

Number of Turbines Visible	Blade Tip – Structures and Vegetation		FAA Warning Light ¹ – Structures and Vegetation	
	Square Miles ²	% of Study Area	Square Miles	% of Study Area
0	401.7	42.5	491.1	51.9
1-17	248.3	26.3	281.3	29.7
18-34	132.5	14.0	96.0	10.1
35-51	78.9	8.3	49.6	5.2
52-68	49.4	5.2	22.4	2.4
69-87	35.0	3.7	5.5	0.6
Total Visible	544.2	57.5	454.8	48.1

¹The FAA warning light viewshed is based on the assumption that all 34 turbines will be lit.

²The 10-mile radius study area is approximately 946.1 square miles in size.

5.1.2 Field Review Analysis

Weather conditions during the site visits on October 29 & 30, 2018, November 14, 2018 and December 11, 2018 were not favorable, with only a few instances of clear weather that allowed for long distance views. However, weather conditions did not impede field review of foreground and middle ground visibility, and an earlier visit to the area (in 2017) allowed for evaluation of potential long-distance views. During the field review, it was consistently noted that forested hedgerows or woodlots were almost always present in the foreground or middle ground of a view, generally providing a backdrop to open agricultural fields in the foreground. Because of the very limited topographic change found throughout the landscape, intervening vegetation with a typical height of 40-50 feet effectively screens open long-distance views and generally limits the visibility of the Project to the foreground and middle ground distances (i.e., up to 4 miles). Taking into consideration that the background distance zone covers over 65% of the study area, field review suggested that from the majority of the study area, potential views of the proposed turbines will be limited to distant views in breaks between woodlots and hedgerows. This can be seen on the viewshed analysis which was confirmed during the site visits. The “wire frame” rendering below, showing a view from the Lake Erie Coastal Ohio Scenic Byway, depicts how level topography and intervening vegetation and buildings will limit background visibility of the Project. It is important to note that the location of the viewpoint pictured in the “wire frame” rendering below was taken at one of the few locations in this area where the viewshed indicated the potential for Project visibility.



Inset 7. Wire frame rendering of potential turbine visibility. United States Route 6, Joseph Steinen Wildlife Area, Township of Huron, Erie County, Ohio (Viewpoint 144).

Field review of the visual study area also suggested that when closer to the Project area (i.e., inside 5 miles), screening provided by hedgerows and woodlots will have a more limited effect, and larger portions of the Project will generally be visible due to the lack of topographic screening and the abundance of open agricultural land. Open views experienced during the site visits were primarily documented within the Rural Residential/Agricultural LSZ and portions of the Suburban Residential and Transportation Corridor zones. Field review confirmed a general lack of open views toward the Project area from developed areas with an abundance of structures and street/yard trees, particularly in the Cities of Norwalk, Willard, Bellevue, Clyde, Huron, and Sandusky; and the various villages within the study area (including Bloomville, Republic, Berlin Heights, Milan, Attica, Chatfield, Monroeville, New Washington, Plymouth, Tiro, Bay View, Castalia, and North Fairfield). Consequently, views of the Project from the majority of residences and historic sites within these areas of concentrated development are anticipated to be fully or substantially screened. In general, only on the outskirts of these areas, where building set-backs and lot sizes start to increase, and/or community parks and fairgrounds abut open agricultural fields, are open views available in the direction of the Project site. In a few cases, views of the Project may be available to viewers from interior portions of the cities and villages when looking along open road corridors oriented toward the Project site. When instances like this occur, the number of visible turbines will generally be limited due to screening provided by buildings and trees that flank the road corridors. Outside of the

cities and villages, field review confirmed that the Project will be visible from most of the transportation corridors in the study area. However, because of its distance from the Project site, lack of topography, and intervening vegetation, views of the Project from Interstate Route 80/90 will be very limited.

As mentioned previously, the majority of VSRs identified within the visual study area can be found in the cities and villages. Field review of these areas confirmed that visibility from the majority of these sites will be partially to fully screened by the surrounding built environment.

NRHP

Of the three NHRP-listed sites with visual significance, field review confirmed that open views toward the Project are available in places. At the John Wright Mansion, the Project will be screened from view by street trees and adjacent residential structures in areas of viewer concentration. However, as one travels the mansion's grounds, open yards to the south associated with the Historic Lyme Village and Museum, as well as north across State Route 113, allow for open views toward the Project.

Field review of Hunts Corners revealed that open views toward the proposed turbines will be available in multiple directions. Residential structures and associated suburban yard plantings will partially screen views, with the most effective screening occurring to the north of State Route 547 where a mature hedgerow behind several residences and a church screen views to the north. However, to the south of State Route 547, open agricultural fields with minimal intervening vegetation provide open views toward the proposed turbines. Due to the proximity of the turbines to Hunts Corners (less than 1 mile) and the presence of adjacent open fields, there is potential for turbines to be visible in the near middle ground and to a lesser extent, the background.

The third NRHP-listed site with visual significance is the Heter Farm. This property is currently a private residence with a highly vegetated yard and a large number of separate out buildings. Outward views from the property are heavily screened by the associated vegetation and buildings. However, from certain areas between these features turbine visibility will be available. Street trees located along County Road 29 to the north and south of the Heter Farm will help to screen the Project from views in these directions. However, when viewing the farm complex from County Road 29, there is potential for views of proposed turbines behind the property to the east.

Wildlife Areas

A selection of the 11 State Wildlife Areas that showed potential visibility were visited and photographed during the site visit. These sites included, the Milan WA, Willard Marsh WA, Resthaven WA and Pickerel Creek WA, which were chosen for their representative distances from the Project (1.62, 2.58, 4.20 and 7.91 miles respectively).

Field review of the Milan WA confirmed that views of the Project are likely to be unavailable from the parking area and the informal trail located at the Lovers Lane bridge over the West Branch of the Huron River. The area is forested with dense, mature vegetation that will continue to provide screening throughout the leaf-off winter months. Visual impact on the Milan WA will be negligible.

The majority of the Willard Mash WA is within a heavily forested area that screens open views toward the proposed turbines. It was observed that while on the trail system, openings will be available through breaks in the adjacent hedgerows and where the trail network leaves the forested areas or is directly adjacent to an open agricultural field. At a distance of almost 4 miles to the nearest turbine, views from these areas will include a limited number of visible turbines in the background.

The Resthaven WA has an extensive trail system and multiple parking areas. The field review was conducted from the designated parking area on County Road 312 (Carson Pass). This location provided access to the southern portion of the wildlife area where trails and amenities suggest the highest potential for public use. During the field review, varying conditions were observed along the trail network, the majority of which crossed through successional fields with meadow vegetation and scrub brush up to 12 to 15 feet tall. Other portions of the trail network move in and out of wooded areas, and to the north begin to skirt wetland areas. Mature woodlots and hedgerows enclose the trail network and successional fields, limiting long distance open views to intermittent breaks in the vegetation. In the northern portion of the wildlife area wetlands/open water provide more open views toward the Project site. This will most likely occur along Heywood Drive, where breaks in the roadside hedgerow and open water align. Pull-offs, viewing areas and boat launches are available to the public in the very northern section of the WA, approximately 6 miles from the nearest turbine. Mature shoreline vegetation screens views south from these areas, and works with the distance to limit the Projects potential visibility from this the resource.

Field review of the Pickerel Creek WA revealed a unique constructed wetland with an internal trail network that provides opportunities for wildlife viewing. Conditions similar to those noted at the Resthaven WA were observed here as well. These include wetlands/open water that allow for open viewing, with an edge comprised of mature hedgerows and woodlots that screen long distance views. The Donald Thompson Wetland Viewing Platform provides for an elevated view of the wildlife area. Views of adjacent wetlands and wildlife from the platform are primarily available to the north. Looking north you can also see Sandusky Bay, approximately 1 mile away, and to the east communication and water towers associated with the Village of Castalia are visible approximately 5 miles away. Toward the south east, in the direction of the Project, even from an elevated viewpoint intervening hedgerows and mature vegetation screen any

views to the middle ground and beyond. This makes views of the proposed turbines, at a distance of over 7 miles, very unlikely.



Inset 8. Representative Photographs of Ohio State Wildlife Areas.

Top Left: Milan WA, County Road 48 (Lovers Lane Rd) Bridge over the West Branch Huron River, Township of Oxford, Erie County, Ohio (Viewpoint 28);

Top Right: Willard Marsh WA off of County Road 82 (Bull Head Rd), Township of Richmond, Huron County, Ohio (Viewpoint 74);

Bottom Left: Resthaven WA at parking area off of County Road 312 (Carson Pass), Township of Townsend, Sandusky County, Ohio (Viewpoint 98);

Bottom Right: Donald Thompson Wetland Viewing Platform, Pickerel Creek WA, Township of Townsend, Sandusky County, Ohio (Viewpoint 102);

Other

As discussed above and displayed in Inset 8, viewshed analysis depicted potential visibility along the Lake Erie Coastal Ohio Scenic Byway. Field review confirmed that, due to level topography and intervening vegetation and buildings, open views to the southwest, toward the Project site will be rare and fleeting, with the focus of the coastal byway being to the east and the shoreline of Lake Erie.

The North Coast Inland Trail and the Buckeye Trail, pass through every LSZ within the study area. Consequently, field review confirmed potential Project visibility from portions of both these VSRs. The same situation (where the trail

traverses all of the identified LSZs), holds true for the local bike trails/paths as well. The visual simulations presented in Section 5.2 represent the range of potential views that may be available from these trails.

The Erie Sand Barrens, Sheldon Marsh, Dupont Marsh and Old Woman Creek State Nature Preserves were also visited during field review. In addition to walking the designated trail networks at these sites, roadways adjacent to the nature preserves were also driven to document any areas where potential views could be available from the interior. This review confirmed that, because of the generally low elevation of the nature preserves and abundant, mature vegetation at the boundaries, open outward views are very limited if available at all.



Inset 9. Representative Photographs of Ohio State Nature Preserves.

Left: Old Woman Creek State Nature Preserve, off of United State Route 6 (Lake Erie Coastal Ohio Scenic Byway), Township of Berlin Annex, Erie County, Ohio (Viewpoint 96);

Right: Erie Sand Barrens State Nature Preserve, off of County Road 12 (Scheid Rd), Township of Oxford, Erie County, Ohio (Viewpoint 14);

Various county park system lands were visited, including the Erie Metro Park System, (Castalia Quarry, Steinen Wildlife Area/East Sandusky Bay, Milan Towpath and the Edison Woods Metro Parks), the Sandusky County Park System, (Blue Heron Reserve), the Huron County Park District, and the Seneca County Park District, (Garlo Heritage Nature Preserve). At these locations, field review could not rule out that the possibility of open views of Project turbines. However, based on the amount of mature forest associated with each site, it appears that these views will be limited, and where available, would generally include a relatively small number of Project turbines.

Local township and city parks visited during the site visits included Veteran's Memorial Lake and Stoutenburg Park, in the City of Norwalk, Mary Fate Park, in the Township of New Haven and Community Park, in the Township of Green Creek. Field review of the local park systems revealed that the park locations fell into two distinct landscape conditions. The first condition is where the park falls inside of a city or village limits and is surrounded by the built environment, which limits open external views and concentrates available views internally. These parks often accommodate highly

prescribed activities such as various youth sports, using playground equipment, Frisbee Golf, fishing and more, which consume the user's attention (e.g., Willard City Park). The second situation is where the park occurs at the outskirts of the residential concentrations and often is associated with trail networks, open space and reservoirs, such as the Bellevue Community Center and the Attica Fairgrounds. Under these conditions, outward views toward the Project site may be available.

The visual study area contains multiple water resources that were visited and evaluated during the field visit. These included natural features like Lake Erie and the West Branch of the Huron River, as well as several man-made reservoirs.

Lake Erie was evaluated from the shoreline and access points in and around the City of Sandusky. As discussed above, lack of topographic change, intervening vegetation, and nearby buildings effectively screen views toward the Project site from these locations. Viewshed analysis pointed to the potential for visibility on the water as one moves away from the shoreline. Weather conditions did not allow for an evaluation of potential visibility from the water, however, based on shoreline reconnaissance it is predicted that visibility would be minimal and limited to the blade tips of a relatively small number of individual turbines.

The West Branch of the Huron River was evaluated from adjacent roadways and selected public access points. Field review confirmed that the portion of the river that is on the NRI and within the visual study area meanders through mature, dense shoreline vegetation, that screens outward views. The river surface itself is also set down in the landscape with an elevated shoreline that also works to limit views. Straight sections of the river, where a long-distance view down the river channel aligns with the direction of the Project, do not present themselves within the visual study area.

Shoreline dikes associated with many of the man-made reservoirs in the study area are often the highest points within the landscape. This allows for open views across the landscape into the background. Although these community resources are generally open to the public and often include a trail along the earthen berm, scenic quality is not particularly high, and distant views are often blocked by intervening trees. To demonstrate this, a "wire frame" rendering was created to determine the degree of potential Project visibility from the Memorial Reservoir Park in the City of Norwalk. As the "wire frame" below shows, the majority of the turbines will remain below the existing vegetation and buildings, with only a blade tip potentially visible between these features. In addition see the visual simulations provided from viewpoints 31, 44 and 89, all of which are from reservoirs.



Inset 10. Wire frame rendering of potential Turbine Visibility. Memorial Reservoir, City of Norwalk, Huron County, Ohio (Viewpoint 130).

5.2 Photographic Simulation Analysis of Existing and Proposed Views

To illustrate anticipated visual changes associated with the proposed Project, photographic simulations of the completed Project from each of the 10 selected viewpoints indicated in Figure 9 were used to evaluate Project visibility, appearance, and contrast with the existing landscape. Review of these images, along with photos of the existing view, allowed for comparison of the aesthetic character of each view with and without the proposed Project in place. Where applicable, additional turbines were added for the proposed Seneca and Republic Wind Projects and a cumulative effect comparison was undertaken. The images used for this analysis are included in the following section and in Appendix D. Results of the evaluation are presented in the following pages.

Viewpoint 17 (Appendix D – Sheets 1-4)

Inset 11: Existing view from County Road 114 (Thomas Road), Township of Oxford

Existing Conditions

This viewpoint is located on Thomas Road in the Township of Oxford. The selected viewpoint is approximately 0.8 mile from the nearest proposed turbine, and is representative of the Rural Residential/Agricultural and Transportation LSZ. The existing view to the southwest features a flat, harvested agricultural field in the immediate foreground that is separated from the roadside by a grassy strip. The field is interrupted in the middle ground by a yard containing two barns, a rural residence and associated buildings. Trees and low shrubs can be seen around the buildings, and a broken line of more distant trees borders the far edge of the field. An overhead utility line and distant communication tower break the horizon line, but do not extend into the sky more than the buildings and trees in the middle ground. The overcast sky features a dramatic pattern of illuminated and shadowed clouds. The existing view has a working agricultural character and overall scenic quality is low to moderate.



Inset 12: Visual simulation of proposed view from County Road 114 (Thomas Road), Township of Oxford

Proposed Project

With the proposed Project in place, numerous turbines have been added to the middle ground and background of the view. The two turbines in the middle ground are relatively close to the viewer, and largely unscreened. At this distance, details of the nacelles are visible, and the turbines' scale contrast with the existing structures is notable. They extend well into the sky, and their novel line and form also contrast with existing landscape features. Multiple, more distant turbines can be seen in the background and extend across the full width of the horizon line. The towers of these turbines are mostly screened by forest vegetation, but the nacelles and rotors are visible above the tree line. The more distant turbines present far less scale contrast, and at this distance offer minimal color contrast against the cloudy sky. However, the Project may become more visible under clearer conditions. Although the Project appears compatible with the working landscape, the two turbines in the middle ground become prominent new focal points that have a moderate impact on scenic quality and landscape character at this viewpoint.



Inset 13: Cumulative visual simulation of proposed view from County Road 114 (Thomas Road), Township of Oxford

Cumulative Effect

In addition to the Project turbines, turbines from the proposed Republic and Seneca Wind Farms have also been added to the view in this simulation. With the addition of these Projects, only one additional turbine is visible in the background on the far right side of the view. This turbine is barely noticeable due to its distance from the viewer, and has no impact on the scenic quality of this view. Due to their proximity to the viewer, the middle ground turbines associated with the Emerson Creek Wind Farm remain the focal points and character-defining features on this view.

Viewpoint 31 (Appendix D – Sheets 5-7)

Inset 14: Existing view from Memorial Reservoir, City of Norwalk

Existing Conditions

Viewpoint 31 is located along the shoreline of Memorial Reservoir in the City of Norwalk. This viewpoint is located in the City/Village and Suburban Residential LSZ, approximately 8.24 miles from the nearest proposed turbine that would be visible. The existing view to the northwest features the flat, calm surface of the reservoir, which is enclosed by a man-made dike lined with rip rap. Part of this of this dike extends through the center of the reservoir, bisecting the waterbody into two halves. A paved footpath runs along the top of the dike to the opposite shoreline. The tops of some man-made structures and a communication tower are visible beyond the reservoir in the center of the view, but most background features are screened by the built-up shoreline and mature forest vegetation. The presence of the water adds an element of visual interest to the view, but the engineered/man-made quality of the reservoir results in only moderate scenic quality.



Inset 15: Visual simulation of proposed view from Memorial Reservoir, City of Norwalk

Proposed Project

With the proposed Project in place, portions of three turbines are barely visible above the background tree line in the center of view. Most of the turbines are screened from view and only portions of the blade tips are visible above the tree line. From this distance, the turbines are nearly imperceptible and could just as easily be perceived as branches of adjacent trees. They do not present appreciable scale contrast and are subordinate to the existing communication tower in the background. The contrast of the turbines against the sky is further diminished by the white color of the sky in the background. More solidly overcast conditions would likely further reduce turbine visibility, while clearer skies may allow the turbines to appear more noticeable in the landscape. Additionally, the turbines may become more visible to the average viewer when they are in motion. However, their distance from the viewer and screening by existing features will limit their prominence, and the reservoir and constructed footpath will continue to be the focal points of the view. The Project's overall impact on landscape character and scenic quality is insignificant at this viewpoint.

Viewpoint 44 (Appendix D – Sheets 8-11)

Inset 16: Existing view from Bellevue Reservoir, Township of Sherman

Existing Conditions

Viewpoint 44 is located next to Bellevue Reservoir in the Township of Sherman. This viewpoint is representative of the Rural Residential/Agricultural LSZ and is located approximately 0.5 miles from the nearest proposed turbine. The existing view to the south-southwest from this location looks out from the grassy brush-lined embankment surrounding the reservoir onto an open, plowed agricultural field. The plowed field is backed by an unharvested crop field and a farm complex, including red barns and steel grain bins, in the middle ground on the righthand side of view. The field continues into the background, where it is backed by a line of trees that extends across the view and blocks views of more distant landscape features. The dark band of trees forms an abrupt horizon line where it meets the light, cloudy sky. The trees, field edge, plow furrows, low buildings, and level topography all create strong horizontal lines in the landscape. The agricultural fields and farm complex give the view a strong rural character and moderate scenic quality.



Inset 17: Visual simulation of proposed view from Bellevue Reservoir, Township of Sherman

Proposed Project

With the proposed Project in place, numerous turbines have been added to the view. Two foreground turbines on the left side of the view are prominent new features that present strong line, form and scale contrast with existing features of the landscape. This contrast is accentuated by the level horizontal lines of the land and horizon, and the proximity of the turbines to the viewer. Numerous additional turbines have also been added to the middle ground and background of the view. While these turbines present less scale contrast than the closer turbines, their large size is still apparent as they extend well above the tree line and into the sky. The abundance of turbines draws the viewers' attention and redefines the character of this view. Although the view retains a working agricultural component, its character is now defined by the presence of the wind farm.



Inset 18: Cumulative visual simulation of proposed view from Bellevue Reservoir, Township of Sherman

Cumulative Effect

This simulation illustrates the cumulative impact of the Emerson Creek Wind Farm in conjunction with the proposed Seneca and Republic Wind Projects. Addition of the Seneca and Republic Wind Projects to the viewpoint introduces more turbines to the background of the view. With all three projects in place, the extent of turbines across the horizon line does not significantly increase, but the density and overlap of turbines does. This adds a degree of visual clutter and increases the utilitarian character of the view. However, this represents a relatively minor, incremental change at this location, as the Seneca and Republic turbines are subordinate to those associated with the proposed Project. The resulting cumulative effect is the perception of a somewhat larger but contiguous wind farm.

Viewpoint 48 (Appendix D – Sheets 12-14)

Inset 19: Existing view from County Road 30 (Section Line Road 30 North), Township of Lyme

Existing Conditions

Viewpoint 48 is located on County Road 30 (Section Line Road 30 North), south of Opperman Road in Lyme Township. This viewpoint is representative of the Rural Residential/Agricultural LSZ and is located approximately 1.2 miles from the nearest proposed turbine. The existing view to the northeast from this location includes a harvested agricultural field in the foreground. The harvested field continues north until it meets an active cornfield that has not yet been harvested, forming a horizontal line in the middle of the view. The land rises gently to a thin line of trees that borders the opposite edge of the cornfield and forms the visible horizon. Red barns and steel grain bins are visible at the horizon on the right-hand side of the view. These features are illuminated by low angle sunlight which accentuates their contrast with the dark, cloudy sky. The existing view is open and expansive and has a strong rural feel. The composition of the landscape is simple and orderly, but lacks vegetative or topographic variability, resulting in moderate scenic quality.



Inset 20: Visual simulation of proposed view from County Road 30 (Section Line Road 30 North), Township of Lyme

Proposed Project

With the proposed Project in place, the foreground remains unchanged, and continues to have an open, expansive feel. However, four turbines can now be clearly seen along the horizon in the middle ground, and several more distant turbines rise above the horizon line. The turbines are illuminated by the low sun, which results in strong color contrast with the dark sky. The four closest towers become dominant focal points in the view, and their vertical line contrasts with level, horizontal lines of the landscape. However, the turbines do not appear to alter the working agricultural character of the LSZ. Due to their proximity to an existing farm complex and position along the horizon, the addition of the Project to the landscape does not diminish the composition or scenic quality of the existing view.

Cumulative Effect

No additional turbines from either the Seneca or Republic proposed projects are visible within this simulation.

Viewpoint 55 (Appendix D – Sheets 15-17)

Inset 21: Existing view from County Highway 64 (Pontiac Section Line Road), Township of Sherman

Existing Conditions

Viewpoint 55 is located along County Highway 64 in the Township of Sherman. This viewpoint is representative of the Rural Residential/Agricultural LSZ and is located approximately 0.2 mile from the nearest proposed turbine. The existing view to the northeast from this location looks out onto a largely undeveloped rural landscape. The foreground includes a relatively flat creek (an unnamed tributary of Frink Run) with well-defined banks lined with herbaceous vegetation. The creek curves to the north and proceeds outside of the frame of view. The bank of the creek slopes upward to the edge of an active corn field, which comprises the middle ground of the view. Beyond the field, a mostly continuous line of mature trees forms the background and blocks views of more distant landscape features. The corn field and tree line are illuminated by the low afternoon sun, which gives them a glowing earth-toned color that contrasts with the cloudy, blue-gray sky. There are no man-made features present in the view, and although the active corn field provides a working agricultural character, the presence of the creek and the proximity of the tree line makes the view feel more naturalistic and enclosed. Although it has a peaceful rural character, lack of focal points and topographic variability result in moderate scenic quality.



Inset 22: Visual simulation of proposed view from County Highway 64 (Pontiac Section Line Road), Township of Sherman

Proposed Project

With the addition of the Project to the landscape, multiple turbines are now prominent additions to the foreground, middle ground, and background of this view. The turbines become dominant new focal points that redefine the character of the view. Due to their proximity to the viewer, the turbines present strong line, form, and scale contrast with vegetation and landform in the view. The turbines occupy much of the open sky, and their direct illumination by the sun results in strong color contrast. Scale contrast is particularly notable with the nearest turbine which is significantly taller than the adjacent forest vegetation. The turbines in the background of the view are largely shielded by the woodlot, and views of these turbines are mostly restricted to portions of the blades. Nevertheless, the foreground and middle ground turbines now define the character of the view and introduce a new utilitarian land use. The Project transforms the rural farmland to the center of a windfarm and has a substantial impact on scenic quality. This impact is tempered, however, by the relatively small number of viewers and lack of sensitive resources at this location.

Cumulative Effect

No additional turbines from either the Seneca or Republic proposed projects are visible within this simulation.

Viewpoint 68 (Appendix D – Sheets 18-21)

Inset 23: Existing view from State Route 99, Township of Greenfield

Existing Conditions

Viewpoint 68 is located along State Route 99 in the Township of Greenfield. It is located in the Rural Residential/Agricultural LSZ, approximately 2.1 miles from the nearest proposed turbine that would be visible in this view. The existing view to the west looks out onto a broad expanse of open, harvested agricultural fields. The fields have a slightly rolling character, and extend to a cluster of agricultural buildings in the center of the view. The buildings are backed by a band of trees, interspersed with occasional residential and agricultural structures, that forms the visible horizon line. An overhead utility line is faintly visible in front of the tree line. The band of trees separates broad areas of open field and sky and creates a strong horizontal line across the view. The sky is mostly unbroken by man-made structures, but the lack of focal points or variability in the landscape result in relatively low scenic quality.



Inset 24: Visual simulation of proposed view from State Route 99, Township of Greenfield

Proposed Project

With the proposed Project in place, numerous turbines have been added along the horizon. These turbines extend above the tree line and into the sky. However, due to their distance from the viewer, they do not significantly alter the horizontal lines and feeling of open space that characterize the existing view. The turbines nearest to the viewer appear dark against the light sky. The more distant turbines present far less scale and color contrast, and are partially screened by the tree line. Although they do not appear entirely out of place in the working landscape typical of the Rural Residential/Agricultural LSZ, the turbines add visual clutter and alter the rural character of the view. However, relatively low baseline scenic quality limits the Project's overall visual impact.



Inset 25: Cumulative visual simulation of proposed view from State Route 99, Township of Greenfield

Cumulative Effect

In this simulation, turbines from the proposed Republic and Seneca Wind Farms have been added to the view, along with the proposed Emerson Creek Wind Farm. With the addition of these projects, three additional turbines can be seen in the background above the tree line on the right-hand side of view. The blade tips of several turbines are also visible protruding above the tree tops. While the additional features are visible, they are barely noticeable in the background amongst the more dominant Emerson Creek Wind Farm turbines. The overlapping blade tips that are visible above the tree line may become more noticeable when they are in motion, but the cumulative effect of the three projects will be relatively minor due to the abundance of turbines and their distance from the viewer.

Viewpoint 82 (Appendix D – Sheets 22-24)

Inset 26: Existing view from the intersection of County Road 78 (Willard West Road) and County Road 75 (Willoughby Road), Township of Richmond

Existing Conditions

This viewpoint is located at the intersection of County Road 78 and County Road 75 in the Township of Richmond. It is representative of the Rural Residential/Agriculture LSZ and is located approximately 0.6 mile from the nearest proposed turbine. The existing view to the southwest looks out onto an open green field in the foreground that transitions to a mosaic of harvested agricultural fields, trees and agricultural structures. A small overhead utility line traverses the view, but is screened on the righthand side by a small woodlot that serves as a focal point in the view. The fields have a gently undulating topography that extends to a dark band of trees that span the frame of view and form the visible horizon. The lack of foreground features in combination with the broad fields and unbroken sky result in open, expansive feel. The overall scenic quality of this view is moderate.



Inset 27: Visual simulation of proposed view from the intersection of County Road 78 (Willard West Road) and County Road 75 (Willoughby Road), Township of Richmond

Proposed Project

With the proposed Project in place, two turbines have been added to the near middle ground and are prominent additions to the view. While the base of one turbine is screened by a woodlot, the viewer is afforded a nearly complete view of the tower and blades of both turbines. At this distance, the turbines present strong line, form, and scale contrast with the existing landscape features. They appear much larger than the existing vegetation and utility structures in the view, and their addition to the landscape breaks up the open space that characterized the existing view. The turbines extend well into the open sky, but their contrast against the sky is somewhat muted under the existing cloudy conditions. Color contrast will likely be stronger under clearer conditions. The Project does not appear out of place within the working landscape typical the Rural Residential/Agricultural LSZ. However, the size of the turbines makes them the dominant features of the view and results in a more utilitarian character. Overall impact on scenic quality is moderate.

Cumulative Effect

No additional turbines from either the Seneca or Republic proposed projects are visible within this simulation.

Viewpoint 89 (Appendix D – Sheets 25-27)

Inset 28: Existing view from Bellevue Reservoir, City of Bellevue

Existing Conditions

Viewpoint 89 is located adjacent to the Bellevue Reservoir in the City of Bellevue. This view is located at the outskirts of the City/Village LSZ where it is adjacent to the Suburban Residential LSZ, approximately 0.7 mile from the nearest proposed turbine. However, the existing view to the southeast looks out onto a rural residential/agricultural landscape that includes a patchwork of harvested and unharvested fields. The harvested field in the immediate foreground is separated from an unharvested field in the middle ground by an agricultural swale with brushy vegetation. Beyond the second field, residences, agricultural buildings, and an overhead utility line can be seen at various distances, although mature trees partially screen views of the residential properties. In the background, an irregular band of woodlots and hedgerows, interspersed with residential and agricultural structures, form the visible horizon. Overall scenic quality is low to moderate.



Inset 29: Visual simulation of proposed view from Bellevue Reservoir, City of Bellevue

Proposed Project

With the proposed Project in place, numerous turbines have been added to the middle ground and background of the view. The turbines present moderate to strong line, form, and scale contrast with the existing landscape features. They extend well into the sky, but color contrast is minimized under the overcast conditions illustrated in this photograph. The random arrangement of the turbines across the landscape is consistent with the arrangement of other man-made features, and the Project feel compatible with the working agricultural landscape. The closer turbines introduce strong new focal points, novel forms, and a sense of motion to the view. The turbines alter the character of the view, but have a relatively minor impact on scenic quality.

Cumulative Effect

No additional turbines from either the Seneca or Republic proposed projects are visible within this simulation.

Viewpoint 135 (Appendix D – Sheets 28-31)

Inset 30: Existing view from Republic Park on State Route 162 (E. Jefferson Street), Village of Republic

Existing Conditions

Viewpoint 135 is located within Republic Park on State Route 162 in the Village of Republic. This view is located in the Suburban Residential LSZ, approximately 9.3 miles from the nearest proposed turbine that would be visible from this location. The existing view to the east-northeast features a mowed, grassy lawn and a softball field. The lawn is mostly clear of other vegetation with the exception of one tree in the foreground, which serves as a focal point in this view. Behind the tree, man-made features include a yellow foul pole, fencing, a backstop, bleachers and a small white utility building. The fencing divides the softball field from an adjacent harvested agricultural field in the middle ground. The field proceeds over level topography to a band of dark trees that decreases in density from north to east (left to right). On the righthand side of view, the trees dissipate, and more distant fields and woodlots are visible in the background. An overhead utility line is faintly visible bordering an adjacent roadway. The existing view is well-maintained but lacks elements of visual interest. Overall scenic quality at this viewpoint is relatively low.



Inset 31: Visual simulation of proposed view Republic Park on State Route 162 (E. Jefferson Street), Village of Republic

Proposed Project

With the proposed Project in place, there is minimal change to the view. Portions of four turbines can be seen behind the tree line, but at this distance are nearly imperceptible. Only portions of the blades are visible above the background vegetation but are difficult to detect among the surrounding branches and the backstop. Under existing sky conditions, the light gray color of the blades offers minimal contrast with the overcast sky, although the blades may become more noticeable under clearer conditions or when they are in motion. However, it is likely that the average viewer will not notice the presence of the Project in this view. Overall impact on landscape character and scenic quality is insignificant.



Inset 32: Cumulative visual simulation of proposed view Republic Park on State Route 162 (E. Jefferson Street), Village of Republic

Cumulative Effect

In this simulation, turbines from the proposed Republic and Seneca Wind Projects have been added to this view. Portions of seven additional turbines are now visible, and these additional turbines are substantially more visible than the Emerson Creek Wind Farm turbines. Although portions of the blades and towers are screened by existing vegetation, the Republic and Seneca Wind Project turbines attracts the viewer's eye, drawing away any attention the distant Emerson Creek Wind Farm turbines might attract. While the additional turbines increase visual impact due to their increased quantity and greater proximity to the viewer, cumulative impact is minimal as the Emerson Creek Wind Farm turbines are almost imperceptible.

Viewpoint 138 (Appendix D – Sheets 32-35)

Inset 33: Existing view from State Route 101 (Portland Road), Township of Adams

Existing Conditions

Viewpoint 138 is located at Butternut Ridge Church of Christ and Cemetery on State Route 101 (Portland Road) in Adams Township, south of County Line Road (County Road 62), approximately 7.8 miles from the nearest proposed turbine. The existing view to the east from this location is typical of the Suburban Residential LSZ. A small portion of State Route 101 can be seen in the immediate foreground, backed by a mix of unharvested and recently harvested grain fields. A large red tractor towing a farming implement is located on the left-hand side of the view, adjacent to an agricultural field. A discrete cluster of conifers on the eastern edge of the field form a focal point in the middle of the view. Behind this cluster, the horizon is lined by a continuous row of trees at various distances from the viewer. A hedgerow of deciduous trees in the middle ground on the left, gives way to more distant woodlots on the right. The broad expanse overcast sky is interrupted by a roadside utility line that spans the view. Overall scenic quality at this viewpoint is low to moderate.



Inset 34: Visual simulation of proposed view from State Route 101 (Portland Road), Township of Adams

Proposed Project

With the proposed Project in place, the upper portions of several turbines are visible above the distant tree line on the right. Under present conditions, there is minimal color contrast between the turbines and the overcast sky which minimizes their visibility. However, this may not be the case under clearer conditions and/or when the turbines are in motion. Regardless, the distance of the turbines from the viewer, and the limited portion of the view they occupy, minimize their perceived scale and land use contrast. The working agricultural fields remain the dominant, character-defining components of the view. The addition of the Project has a minimal impact on overall scenic quality at this viewpoint.



Inset 35: Cumulative visual simulation of proposed view from State Route 101 (Portland Road), Township of Adams

Cumulative Effect

This simulation shows the cumulative impact of the proposed Project in conjunction with the proposed Seneca and Republic Wind Projects. From this viewpoint, the wind turbines from the three proposed projects are indistinguishable. They occur in the same location and at approximately the same distance in this view, and blend together as one project. Under current sky conditions, the larger number of turbines is difficult to perceive, although this may be more obvious under clearer atmospheric conditions. Due to their distance from the viewer and compatibility with the Emerson Creek Wind Farm turbines, the cumulative impact of the additional wind projects is minimal at this viewpoint. The existing character and scenic quality of the view is largely unchanged.

5.3 Nighttime Impacts

Representative nighttime photos of an operating wind farm with the same red L-864 aviation warning lights as proposed for the Emerson Creek Wind Farm are included in Figure 10. The photos illustrate the appearance of these lights in a dark sky, and the typical type of nighttime visual impact associated with the turbines' FAA aviation warning lights. Although representative of the appearance of the FAA warning lights, it should be noted that new regulations since the photos were obtained require that the turbines associated with the Emerson Creek Wind Farm be equipped with two lights per turbine.

As shown in these photos, the contrast of the aviation warning lights with the night sky can be strong in dark, rural settings. Viewer attention is drawn by the flashing of the lights, and they present strong contrast with the night sky. As indicated by the viewshed analysis, views of the FAA warning lights on the Emerson Creek Wind Farm turbines will generally be well screened for the cities and villages within the study area. Other light sources in these more developed areas will also reduce the impact of any warning lights that are visible. Nighttime visual impact will most likely be experienced by viewers in the rural/agricultural portions of the study area. It is worth noting that the visual study area includes communication towers, grain elevators, quarry equipment and water towers equipped with FAA warning lights. While generally not impacting roads and other public viewpoints at night, turbine lighting may be perceived negatively by residents that currently experience dark night skies and who may be able to view these lights from their homes and yards.

5.4 Cumulative Visual Impacts

Per the requirements of Ohio Administrative Code Chapter 4906-04-08(D)(4) for the Ohio Power Siting Board, the potential cumulative visual effect of the Emerson Creek Wind Farm, along with other wind energy projects currently operating or proposed in the surrounding region, must be considered. Cumulative visual impacts are two or more individual visual effects which, when taken together, are significant or that compound or increase other similar visual effects. This section addresses the potential cumulative visual impacts that may arise from interactions between the Emerson Creek Wind Farm and the proposed Republic and Seneca Wind Farms. No other wind projects are currently operating or proposed in the area. The Republic Wind Farm would fall almost entirely within the Emerson Creek Wind Farm visual study area, while roughly half of the Seneca Wind Farm would occur within the study area, with the nearest turbines of each project occurring 0.9 and 0.6 mile, respectively, from the Emerson Creek Wind Farm Project area (as measured between the nearest turbines in each project).

To evaluate the potential cumulative visual impact of multiple wind power projects within the study area, cumulative viewshed analyses were conducted. The 10-mile radius DSM viewshed analysis for the Emerson Creek Wind Farm

(based on maximum blade tip height) was overlaid on viewshed analyses prepared for the other two proposed wind farms (Seneca and Republic). All viewsheds employed the same methodology as described in Section 4.1. Data on turbine locations and dimensions at the other projects were based on publicly available layout and turbine height information included in each project's respective OPSB submission, or from the developer. The 10-mile radius viewsheds for the proposed projects were then plotted on a base map, and areas of viewshed overlap identified. Results of the cumulative viewshed analysis of the three proposed wind projects is presented in Figure 8 and Table 6. This analysis is conservative in that it assumes all turbines from all the proposed projects are built, including spare locations. All proposed turbines from all proposed projects will not be constructed, but until it is known which turbines will and will not be constructed, the analysis conservatively models all turbines.

Table 6. Cumulative Viewshed Analysis Results

Total Number of Turbines Potentially Visible ¹	Blade Tip – Structures and Vegetation	
	Square Miles ²	% of Study Area
0	331.1	35.0
1-46	345.7	36.5
47-92	170.3	18.0
93-138	70.0	7.4
139-184	21.7	2.3
185-231	7.2	0.8
Total Visible	614.7	65.0

¹The cumulative viewshed analysis accounts for proposed turbines from the Seneca Wind project (94 turbines with maximum blade tip heights ranging from 453 feet to 649 feet tall) and the proposed Republic Wind Farm (50 turbines with a maximum blade tip height of 602 feet) as well as the 87 turbines proposed for the Emerson Creek Wind Farm (with a maximum blade tip height ranging from 602 feet to 654.5 feet).

²The cumulative viewshed analysis area (within 10 miles of the Emerson Creek Wind Farm Project Area) includes approximately 946.0 square miles.

As shown in Table 6, the cumulative viewshed analysis indicates that approximately 35% of the 10-mile visual study area will not have views of any proposed wind turbines considered as part of this evaluation, due to screening provided by topography, vegetation and/or structures. The remaining 65% of the visual study area will potentially have views of turbines from one or more of the proposed projects. The majority of this area of potential visibility (36.5% of the 10-mile visual study area), will potentially have views of between 1 and 46 wind turbines. As visibility goes over 93 turbines, the percentage of the study area with potential turbine visibility drops off quickly. Areas with potential visibility of 93-138 turbines account for 7.4% the study area, areas with potential views of 139-184 turbines account for 2.3% of the study area, and areas with potential views of 185-231 turbines account for only 0.8% of the study area. The locations

of greatest cumulative visibility are mainly located in the Rural Residential/Agricultural Zone where open fields offer expansive views of the landscape in multiple directions. Areas with the potential for cumulative views of turbines from multiple projects are available throughout the study area, but are generally concentrated in the western portion of the study area.

As described in Sections 5.2 of this VIA, the visibility and visual effect of wind turbines within the study area will vary based on viewing distance, viewer orientation, and the number of turbines visible, as well as the potential screening effects of vegetation and structures. If turbines from the other proposed wind projects are visible from a vantage point within the Emerson Creek Wind Farm, they will generally be perceived as part of a larger contiguous wind project. The same will be true when the proposed Emerson Creek Wind Farm is viewed from any of the other proposed wind farms, or when the proposed wind farms are viewed from outside any of the project areas. However, as indicated by the fieldwork results and review of the visual simulations, in areas dominated by more concentrated human settlement (such as the City/Village and Suburban Residential Zones) distance of the projects from the viewer and/or screening provided by foreground vegetation and structures will limit open views of the proposed projects. Thus, views of multiple turbines within the proposed Project, let alone those from other proposed wind farms, are anticipated to be rare within these zones.

As indicated above, the zone where cumulative project visibility is most likely to occur is the Rural Residential/Agriculture LSZ. However, many of these turbines will be viewed from distances over 4.0 miles away, which places these features in the background, where their visibility and visual impact will often be reduced by screening provided by intervening hedgerows and woodlots. In some places a large number of turbines will be viewed at various distances and in multiple directions. Consequently, there may be locations where the cumulative effect of the proposed wind projects is substantial. However, these instances will be relatively rare and will affect a limited number of VSRs and viewers. These viewers are likely to have varying opinions regarding the visual effect of wind turbines based on individual property location and overall attitude toward wind power. Therefore, perceived visual impact resulting from views of multiple wind farms will vary greatly. Once one of the proposed projects is built, the addition of new turbines to a working agricultural landscape where these features already exist is not expected to have a significant adverse cumulative visual impact within the majority of the study area.

6.0 *Conclusions*

The VIA for the Emerson Creek Wind Farm allows the following conclusions to be drawn:

1. Viewshed mapping indicates that the Project has the potential to be visible from slightly more than half of the 10-mile radius visual study area. In most locations where the Project will be visible, less than half of the proposed turbines are likely to be seen, with only 17.2% of the study area having predicted visibility of over 34 turbines (out of a total of 87 proposed). This modeling analysis is conservative in that it assumes all 87 turbines are built even though only 66-71 of the turbines will be constructed. The greatest potential for unscreened views of the Project will be in rural residential and agricultural areas. In more densely developed areas, most of the proposed turbines will be at least partially screened by trees and structures.
2. Field review of the Project area confirmed that the lack of elevated topographic features coupled with intervening vegetation (i.e. hedgerows and woodlots along the borders of agricultural fields) effectively screens long-distance views of the Project and limits visibility of the Project to foreground and middle ground views (i.e., generally under 5 miles).
3. Views from the defined LSZs vary in quality and availability. The Rural Residential/Agricultural LSZ has the highest potential for open views of the Project, but generally contains a low density of viewers and sensitive sites. Moreover, the visual characteristics of the working agricultural landscape are generally less sensitive to Project-related visual change, limiting the adverse effect of the Project on this zone. Conversely, the City/Village LSZ has the largest concentration of viewers and sensitive sites. However, views of the Project will generally be well screened by intervening structures and vegetation within these more densely populated areas. Despite the larger number of viewers and sensitive sites, there will not be a significant adverse visual effect on this zone due to the lack of available open, long-distance views towards the Project area. Views from the Suburban Residential Zone can be variable depending upon the location of the viewpoint within the visual study area and its proximity to the other LSZ types. Views toward the Project from suburban residential areas located on the outskirts of City/Village zones may be screened by adjacent structures and vegetation, while those located directly adjacent to agricultural fields may have the opportunity for open outward views toward the Project. This means that certain viewpoints may experience a visual effect, while others will not. The Transportation Corridor LSZ provides substantial opportunities for open views towards the Project, but these views will be intermittently screened by a mix of vegetation and buildings. In general, the lack of sensitive sites within this zone, limited view duration and/or limited viewer focus and sensitivity to visual change will limit the significance of any visual effect on the major transportation corridors within the study area.

4. Sensitive sites identified and evaluated in the study area varied in the availability of open views toward the Project area. The concentration of sensitive sites identified within the visual study area are found in the cities and villages. Field review confirmed that visibility from the majority of sensitive sites in these areas will be partially to fully screened by the surrounding built environment. Therefore, impact on scenic quality and user enjoyment of these resources should be minimal.

The three NRHP-listed sites that are significant for their visual setting (John Wright Mansion, Heter Farm, and Hunts Corners) were evaluated in the field, and it was determined that views of the Project may be available from the periphery of the John Wright Mansion site and Heter Farm. However, in general views of the Project from these sites will be at least partially screened by structures and vegetation. The presence of the Project in background views from John Wright Mansion and Heter Farm will not change the visual character or scenic quality at either of these two sites. Alternatively, Hunts Corners is located in proximity to the Project and as such will have foreground, middle ground, and background views of turbines. While residential structures and associated suburban yard plantings will partially screen portions of the views, open views toward the Project will be available in multiple directions. Depending on the viewers expectations and the number of visible turbines the project may have an effect on the scenic quality of the landscape at this location.

Visibility from the State Wildlife Areas will be available from intermittent areas where vegetative screening is lacking and where adjacent road corridors align with the Project. Internal views and popular activities at these sites will experience little to no effect from the visual change associated with the proposed Project. These conditions are similar to those found at the various nature preserves as well, with the same conclusion.

The trails and multi-use paths found throughout the study area have the greatest potential to experience visual change out of the identified VSRs, due to the characteristics of such activities and the presence of the Project within all of the different LSZs and distance zones. However, it is these same characteristics and activities that make these trail systems less sensitive to such visual change.

The water resources located throughout the visual study area experience different levels of visual change based on available visibility, sensitivity of the individual resource and concentration of use. The visual change from the installation of the proposed Project will not significantly alter the purpose or enjoyment of these resources.

5. Photographic simulations of the proposed Project indicate that the visibility and visual impact of the wind turbines will be highly variable based on the extent of natural screening, the presence of other man-made features in the

view, and distance of the viewer from the Project. Within agricultural areas, and at the edges of cities and villages, the simulations confirm that woodlots and hedgerows generally provide a backdrop in views across open fields. This vegetation in combination with the level topography will effectively limit views of more distant turbines in many locations. While the vegetation limits the number of distant turbines visible, and the perceived density of the Project, in many locations multiple turbines are still visible at various distances from the viewer. In areas where open views or foreground and near middle ground turbines will be available, the turbines will become prominent new focal points in the view.

6. The VIA indicates that the Project's overall contrast with the visual/aesthetic character of the area will also be variable. Insignificant to moderate contrast was noted for viewpoints where existing vegetation or structures provide substantial screening, where distance reduces the turbines' perceived line and scale contrast with the landscape, or where the existing view has a low baseline scenic quality. More substantial contrast was noted where unscreened foreground and near middle ground views of turbines are available, where notable contrast in size between turbines and existing landscape elements is evident, or where numerous visible turbines result in a perceived change in land use and increased visual clutter. The compatibility of the Project with the working agricultural character of the landscape that makes up the majority of the visual study area will serve to limit the Project's visual impact in many locations. Based on experience with currently operating wind power projects elsewhere, public reaction to the Project is likely to be highly variable based on proximity to the turbines, the affected landscape, and personal attitude of the viewer regarding wind power. Many people find the clean lines and sculptural form of wind turbines to be attractive, and as Stanton (1996) notes, although a wind power project is a man-made facility, what it represents "may be seen as a positive addition" to the landscape.
7. Based upon the nighttime photos/observations of existing wind power projects, the red flashing lights on the turbines could result in a potential nighttime visual impact. The actual significance of this impact from a given viewpoint will depend on how many lighted turbines are visible, what other sources of lighting are present in the view, the extent of screening provided by structures and trees, and nighttime viewer activity/sensitivity. However, night lighting could be somewhat distracting and have an adverse effect on rural residents that currently experience dark nighttime skies, as discussed in Section 5.3. It should be noted that nighttime visibility/visual impact will be limited in cities, villages, and along highways where existing lights already compromise dark skies and compete for viewer attention.
8. The cumulative visibility and visual effect associated with the proposed Seneca Wind Project and Republic Wind Project is expected to be relatively minor when added to the proposed Project. Overlapping study areas contain the overall footprint of the combined projects and works to visually make the project as one. The cumulative

potential for views of any project will be greater, however the duration or view and concentration of turbines within that view will remain visually the same as with just the proposed Project.

7.0 Mitigation

Mitigation options are limited, given the nature of the Project and its siting criteria (tall structures typically located in open fields). However, various mitigation measures were considered. These included the following:

- A. Screening. Views of the proposed turbines from cities and villages, where the majority of the residents and sensitive historic sites are located, are typically well screened by intervening structures and trees. Middle ground and background views in the more rural portions of the study area, including views from sensitive sites, are generally at least partially screened by hedgerows and woodlots. Due to the height of individual turbines and the geographic extent of the proposed Project, screening of individual turbines with earthen berms, fences, or planted vegetation will generally not be effective in reducing Project visibility or visual impact.
- B. Relocation. The proposed turbines will comply with various siting and set-back requirements that help to reduce their visual impact. However, because of the number of individual turbines proposed, and the variety of viewpoints from which they may be visible, additional turbine relocation will generally not significantly alter visual impact. Where visible from sensitive resources within the study area, (e.g., State Wildlife Areas, historic sites, and heavily used roadways), relocation of individual machines would have little effect on overall visual impact. Throughout the study area, available views of the Project include different turbines at different distances from the viewer. Therefore, turbine relocation would generally not be effective in mitigating visual impacts.
- C. Camouflage. The white color of wind turbines as mandated by the FAA to eliminate the need for day time lighting minimizes contrast with the sky under most conditions, especially when viewed at distance against the horizon. Consequently, use of this color is an appropriate means of limiting visual impact. The size and movement of the wind turbine blades prevents more extensive camouflage from being a viable mitigation alternative (i.e., they cannot be made to look like anything else). Neilson (1996) notes that efforts to camouflage or hide wind farms generally fail, while Stanton (1996) feels that such efforts are inappropriate. She believes that wind turbine siting "is about honestly portraying a form in direct relation to its function and our culture; by compromising this relationship, a negative image of attempted camouflage can occur."
- D. Low Profile. A significant reduction in turbine height is not possible without significantly decreasing power generation. To offset this decrease, additional turbines would be necessary. There is not adequate land under lease to accommodate a significant number of additional turbines, and a higher number of shorter turbines

would not necessarily decrease Project visual impact. In fact, several studies have concluded that people tend to prefer fewer larger turbines to a greater number of smaller ones (Thayer and Freeman, 1987; van de Wardt and Staats, 1988). The VIA evaluated the maximum number of the tallest turbine model under consideration for this Project. The actual project that is built will include fewer turbines and/or somewhat smaller turbines. The visual impact of the electrical collection system is being minimized by installing the lines underground rather than on above-ground poles.

- E. Lighting. Turbine lighting will adhere to FAA regulations. Medium intensity red strobes will be used at night rather than white strobes or steady burning red lights.
- F. Maintenance. The turbines and turbine sites will be maintained to ensure that they are operating efficiently. Research and anecdotal reports indicate that viewers find wind turbines more appealing when the rotors are turning (Stanton, 1996, Pasqualetti et al., 2002).
- G. Offsets. Correction of an existing aesthetic problem within the viewshed is a viable mitigation strategy for wind power projects that result in significant adverse visual impact. Given the results of this study, removal of existing blighted/derelict structures to offset any potential adverse visual impact of the proposed Project does not appear to be warranted.

8.0 Literature Cited/References

Bowers, Sheri L. 1992. *Hunts Corners (93000896)*. National Register of Historic Places Registration Form. On file, Ohio State Historic Preservation Office, Columbus, Ohio. Available at: <https://www.ohiohistory.org/preserve/state-historic-preservation-office/mapping>.

Buckeye Trail Association. 2019. *Buckeye Trail*. Available at: <http://www.buckeyetrail.org/> (Accessed January 28, 2019).

Committee on Environmental Impacts of Wind Energy Projects (CEIWEP). 2007. Appendix D: A Visual Impact Assessment Process for Evaluating Wind-Energy Projects. In, *Environmental Impacts of Wind Energy Projects*, pp. 349-376. National Research Council, The National Academies Press, Washington, D.C.

Drown, W. and B. Howe. 1978. *Heter Historic Farm Grouping (79001941)*. National Register of Historic Places Registration Form. On file, Ohio State Historic Preservation Office, Columbus, Ohio. Available at: <https://www.ohiohistory.org/preserve/state-historic-preservation-office/mapping>.

Federal Aviation Administration (FAA). 2016. Advisory Circular: Obstruction Marking and Lighting, AC 70/7460-1L. (Chapter 13, 14).

Fenneman and Johnson. 1946. *Physiographic Divisions of the Conterminous U.S.* [shapefile]. Available at: <http://water.usgs.gov/lookup/getspatial?physio> (Accessed December 18, 2018).

Johannesen, Eric. 1973. *Wright, John Mansion (74001530)*. National Register of Historic Places Registration Form. On file, Ohio State Historic Preservation Office, Columbus, Ohio. Available at: <https://www.ohiohistory.org/preserve/state-historic-preservation-office/mapping>.

National Oceanic and Atmospheric Administration (NOAA). 2018. What is LIDAR? [website]. Available at: <https://oceanservice.noaa.gov/facts/lidar.html> (Accessed January 28, 2019). U.S. Department of Commerce.

National Park Service (NPS). 2014. *National Wild and Scenic River System in the U.S.* [website]. Available at: <https://nps.maps.arcgis.com/apps/MapJournal/index.html?appid=ba6debd907c7431ea765071e9502d5ac> (Accessed January 28, 2019). U.S. Department of the Interior.

NPS. 2018. *National Register of Historic Places* [website]. Available at: <https://www.nps.gov/subjects/nationalregister/index.htm> (Accessed January 28, 2019). U.S. Department of the Interior.

NPS. 2018a. *National Trails System* [website]. Available at: <https://www.nps.gov/subjects/nationaltrailssystem/index.htm> (Accessed January 28, 2019). U.S. Department of the Interior.

NPS. 2019. *Nationwide Rivers Inventory* [website]. Available at: <http://www.nps.gov/ncrc/programs/rtca/nri/index.html> (January 23, 2019). U.S. Department of the Interior, National Center for Recreation & Conservation.

NPS. 2019a. *Find a Park in Ohio* [website]. Available at: <https://www.nps.gov/state/oh/index.htm> (Accessed January 28, 2019). U.S. Department of the Interior.

NPS. 2019b. *National Heritage Area* [website]. Available at: <https://www.nps.gov/maps/full.html?mapId=01a03739-ab0c-40eb-bc3d-6791d3bb67fa> (Accessed January 28, 2019).

NPS. 2019c. *National Natural Landmarks in Ohio* [website]. Available at: <https://www.nps.gov/subjects/nl/landmarks/state.htm?State=OH> (Accessed January 28, 2019).

Ohio Bikeways. 2019. *The North Coast Inland Trail*. Available at: <https://www.ohiobikeways.net/ncit.htm> (Accessed January 28, 2019).

Ohio Division of Geological Survey. 1998. Physiographic regions of Ohio. Ohio Department of Natural Resources, Division of Geological Survey. Available at: https://geosurvey.ohiodnr.gov/portals/geosurvey/PDFs/Misc_State_Maps&Pubs/physio.pdf (Accessed December 18, 2018).

Ohio Department of Natural Resources (ODNR). 2012. *Wildlife Area Maps* [website]. Available at: <http://wildlife.ohiodnr.gov/wildlifeareas> (Accessed January 28, 2019).

ODNR. 2012a. *Milan Wildlife Area* [website]. Available at <http://wildlife.ohiodnr.gov/milan> (Accessed March 11, 2019).

ODNR. 2012b. *Willard Marsh Wildlife Area* [website]. Available at <http://wildlife.ohiodnr.gov/willardmarsh> (Accessed March 11, 2019).

ODNR. 2012c. *Resthaven Wildlife Area* [website]. Available at <http://wildlife.ohiodnr.gov/resthaven> (Accessed March 11, 2019).

ODNR. 2019. *Find a State Nature Preserve* [website]. Available at: <http://naturepreserves.ohiodnr.gov/findapreserve> (Accessed January 24, 2019).

ODNR. 2019a. *Erie Sand Barrens State Nature Preserve* [website]. Available at: <http://naturepreserves.ohiodnr.gov/eriesandbarrens> (Accessed March 11, 2019).

ODNR. 2019b. *Sheldon Marsh State Nature Preserve* [website]. Available at: <http://naturepreserves.ohiodnr.gov/sheldonmarsh> (Accessed March 11, 2019).

ODNR. 2019c. *Dupont Marsh State Nature Preserve* [website]. Available at: <http://naturepreserves.ohiodnr.gov/dupontmarsh> (Accessed March 11, 2019).

ODNR. 2019d. *Old Woman Creek State Nature Preserve & National Estuarine Research Reserve* [website]. Available at: <http://naturepreserves.ohiodnr.gov/oldwomancreek> (Accessed March 11, 2019).

Ohio Department of Transportation (ODOT). 2019. *Ohio Scenic Byways Program* [website]. Available at: <http://www.dot.state.oh.us/OhioByways/Pages/default.aspx> (Accessed January 28, 2019).

ODOT. 2019a. *Ohio's Bikeways & Trails* [website]. Available at: <http://www.dot.state.oh.us/divisions/Planning/SPR/bicycle/Pages/Bikeways.aspx> (Accessed January 28, 2019).

Ohio History Central. 2018. *Ohio's Physiographic Regions* [website]. Available at: http://www.ohiohistorycentral.org/w/Ohio%27s_Physiographic_Regions (Accessed December 18, 2018).

Ohio History Connection (OHC). 2019. *Online Mapping System* [website]. Available at: <https://www.ohiohistory.org/preserve/state-historic-preservation-office/mapping> (Accessed January 24, 2019).

OHC. 2019a. *Historical Markers* [website]. Available at: <https://www.ohiohistory.org/preserve/local-history-services/historical-markers> (Accessed January 28, 2018).

Ohio Power Siting Board (OPSB). 2009. *Ohio Administrative Code*. Chapter 4906-17 Application Filing Requirements for Wind-Powered Electric Generating Facilities. Available at: <https://www.opsb.ohio.gov/Rules/> (Accessed January 28, 2019).

Smarden, R.C., J.F. Palmer, A. Knopf, K. Grinde, J.E. Henderson and L.D. Peyman-Dove. 1988. *Visual Resources Assessment Procedure for U.S. Army Corps of Engineers*. Instruction Report EL-88-1. Department of the Army, U.S. Army Corps of Engineers. Washington, D.C.

Stanton, C. 1996. *The Landscape Impact and Visual Design of Windfarms*. ISBN 1-901278-00X. Edinburgh College of Art, Heriot-Watt University. Edinburgh, Scotland.

United States Department of Agriculture (USDA), National Forest Service. 1974. *National Forest Landscape Management*. Agricultural Handbook No. 462. Washington, D.C.

United States Department of Agriculture (USDA), National Forest Service. 1995. *Landscape Aesthetics, A Handbook for Scenery Management*. Agricultural Handbook 701. Washington D.C.

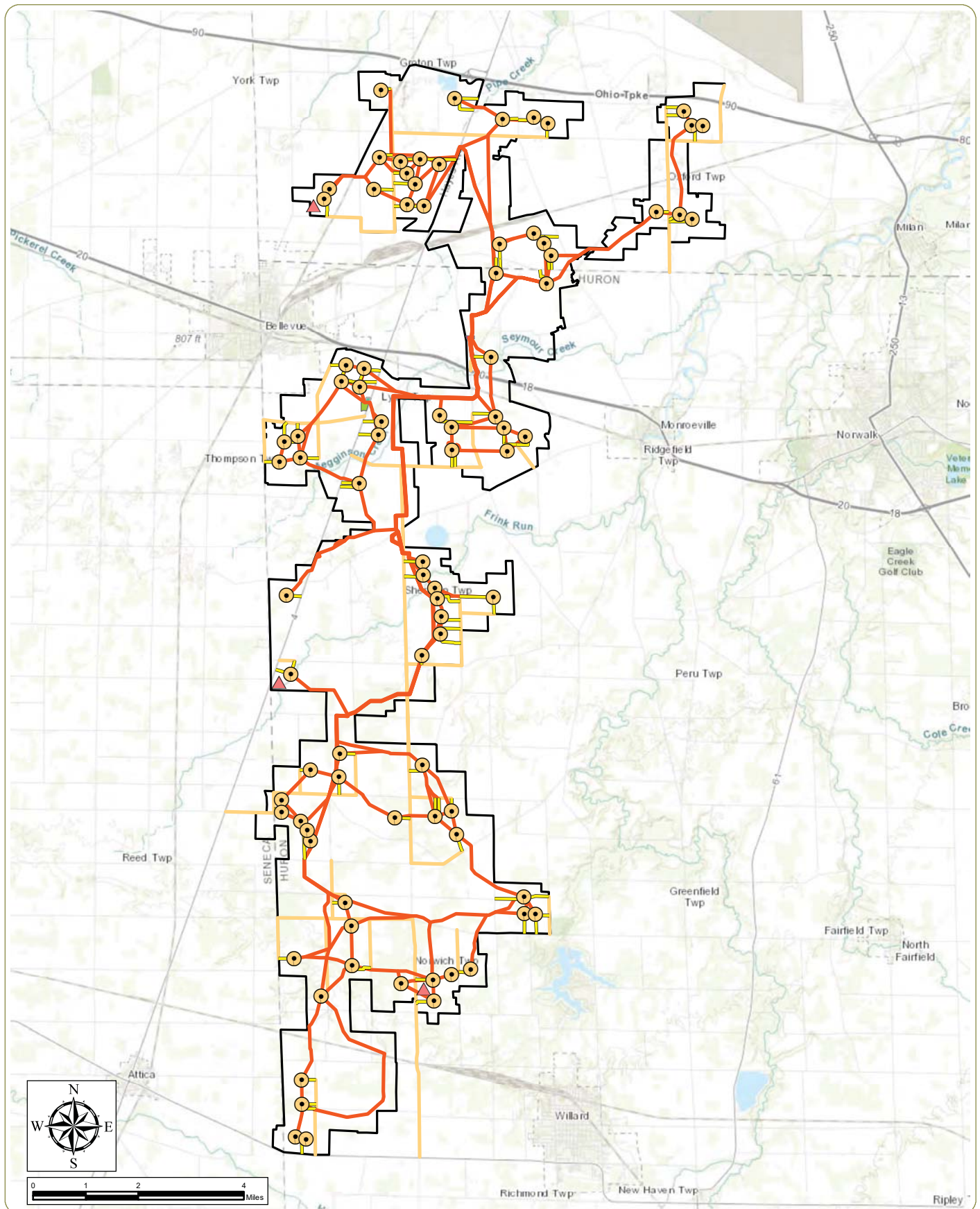
United States Department of the Interior (USDOI), Bureau of Land Management. 1980. *Visual Resource Management Program*. U.S. Government Printing office. 1980. 0-302-993. Washington, D.C.

United States Department of Transportation (USDOT), Federal Highway Administration. 1981. *Visual Impact Assessment for Highway Projects*. Office of Environmental Policy. Washington, D.C.

United States Fish and Wildlife Service (USFWS). 2019. *National Wildlife Refuge Locator* [website]. Available at: <http://www.fws.gov/refuges/refugeLocatorMaps/index.html> (Accessed January 28, 2019).

United States Forest Service (USFS). 2013. *Find National Forests and Grasslands* [website]. Available at: <http://www.fs.fed.us/recreation/map/finder.shtml> (Accessed January 28, 2019).

Figures












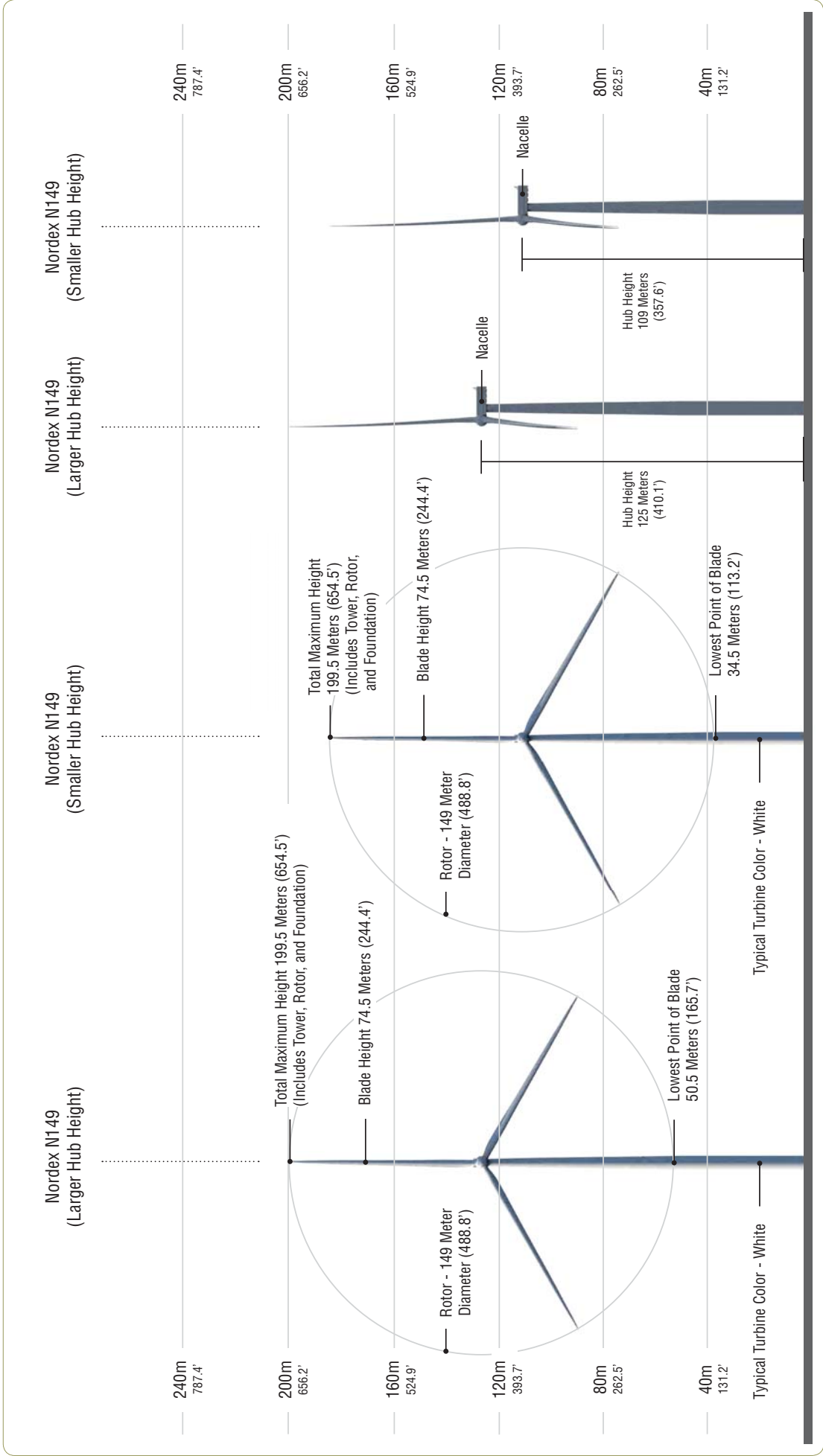
Emerson Creek Wind Farm

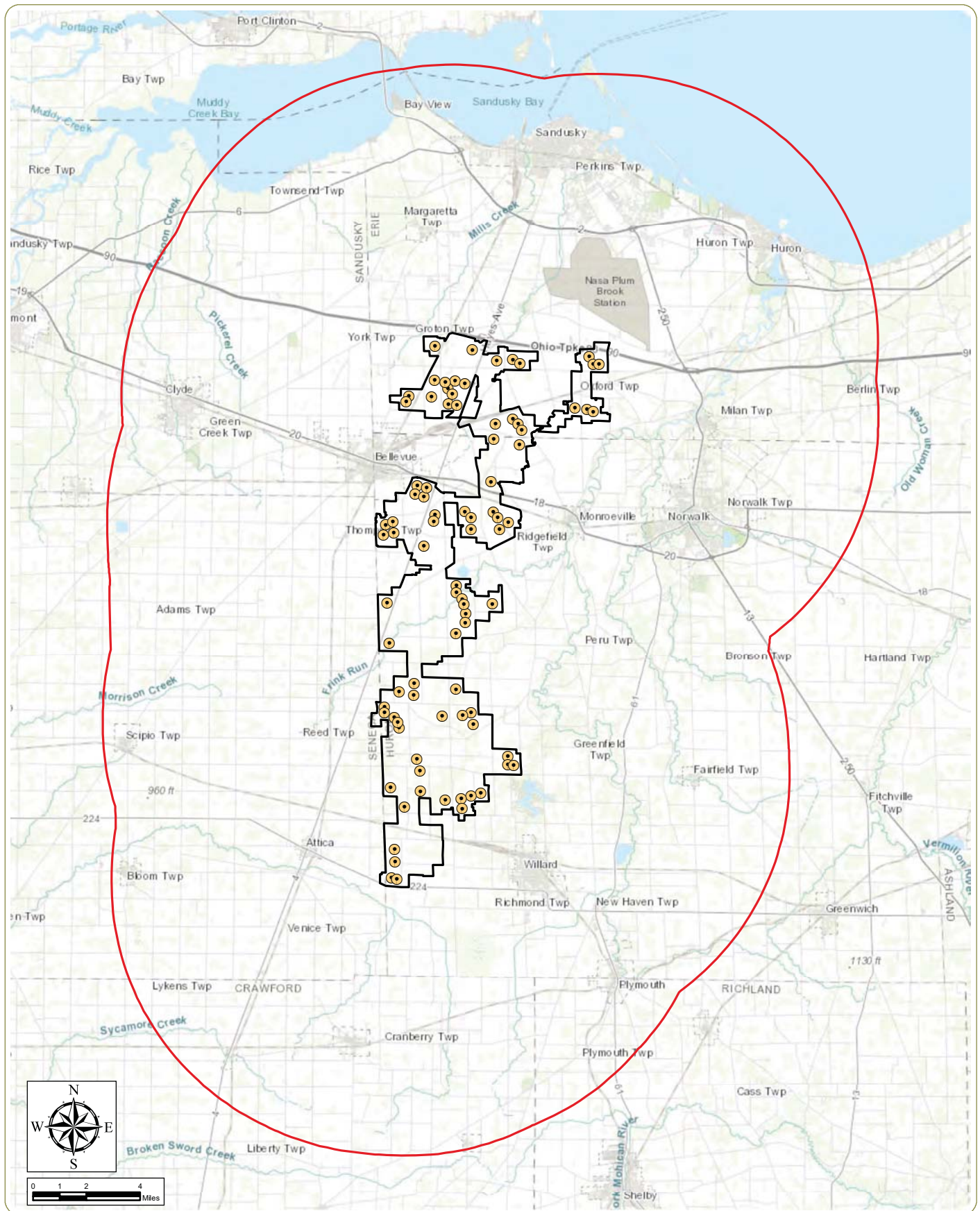
Erie and Huron Counties, Ohio

Figure 1: Proposed Project Layout

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- | | | | |
|---|-----------------------|---|-----------------------|
|  | Met Tower |  | Collection Substation |
|  | Proposed Wind Turbine |  | Laydown Yard |
|  | Access Road |  | O&M Facility |
|  | Collection Line |  | Project Boundary |
|  | Delivery Route | | |





Emerson Creek Wind Farm

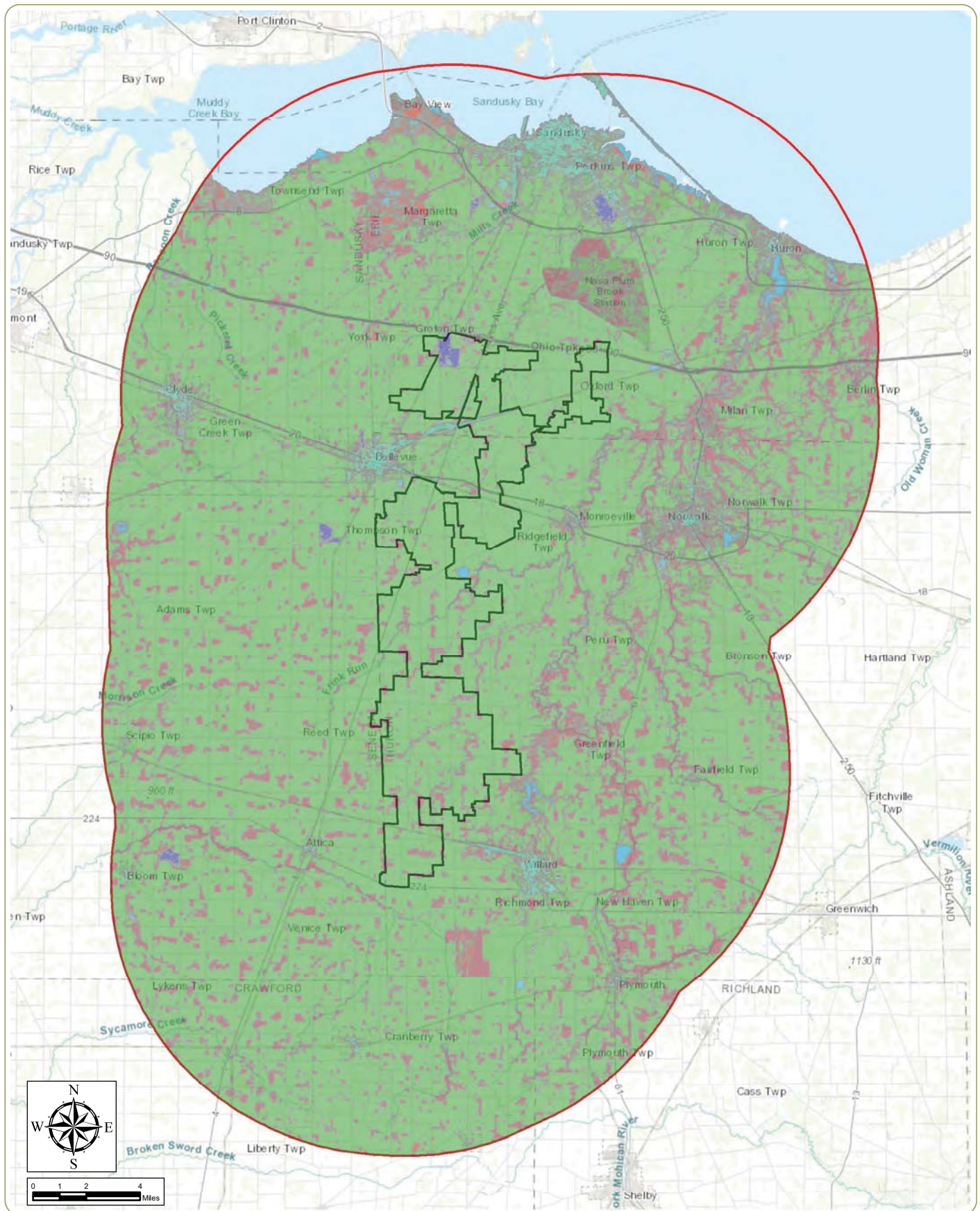
Erie and Huron Counties, Ohio

Figure 3: Visual Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Proposed Wind Turbine
- 10 Mile Study Area
- Project Boundary





Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

Figure 4: Land Use

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on March 11, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Project Boundary
10 Mile Study Area

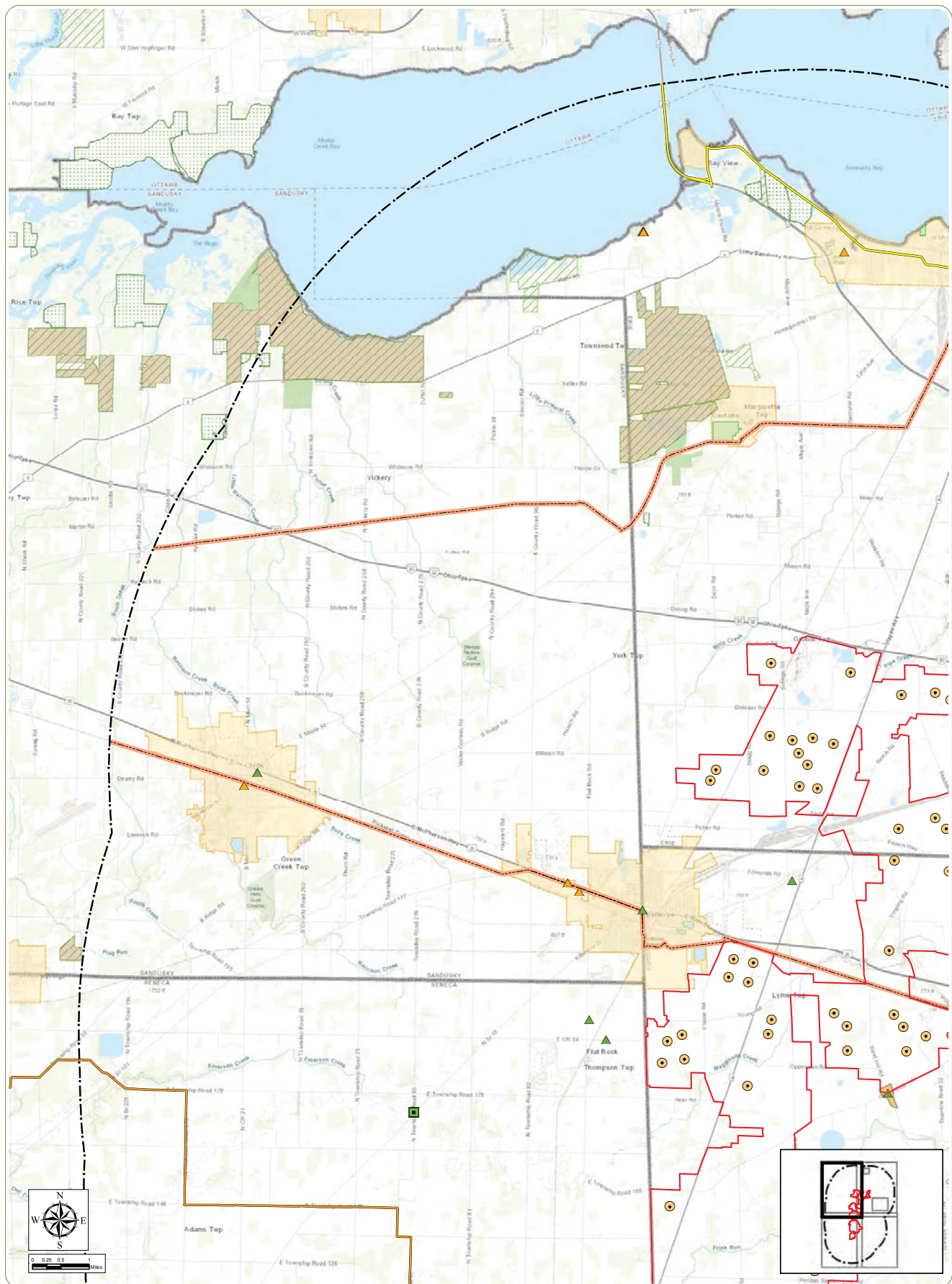
Land Use

Agriculture/Open Urban Areas
Barren
Non-Forested Wetlands
Open Water

Outside the County
Shrub/Scrub
Urban
Wooded



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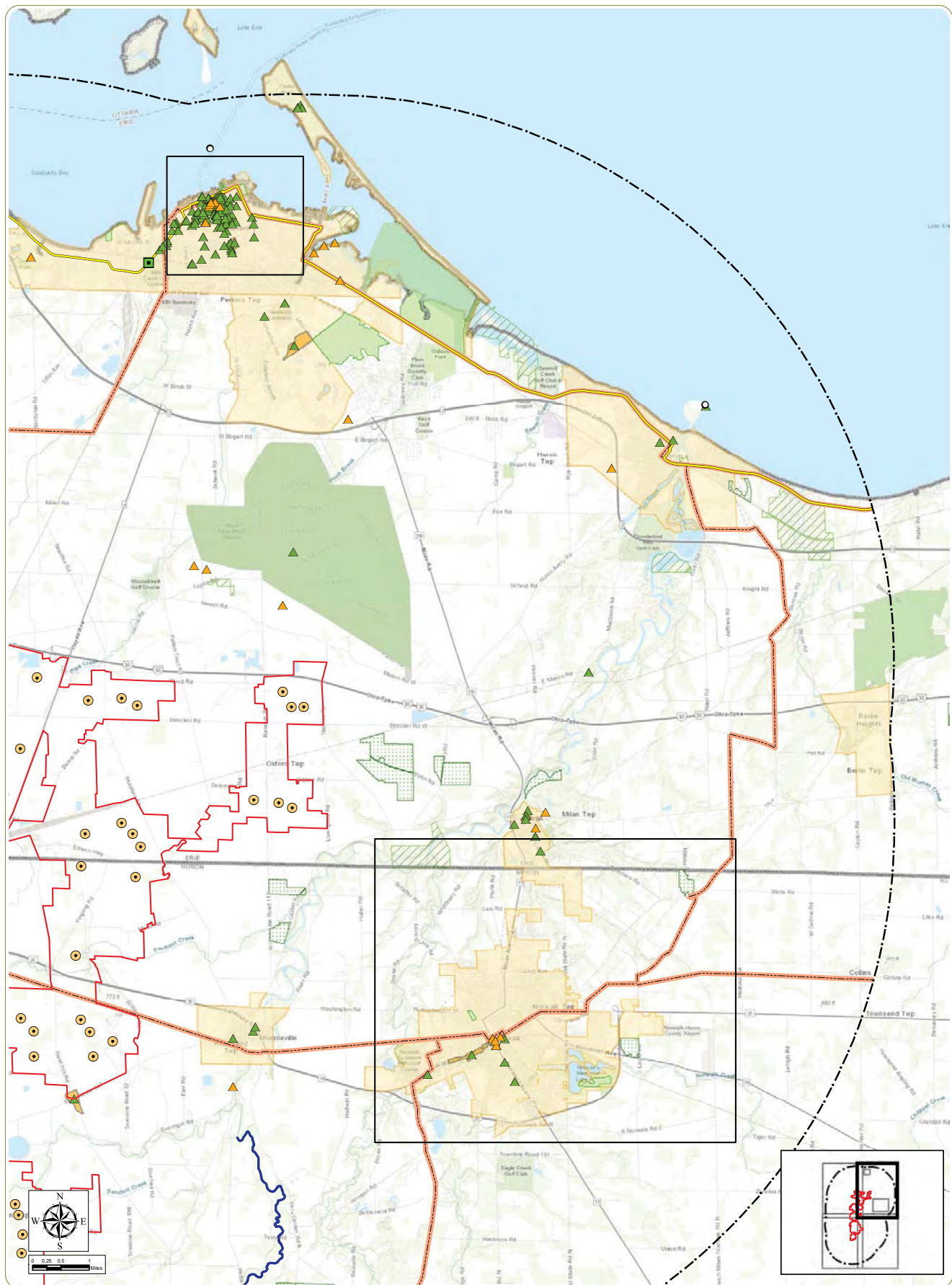
Emerson Creek Wind Farm Erie and Huron County, Ohio

Figure 5: Sensitive Sites - 10 Mile Study Area
Sheet 1 of 6

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service... 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may

- Proposed Wind Turbine
- ▲ NRHP-Eligible
- ▲ NRHP- Listed
- Historic Bridge
- ScenicByways
- Bike Route
- Buckeye Trail
- ODNR Land
- Non-ODNR Conservation Lands
- State Wildlife Management Area
- Parks
- NRHP Historic District
- Area of Intensive Land Use
- County Boundary
- 10 Mile Study Area
- Project Boundary





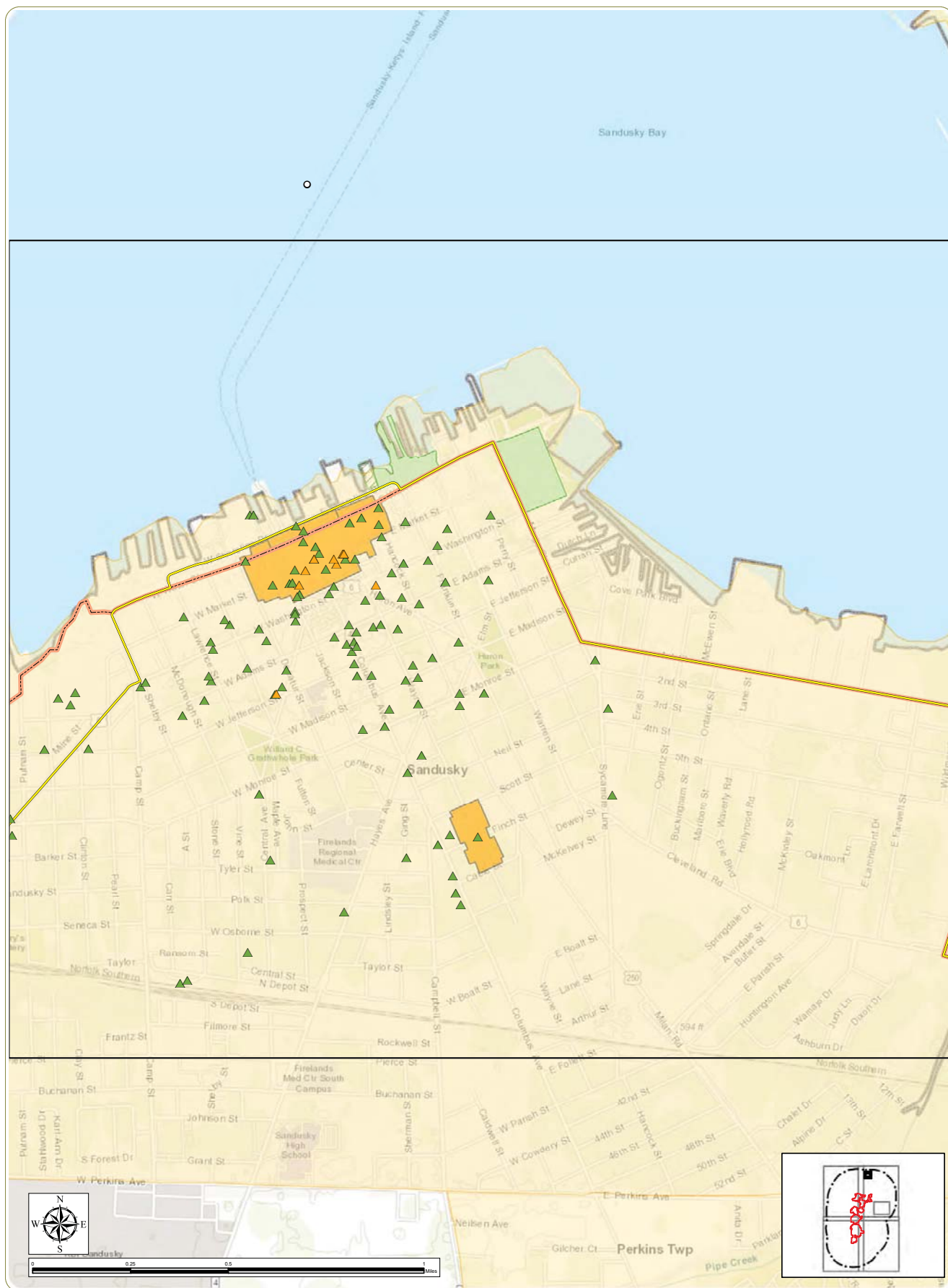
Emerson Creek Wind Farm Erie and Huron County, Ohio

Figure 5: Sensitive Sites - 10 Mile Study Area
Sheet 2 of 6

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service... 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may

- Proposed Wind Turbine
- ▲ NRHP-Eligible
- ▲ NRHP- Listed
- Waterport
- Historic Bridge
- ScenicByways
- Bike Route
- NRI- Recreational
- ODNR Land
- Non-ODNR Conservation Lands
- Parks
- NRHP Historic District
- Area of Intensive Land Use
- County Boundary
- 10 Mile Study Area
- Project Boundary





Emerson Creek Wind Farm

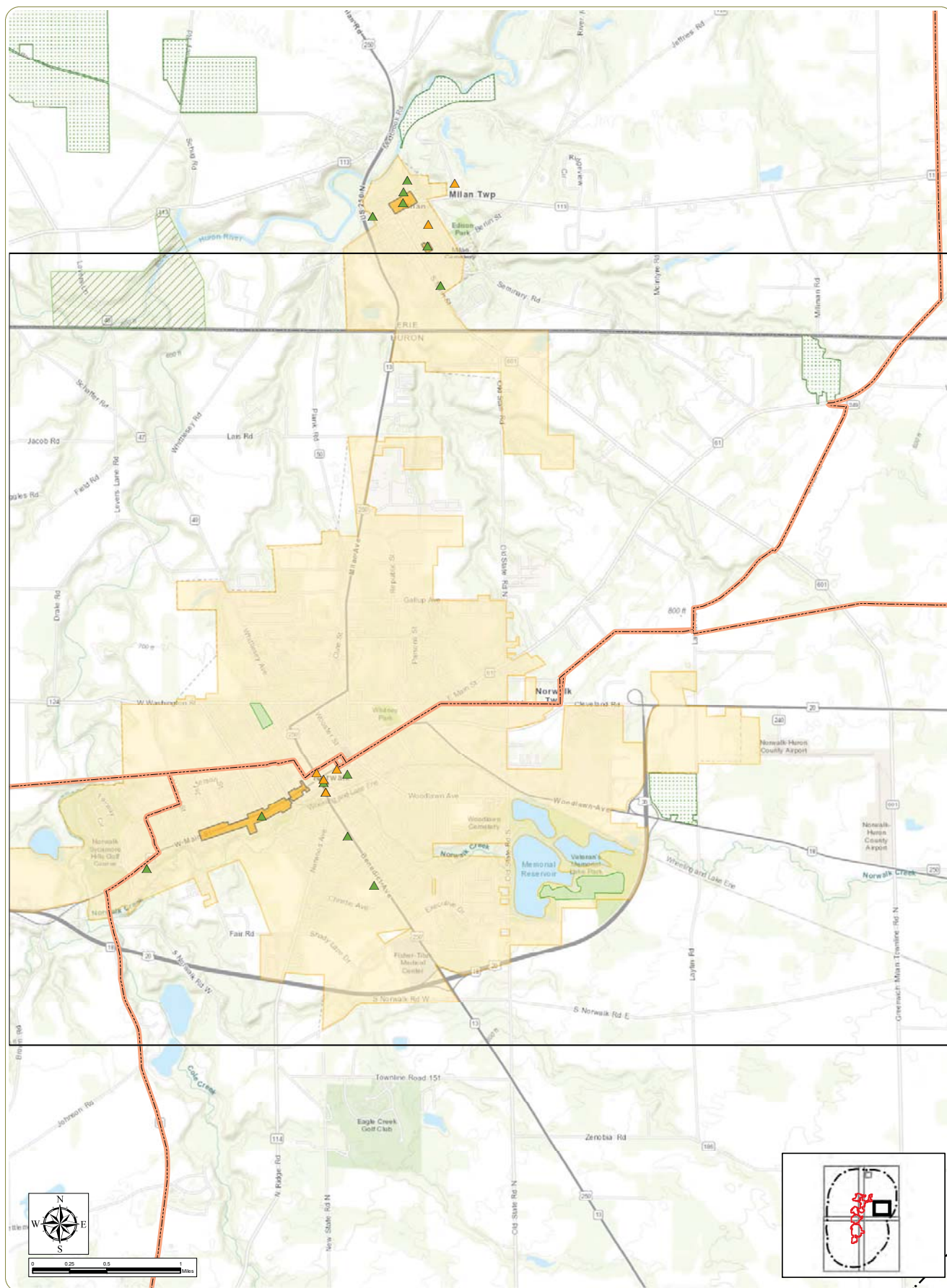
Erie and Huron County, Ohio

Figure 5: Sensitive Sites - 10 Mile Study Area
Sheet 3 of 6

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service... 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may



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Emerson Creek Wind Farm Erie and Huron County, Ohio

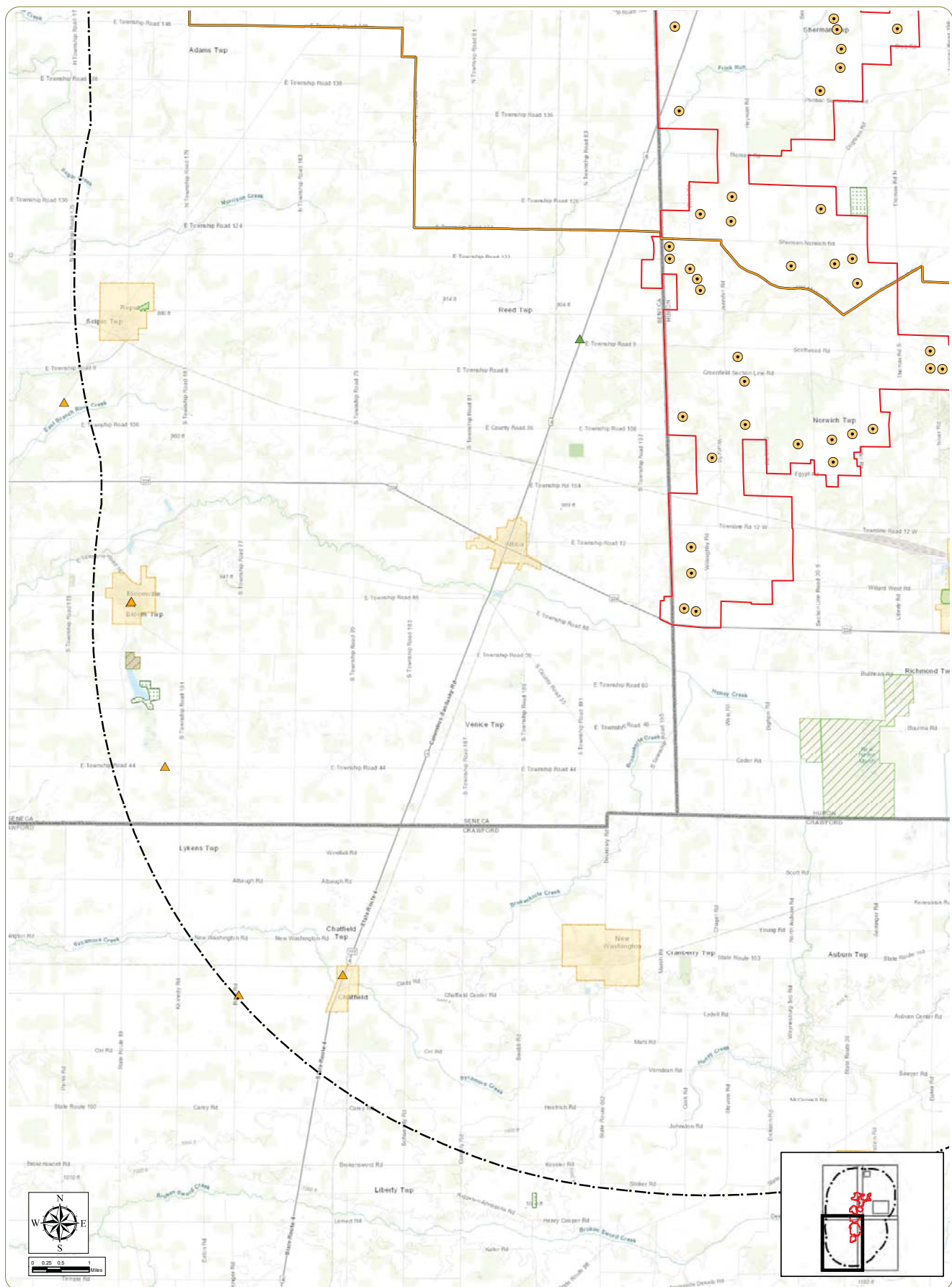
Figure 5: Sensitive Sites - 10 Mile Study Area
Sheet 4 of 6

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service... 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may

- ▲ NRHP-Eligible
- ▲ NRHP-Listed
- Bike Route
- ▨ ODNR Land
- Parks
- NRHP Historic District
- Area of Intensive Land Use
- ▭ County Boundary
- ▭ 10 Mile Study Area



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Emerson Creek Wind Farm

Erie and Huron County, Ohio

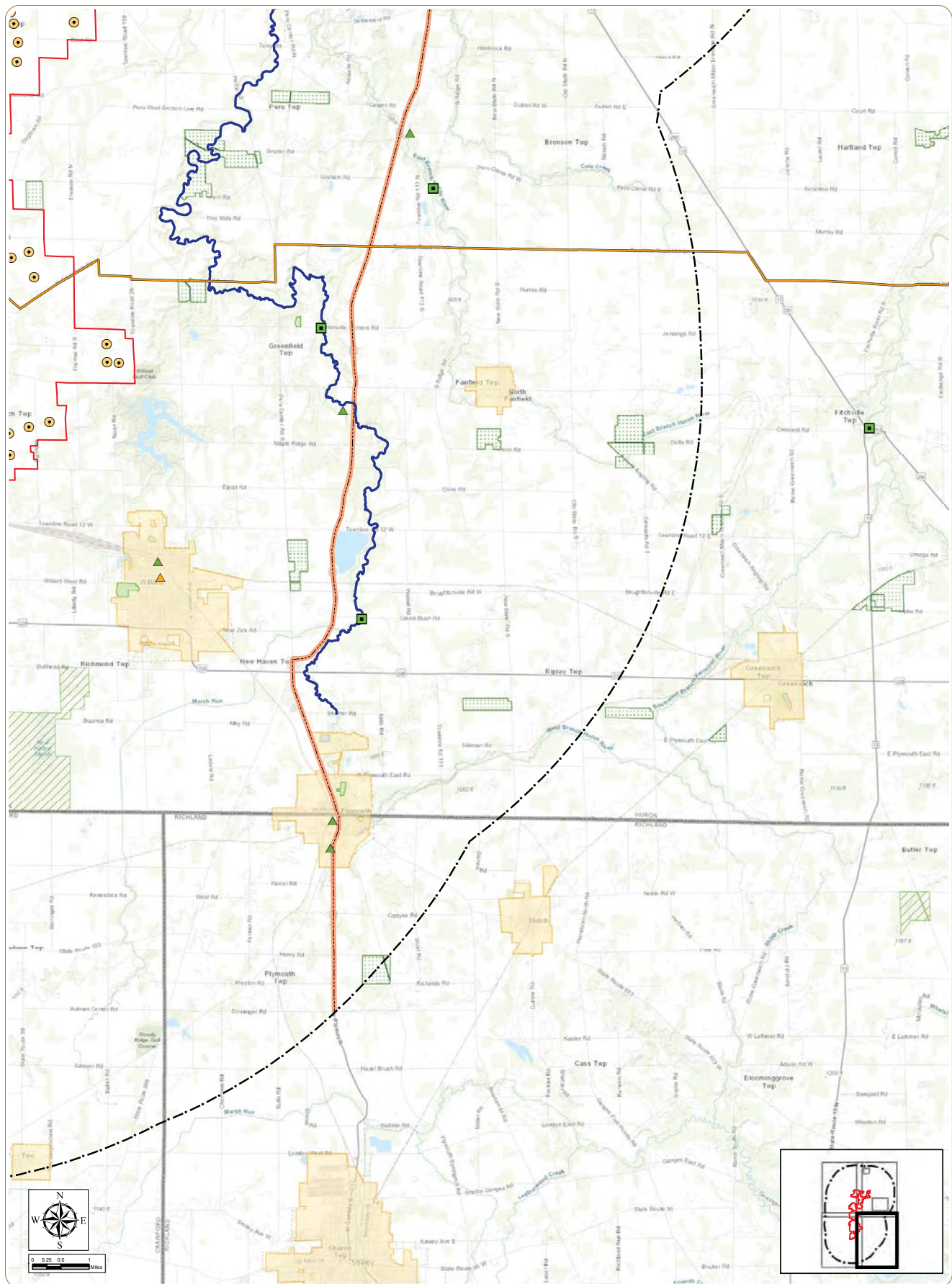
Figure 5: Sensitive Sites - 10 Mile Study Area
Sheet 5 of 6

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service... 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may

- Proposed Wind Turbine
- ▲ NRHP-Eligible
- ▲ NRHP- Listed
- Buckeye Trail
- ▨ ODNr Land
- ▨ Non-ODNr Conservation Lands
- ▨ State Wildlife Management Area
- ▨ Parks
- ▨ Area of Intensive Land Use
- ▨ County Boundary
- - - 10 Mile Study Area
- ▨ Project Boundary



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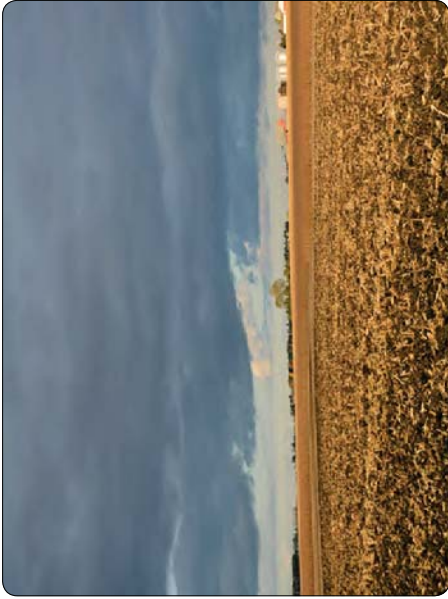
Erie and Huron County, Ohio

Figure 5: Sensitive Sites - 10 Mile Study Area
Sheet 6 of 6

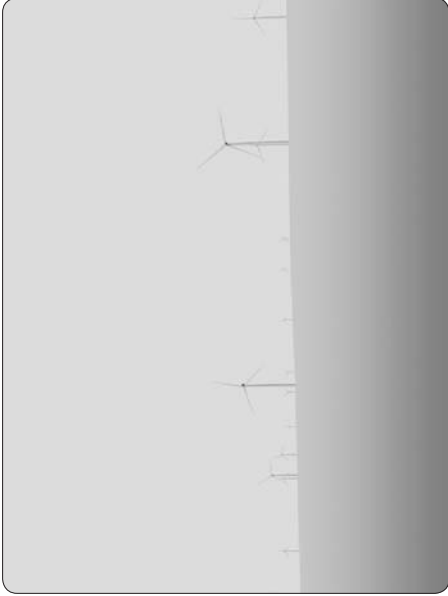
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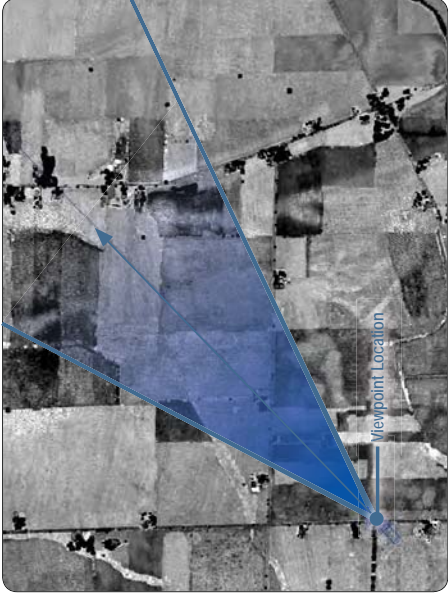
www.edrpsc.com



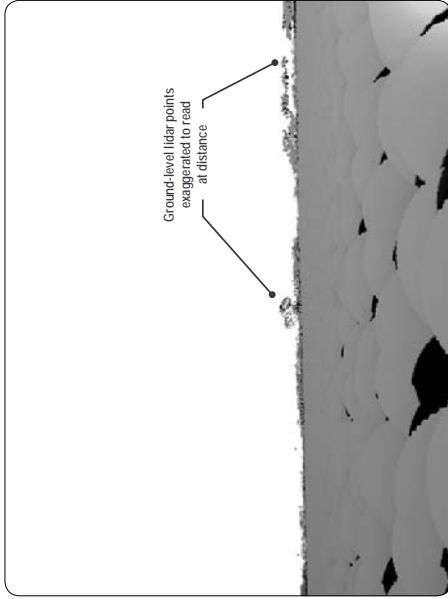
1. Photos are selected to illustrate typical views that will be available to representative viewer/user groups from the landscape similarity zones and sensitive sites where the project would be visible



2. A three-dimensional computer model of the project is built based on proposed turbine specifications and lower site coordinates.



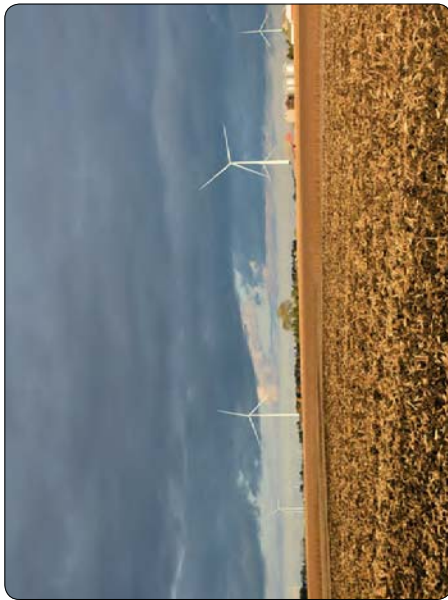
3. Point cloud lidar data is obtained for the study area, if available. Image above represents the camera position and the level of detail achieved by lidar data.



4. View of the three-dimensional "camera view" of lidar information shown without the photograph.



5. These data are superimposed over photographs from each of the selected viewpoints and minor camera changes are made to align all known reference points within the view.



6. The proposed exterior color/finish of the turbines is then added to the model and the appropriate sun angle is simulated based on the specific date, time and location (latitude and longitude) at which each photo was taken.

Individual Project Visibility within the Visual Study Area

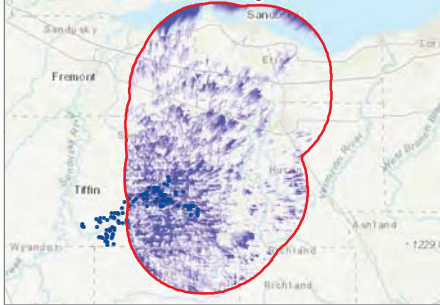
Blade Tip Visibility Based on Topography, Structures, and Vegetation

Many Turbines Potentially Visible

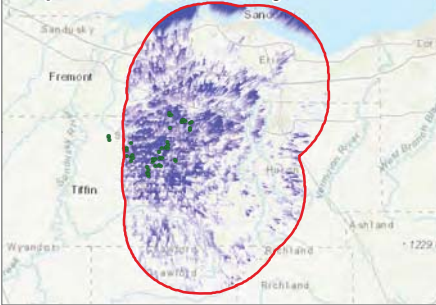
Few Turbines Potentially Visible

0 5 10 20 Miles

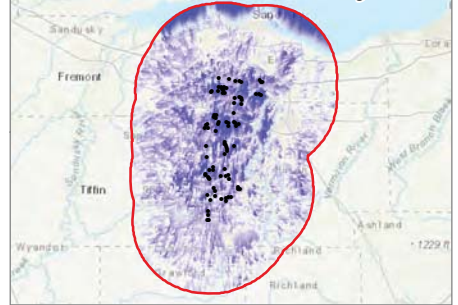
Seneca Wind Visibility



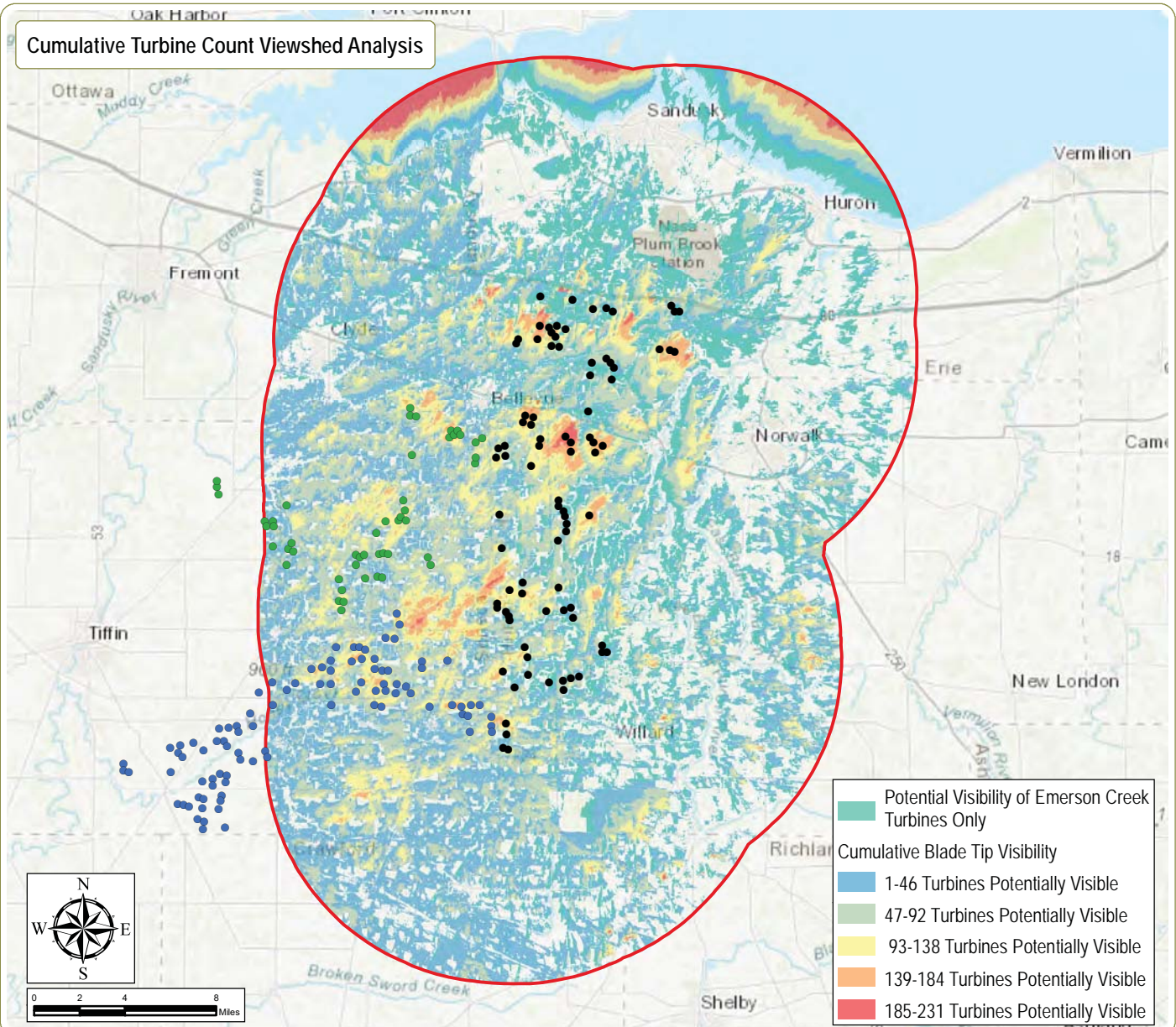
Republic Wind Visibility



Emerson Creek Wind Visibility



Cumulative Turbine Count Viewshed Analysis



Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

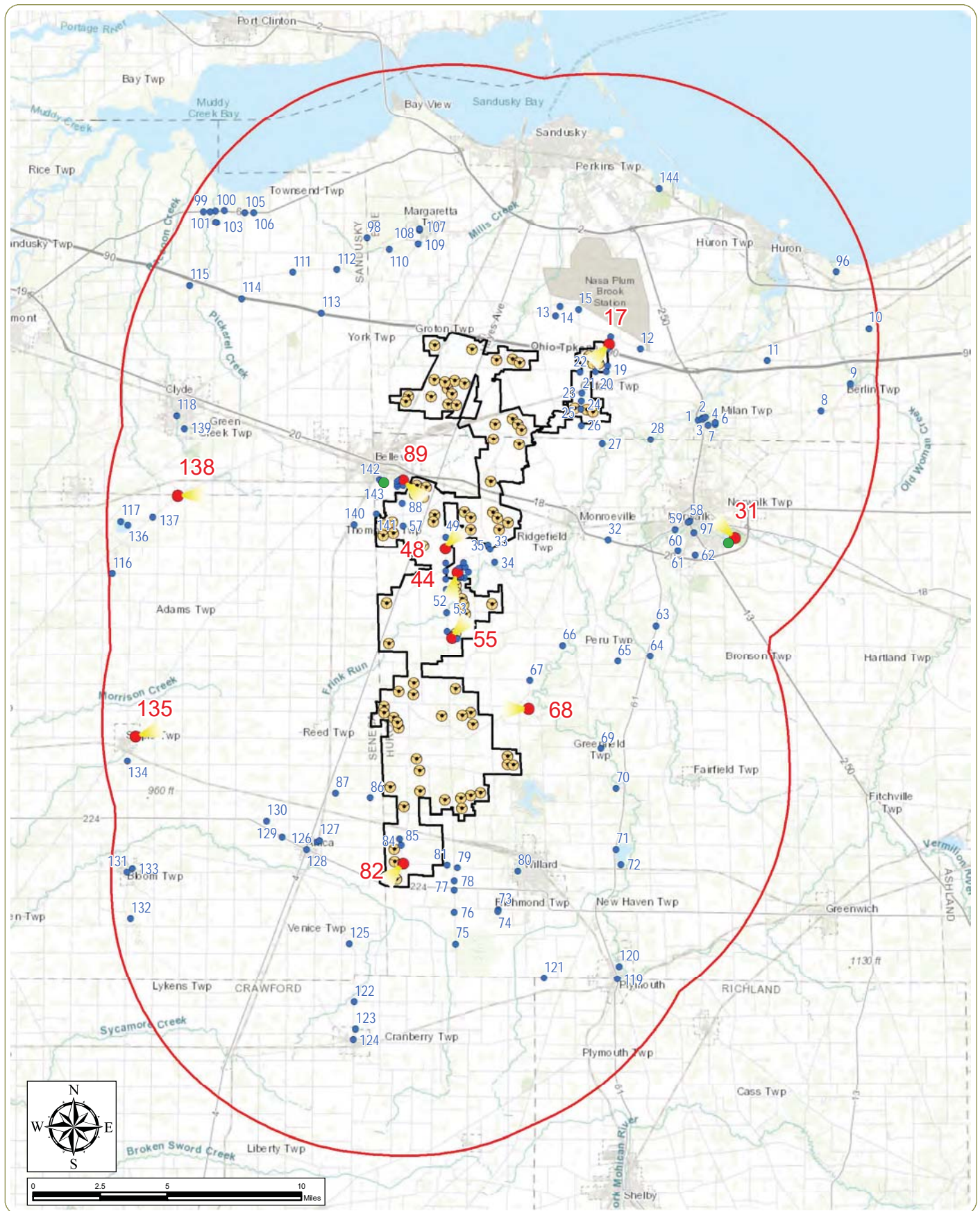
Figure 8: Cumulative Viewshed Analysis

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on January 25, 2019.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Emerson Creek Wind Turbine (87 Turbines)
- Republic Wind Turbine (50 Turbines)
- Seneca Wind Turbine (94 Turbines)

10-Mile Study Area





Emerson Creek Wind Farm Erie and Huron Counties, Ohio

Figure 9: Viewpoint Locations

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Proposed Wind Turbine
- Simulated Viewpoint Location
- Viewpoint Location
- Wire-Frame Rendering Location
- Project Boundary
- 10 Mile Study Area





Emerson Creek Wind Farm

Erie, and Huron, Counties, Ohio

Figure 10: Representative Evening/Nighttime Photos

Appendix A

Composite Overlay Map

Emerson Creek Wind Farm

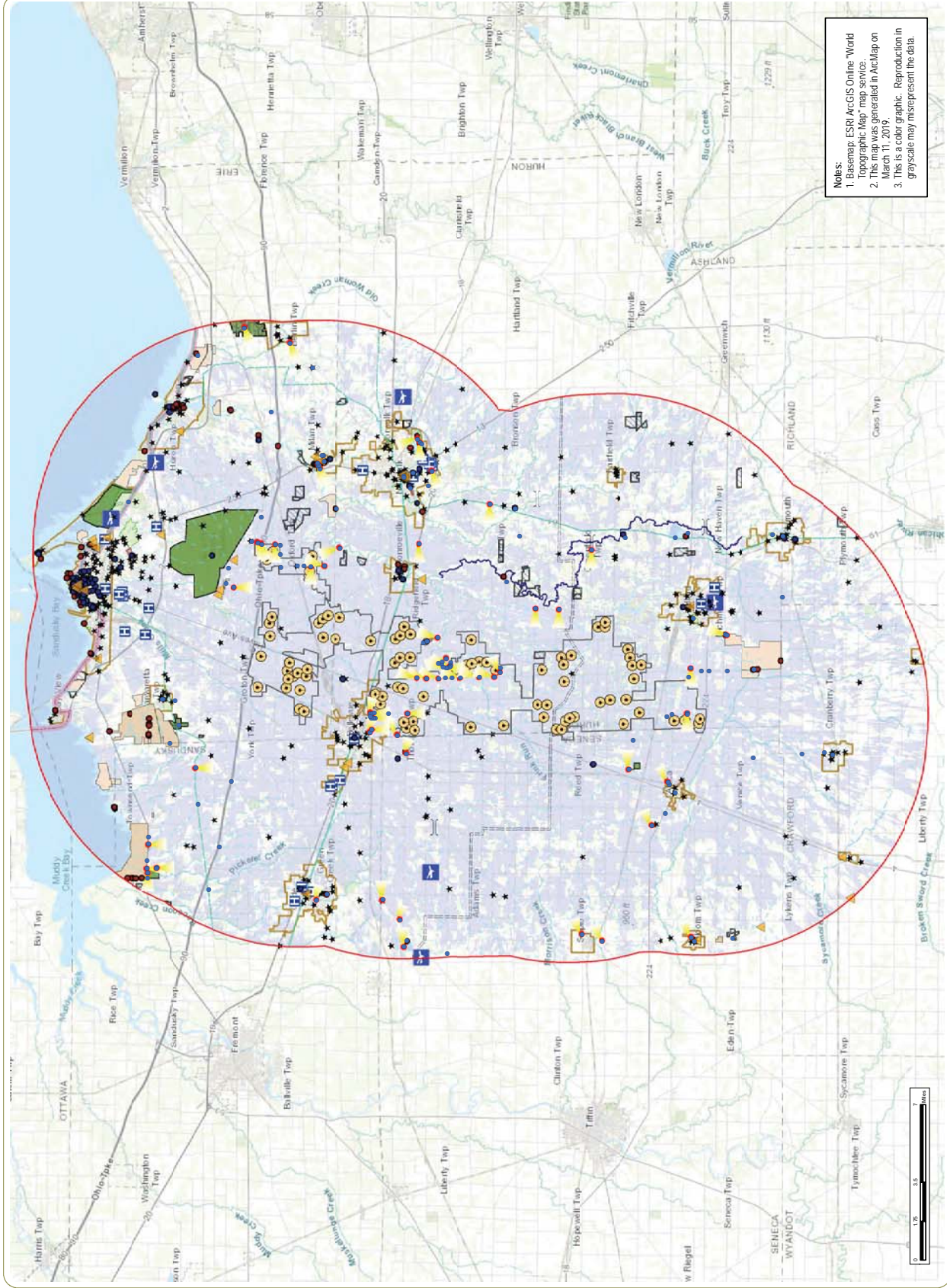
Townships of Groton, Oxford,
Lyme, Ridgefield, Sherman,
Norwich, and Richmond
Huron and Erie Counties, Ohio

Appendix A: Composite Map

- Simulated Viewpoint Location
- Viewpoint Location
- Proposed Wind Turbine
- Historic Bridge
- ▲ NRHP Eligible
- NRHP-Listed
- ODNR-POI
- Hospital
- ★ Institutions
- Airport
- NRI Recreational
- River
- ==== Buckeye Trail
- BikeRoute
- Scenic-Byways
- State Wildlife Management Area
- ODNR Land
- NRHP Historic District
- Non ODNR Conservation Land
- Local Park
- Forest Reserve
- Conservation Easement
- City or Village
- 10 Mile Study Area
- Potential Turbine/Blade Visibility
- Project Boundary



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Notes:
1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on March 11, 2019.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Appendix B

Visually Sensitive Resources Visibility Analysis

Visually Sensitive Resource	Location		County	Distance ² Miles from Nearest Turbine	Distance Zone	Project Visibility	
						DTM (Topography)	DSM (Topography, Vegetation & Structures)
Properties and Districts listed in the National or State Register of Historic Places	Town	VP Number ¹			I Foreground Midground Background		
St Mary's School	Erie			8.40	*	+	-
Barker School	Erie			7.94	*	+	-
Bavarian Brewery	Erie			8.24	*	+	-
St Mary's Girls Grade School	Erie			8.36	*	+	-
Michman's Grocery	Erie			8.46	*	+	-
Holy Angels Church	Erie			8.27	*	+	-
Kuebler, August, House	Erie			7.84	*	+	-
Kerber's Marine Grocery	Erie			8.00	*	+	-
Erie County Oil Products Co	Erie			8.04	*	+	-
Fox's Brewery-Diamond Wine Co	Erie			8.37	*	+	-
No. 5 Fire Station	Erie			7.92	*	+	-
Cable, Frank, House	Erie			8.52	*	+	-
Spacecraft Propulsion Research Facility	Erie			2.46	*	+	+/-
Hinde & Dauch Paper Co	Erie			8.73	*	+	-
Godfrey-Johnson House	Erie			8.46	*	+	-
Beecher, Lucas, House	Erie			8.63	*	+	-
Simpson, William A., House	Erie			8.65	*	+	-
Ohio Theatre (DELISTED)	Erie			8.69	*	+	-
Boat, John, House	Erie			8.18	*	+	-
McKenster-Groff House	Erie			8.67	*	+	-
Engine House No 1	Erie			8.62	*	+	-
Oakland Cemetery Chapel and Superintendent's House and Office	Erie			6.85	*	+	-
Converse-Mertz Apartments	Erie			8.67	*	+	-
Taylor-Frohman House	Erie			7.86	*	+	-
Hinde, James J., House	Erie			8.46	*	+	-
Harper, Rice, House	Erie			8.70	*	+	-
Exchange Hotel (DELISTED)	Erie			8.79	*	+	-
Muller, Daniel C, Carousel	Erie			10.30	*	+	-
First Church of Christ Scientist	Erie			8.52	*	+	-
Lane, Ebenezer, House	Erie			8.59	*	+	-
Bates-Cockren House	Erie			8.44	*	+	-
Engels and Krudwig Wine Company Buildings	Erie			8.80	*	+	-
Mallory, Ogden, House	Erie			8.60	*	+	-
Spoffel, Henry, Blacksmith Shop	Erie			8.71	*	+	-
St Mary's Catholic Church	Erie			8.38	*	+	-
Coliseum, The	Erie			10.34	*	+	-
Curtis, William D., House	Erie			7.81	*	+	-
Hubbard, S.B. House	Erie			7.94	*	+	-
Mad River Block	Erie			8.37	*	+	-
Schline State Theatre	Erie			8.76	*	+	-
Lake Shore And Michigan Southern Railroad Depot	Erie			7.70	*	+	-
First Congregational Church	Erie			8.43	*	+	-
Lea Block	Erie			8.69	*	+	-
Ohio Soldiers' And Sailors' Home	Erie			6.10	*	+	-
March, George, House	Erie			8.37	*	+	-
Sloil, Adam J., House	Erie			8.37	*	+	-
Boeckling, G A, House	Erie			8.30	*	+	-
Water Street Commercial Buildings	Erie			8.78	*	+	-
Commercial Banking & Trust Co	Erie			8.63	*	+	-
Wadsworth, James, House	Erie			8.45	*	+	-
Doerzbach, George J, House	Erie			7.97	*	+	-
Red Popcorn Wagon, The	Erie			8.62	*	+	-
Wildred Flats	Erie			7.96	*	+	-
Cable, Laurence, House	Erie			8.14	*	+	-
Mertz, John, House	Erie			8.54	*	+	-
Enghe House No. 3	Erie			8.38	*	+	-
Dentzel, William H., 1924 Carousel	Erie			10.30	*	+	-

Visually Sensitive Resource	Location			Distance ² Miles from Nearest Turbine	Distance Zone	Project Visibility		
	Town	County	VP Number ¹			DTM (Topography)	+ Visible - Not Visible +/- Partially Visible	DSM (Topography, Vegetation & Structures)
Kuebler-Slang Block	Margaretta Annex	Erie		8.32	*	+	+	-
Melville-Milne, William Gordon, House	Margaretta Annex	Erie		8.46	*	+	+	-
Boeckling Building	Margaretta Annex	Erie		8.80	*	+	+	-
Monroe School	Margaretta Annex	Erie		8.32	*	+	+	-
Cable Park Historic District	Margaretta Annex	Erie		7.95	*	+	+	-
Sis Peter & Paul Church and Rectory	Margaretta Annex	Erie		8.39	*	+	+	-
St Stephens' AME Church	Margaretta Annex	Erie		8.77	*	+	+	-
Cooke, Eleutheros, House	Margaretta Annex	Erie		7.81	*	+	+	-
Rood, Joseph, House	Margaretta Annex	Erie		8.58	*	+	+	-
Zion Lutheran Church	Margaretta Annex	Erie		8.40	*	+	+	-
Campbell School	Margaretta Annex	Erie		7.92	*	+	+	-
Erie County Infirmary	Perkins	Erie		6.62	*	+	+	-
Erie County Office Building	Margaretta Annex	Erie		8.03	*	+	+	-
Murschel House	Margaretta Annex	Erie		7.71	*	+	+	-
Shane, Rush R, House	Margaretta Annex	Erie		8.61	*	+	+	-
US Post Office	Margaretta Annex	Erie		8.56	*	+	+	-
Sycamore School	Margaretta Annex	Erie		8.25	*	+	+	-
Emmanuel Church	Margaretta Annex	Erie		8.53	*	+	+	-
Boy with the Boot Fountain	Margaretta Annex	Erie		8.58	*	+	+	-
Adams Street Double House	Margaretta Annex	Erie		8.51	*	+	+	-
Old First Church	Margaretta Annex	Erie		8.58	*	+	+	-
Simpson, Walter, House	Margaretta Annex	Erie		8.42	*	+	+	-
Hinde & Dauch Paper Co	Margaretta Annex	Erie		8.85	*	+	+	-
Jackson Jr High School	Margaretta Annex	Erie		8.26	*	+	+	-
Grace Episcopal Church	Margaretta Annex	Erie		8.59	*	+	+	-
Bug's Hotel	Margaretta Annex	Erie		8.82	*	+	+	-
Loiz, Henry, Store	Margaretta Annex	Erie		8.47	*	+	+	-
Barney, Fredland T., House	Margaretta Annex	Erie		8.58	*	+	+	-
Erie County Jail	Margaretta Annex	Erie		8.50	*	+	+	-
Columbus Avenue Historic District	Margaretta Annex	Erie		8.72	*	+	+	-
Holiel Reiger	Margaretta Annex	Erie		8.66	*	+	+	-
St Mary's Rectory	Margaretta Annex	Erie		8.40	*	+	+	-
Wagner Palace	Margaretta Annex	Erie		8.14	*	+	+	-
Felck Building	Margaretta Annex	Erie		8.70	*	+	+	-
Third National Bank	Margaretta Annex	Erie		8.66	*	+	+	-
Carnegie Library	Margaretta Annex	Erie		8.48	*	+	+	-
West Market School	Margaretta Annex	Erie		8.59	*	+	+	-
Great American Racing Derby	Margaretta Annex	Erie		10.29	*	+	+	-
Osborne School	Margaretta Annex	Erie		7.74	*	+	+	-
Hinde & Dauch Paper Co	Margaretta Annex	Erie		8.44	*	+	+	-
Second Baptist Church	Margaretta Annex	Erie		8.52	*	+	+	-
Graele, Henry, House	Margaretta Annex	Erie		7.78	*	+	+	-
Facer's Store	Margaretta Annex	Erie		8.74	*	+	+	-
Moss Foster House	Margaretta Annex	Erie		8.31	*	+	+	-
Independent Order of Odd Fellows Temple	Margaretta Annex	Erie		8.62	*	+	+	-
Hemminger Saloon	Margaretta Annex	Erie		8.66	*	+	+	-
Townsend, William T., House	Margaretta Annex	Erie		8.55	*	+	+	-
Slang, John, House	Margaretta Annex	Erie		8.26	*	+	+	-
Cooke, Eleutheros, House	Margaretta Annex	Erie		8.49	*	+	+	-
Follett-Moss-Moss Residences	Margaretta Annex	Erie		8.50	*	+	+	-
Hubbard, Lester, House	Margaretta Annex	Erie		8.52	*	+	+	-
Ross Hardware	Margaretta Annex	Erie		8.29	*	+	+	-
Marshall, James E., House	Margaretta Annex	Erie		8.41	*	+	+	-
Stone's Block	Margaretta Annex	Erie		8.68	*	+	+	-
Engels, Herman, House	Margaretta Annex	Erie		8.77	*	+	+	-
While, Samuel M., House	Margaretta Annex	Erie		8.56	*	+	+	-
Von Schulenburg, Ernst, House	Margaretta Annex	Erie		8.40	*	+	+	-
Cooke-Robertson House	Margaretta Annex	Erie		8.47	*	+	+	-

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Downtown Sandusky Commercial Historic District (100001899)							
Columbus Avenue District	Margaretta Annex	Erie		8.74	*	+	-
Downtown Sandusky Commercial Historic District	Margaretta Annex	Erie		8.71	*	+	-
Ohio Soldiers & Sailors Home	Perkins	Erie		5.83	*	+/-	+/-
Water Street Commercial Buildings Historic District	Margaretta Annex	Erie		8.76	*	+	-
Cable Park Historic District	Margaretta Annex	Erie		7.87	*	+	-
Abbot-Page House	Milan	Erie		5.06	*	+	-
Huron School	Huron	Erie		7.82	*	+	-
Huron Harbor Light	Huron	Erie		8.86	*	+	-
Christ Episcopal Church	Huron	Erie		8.04	*	+	-
Nonwalk Memorial Hospital	Nonwalk	Huron		5.28	*	+	-
Benedict, Dr. David De Forest, House (DELISTED)	Nonwalk	Huron		5.53	*	+	-
Dutton House	Nonwalk	Huron	97	5.85	*	+	-
Huron County Children's Home	Nonwalk	Huron		6.22	*	+	-
Lockwood, J.C. House	Milan	Erie		4.15	*	+	-
Edison, Thomas Alva, Birthplace	Milan	Erie		4.12	*	+	-
Milan Historic District	Milan	Erie		4.12	*	+	-
Andrews, Ebenezer, House	Milan	Erie		4.44	*	+	-
Huron County Courthouse And Jail	Nonwalk	Huron		5.47	*	+	-
Jenkins-Perry House	Milan	Erie	1	3.92	*	+	-
West Main Street District	Nonwalk	Huron		5.38	*	+	-
Mitchell Historic District	Milan	Erie	7	4.31	*	+	-
Huron County Courthouse and Jail Historic District	Nonwalk	Huron	59	5.44	*	+	+/-
Milan Historic District	Milan	Erie	2, 3, 4	4.03	*	+	+/-
West Main Street District	Nonwalk	Huron	60	5.24	*	+/-	-
Mitchell Historic District	Milan	Erie	7	4.28	*	+	-
Tremont House	Lyme	Huron		1.81	●	+	-
Zion Episcopal Church	Ridgfield	Huron		2.11	●	+	-
Brown, Seth, House	Ridgfield	Huron		2.47	●	+	-
Hosford, John, House	Ridgfield	Huron		2.52	●	+	-
Heier Farm	Thompson	Seneca		1.42	●	+	+/-
Hunts Corners	Lyme	Huron	35	0.80	●	+	+/-
Hunts Corners Historic District	Lyme	Huron	35	0.65	●	+	+/-
Henry Barn	Thompson	Seneca		1.06	●	+	+/-
Omar Chapel	Reed	Seneca		2.11	●	+	+/-
Baltimore and Ohio Railroad Depot (DELISTED)	New Haven	Huron		3.11	●	+	+/-
Tubbs-Sourwine House	Plymouth	Richland		8.60	*	+	-
Plymouth Greenlawn Cemetery Chapel	Plymouth	Richland		8.94	*	-	-
McPherson, Maj. Gen. James B, House	Green Creek	Sandusky		7.98	*	+	-
Wright, John, Mansion	Lyme	Huron		1.60	●	+	-
Macksville Tavern	Peru	Huron		6.24	*	+	-
Phoenix Mills	Greenfield	Huron		4.04	*	+	-
Properties eligible for inclusion in the National or State Register of Historic Places							
238/240 COLUMBUS AVENUE	Margaretta Annex	Erie		7.94	*	+	+/-
234 236 COLUMBUS	Margaretta Annex	Erie		7.95	*	+	+/-
237 240 COLUMBUS	Margaretta Annex	Erie		7.95	*	+	-
238/240 COLUMBUS AVENUE	Margaretta Annex	Erie		7.94	*	+	+/-
234/236 COLUMBUS AVENUE	Margaretta Annex	Erie		7.94	*	+	+/-
Dom Baseball Park	Margaretta Annex	Erie		7.37	*	+	-
Sandusky- Mills Creek (Carries- US 6 (Tiffin Ave.))	Margaretta Annex	Erie		7.58	*	+/-	-
142 E MARKET ST	Margaretta Annex	Erie		8.69	*	+	-
158 E MARKET ST	Margaretta Annex	Erie		8.71	*	+	-
129-139 W MARKET STREET	Margaretta Annex	Erie		8.71	*	+	-
152 154 E MARKET	Margaretta Annex	Erie		8.71	*	+	-
SANDUSKIAN HOTEL: 232 JACKSON	Margaretta Annex	Erie		8.65	*	+	-
130 E MARKET ST	Margaretta Annex	Erie		8.70	*	+	-

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Visually Sensitive Resource							
152 154 E MARKET	Erie		8.71	*	+	-	
202 WEST MARKET ST	Erie		8.68	*	+/-	-	
129-139 W MARKET STREET	Erie		8.71	*	+	-	
2206 cleveland rd	Erie		7.32	*	+	-	
Crossing of sandusky	Perkins		4.94	*	+	+/-	
Demolition of Three Properties	Erie		8.38	*	+	-	
Myers Custom Butchering Wind Project	Erie		6.87	*	+	-	
13316 riley rd	Huron		4.47	*	+	-	
lockwood hse: 30 north edison	Milan		4.30	*	+	-	
48 - 48 1/2 BENEDICT AVE	Norwalk		5.52	*	+	-	
48 - 48 1/2 BENEDICT AVE	Norwalk		5.52	*	+	-	
Unk	Norwalk		5.46	*	+	-	
Installation of Lightning Protection	Norwalk		5.45	*	+	-	
HUR-99-13-77	Ridgefield		2.26	●	+	+/-	
Thompson Twp.- Royer Ditch (Carries- TR 80)	Thompson		4.46	*	+	+	
Bronson Twp.- East Branch Huron River (Carries- TR 114 (Ridge Rd.))	Bronson		6.34	*	+	-	
Fairfield Twp.- West Branch Huron River (Carries- TR 100 (Hanville Corner Rd.))	Greenfield		3.62	*	+/-	-	
New Haven Twp.- West Branch Huron River (Carries- TR 109)	New Haven		6.23	*	+/-	-	
3623 new washington rd	Chalford		10.39	*	+	+/-	
Chalford / Wood Cell Site	Chalford		8.83	*	+	-	
REHAB: 22 JEFFERSON ST.	Bloom		9.76	*	+	-	
REHAB: 21 JEFFERSON ST.	Bloom		9.75	*	+/-	-	
REHAB: 56 EAST HAVEN ST.	Bloom		9.57	*	+	-	
State Parks							
None in Study Area							
National Heritage Areas							
None in Study Area							
National Wildlife Refuges, State Game Refuges, and State Wildlife Management Areas							
Millers Blue Hole WMA	Townsend		7.34	*	+	+/-	
Pickrel Creek WMA	Riley, Townsend	99, 100, 101, 102, 105, 106	7.91	*	+/-	+/-	
Reshaven WMA	Margaretta, Townsend	98	4.20	*	+/-	+/-	
Castalia Wildlife	Margaretta		5.01	*	+	+/-	
Willow Point Wildlife	Margaretta Annex, Townsend		7.54	*	+/-	+/-	
Moxley Wildlife	Margaretta Annex		7.74	*	+/-	+/-	
Pipe Creek Wildlife	Margaretta Annex		8.22	*	+	-	
Sandusky Wildlife	Margaretta Annex		8.86	*	+	-	
Huron Wildlife	Huron		7.92	*	+/-	+/-	
Milan Wildlife	Milan, Oxford, Norwalk, Ridgefield	28	1.62	●	+/-	+/-	
Willard Marsh Wildlife	Richmond	73, 74	2.58	●	+/-	+/-	
Silver Creek WMA	Bloom		9.64	*	+/-	+/-	
National Natural Landmarks							
None in Study Area							
National Parks, Recreation Areas, Seashores and/or Forests							
NASA Plumbrook Station	Huron, Milan, Oxford, Perkins		1.49	●	+/-	+/-	
Nationwide Rivers Inventory							
Huron River, West Branch	Greenfield, New Haven, Peru, Ridgefield		2.02	●	+/-	+/-	
National or State Designated Wild, Scenic, or Recreational Rivers							
None in Study Area							
Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible as Scenic							
Lake Erie Coastal Ohio Scenic Byway	Berlin Annex, Huron, Margaretta Annex, Perkins	144	6.67	*	+/-	+/-	
State and Federally Designated Trails							
Buckeye Trail	Bronson, Fairfield, Greenfield, Norwich, Peru, Sherman, Adair		0.12	●	+/-	+/-	
North Coast Inland Trail/Bike Route	Lyme, Norwalk, Ridgefield, Townsend, Green Creek, York		0.26	●	+/-	+/-	
State Nature and Historic Preserve Areas							
Erie Sand Barrens State Nature Preserve	Oxford	14	2.32	●	+	+/-	

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Old Woman Creek (West) State Nature Preserve	Berlin Annex, Huron	Erie	96	8.96	*	+/-	+/-
Sheldon Marsh State Nature Preserve	Huron, Margaretta Annex	Erie		6.96	*	+/-	+/-
DuPont Marsh State Nature Preserve	Huron	Erie		6.67	*	+/-	+/-
State Historic Markers							
None in Study Area							
Locally Important Resources							
Areas of Intensive Land Use (City, Village, Hamlet)							
Castalia (Village)	Margaretta	Erie	107, 108	3.85	*	+/-	+/-
Sandusky South (CDP)	Margaretta Annex, Perkins	Erie		4.59	*	+/-	+/-
Milan (Village)	Milan, Norwalk	Erie, Huron	1, 2, 3, 4, 7	3.76	*	+/-	+/-
Norwalk (City)	Norwalk, Ridgfield	Huron	30, 31, 58, 59, 60, 61, 62, 97	3.80	*	+/-	+/-
Bellevue (City)	Groton, Lyme, York	Erie, Huron, Sandusky	9, 91, 92, 93, 94, 95, 142, 143	0.40	●	+/-	+/-
Monrosville (Village)	Ridgfield	Huron		1.51	●	+/-	+/-
Willard (City)	Greenfield, New Haven, Norwich, Richmond	Huron	80	2.12	●	+/-	+/-
Attica (Village)	Venets	Seneca		2.62	●	+	+/-
New Washington (Village)	Cranberry	Crawford		5.72	*	+/-	+/-
Transportation Corridors							
SR-101	Margaretta, Margaretta Annex, Green Creek, Townsend, York	Erie, Sandusky, Seneca	107, 108, 113, 137, 138	3.47	●	+	-
SR-412	Riley, Townsend	Sandusky	111, 112, 115	3.52	●	+	-
I-80	Berlin, Groton, Milan, Oxford, Riley, Townsend	Erie, Sandusky	113, 114	0.25	●	+	-
SR-2	Berlin Annex, Huron, Margaretta, Margaretta Annex, Perkins	Erie		4.95	*	+	-
SR-13	Huron, Milan	Erie		3.95	*	+	-
US-260	Huron, Margaretta Annex, Milan, Perkins, Bronson, Norwalk	Erie, Huron	59, 97	2.84	●	+	-
SR-4	Chaffield, Groton, Margaretta, Margaretta Annex, Perkins, Lyme	Crawford, Erie, Huron, Seneca	128	0.26	●	+	-
SR-601	Milan, Norwalk, Townsend	Erie, Huron	3	4.07	*	+	-
SR-99	Groton, Oxford, Greenfield, New Haven, Peru, Ridgfield	Erie, Huron	67, 68	0.26	●	+	-
SR-113	Berlin, Groton, Milan, Oxford, Lyme, Ridgfield	Erie, Huron	3, 4, 8	0.24	●	+	-
SR-18	Norwalk, Townsend, York, Adams, Scipio, Thompson	Huron, Sandusky, Seneca		1.84	●	+	-
US-20	Lyme, Norwalk, Ridgfield, Townsend, Green Creek, York	Huron, Sandusky	32	0.35	●	+	-
SR-269	Groton, Margaretta, Margaretta Annex, Lyme, Sherman, York	Erie, Huron, Sandusky, Seneca	108, 109	0.27	●	+	-
SR-547	Lyme, Ridgfield, Sherman, Thompson	Huron, Seneca	35	0.28	●	+/-	-
SR-162	Fairfield, Greenfield, Norwich, Reed, Scipio	Huron, Seneca		0.34	●	+	+/-
SR-103	Auburn, Chaffield, Cranberry, Lykens, New Haven, Richmond	Crawford, Huron	124	3.27	●	+	-
SR-598	Auburn, New Haven, Plymouth	Crawford, Huron, Richland		5.02	*	+/-	+/-
SR-61	Berlin, Berlin Annex, Bronson, Greenfield, New Haven, Norwalk	Erie, Huron, Richland	58, 59, 60, 63, 71, 119	4.12	*	+/-	+/-
US-224	New Haven, Richmond, Ripley, Bloom, Reed, Scipio, Venets	Huron, Seneca	128, 129	0.25	●	+/-	+/-
Recreation Resources							
Local Parks and Playgrounds							
The Coupling MetroPark	Milan	Erie		4.49	*	+/-	+/-
Community Foundation Preserve at Eagle Point	Huron	Erie	144	6.86	*	+	-
Edison Woods MetroPark	Berlin	Erie	10	9.72	*	+/-	+/-
Hoffman Forest MetroPark	Berlin	Erie		8.01	*	+/-	-
Huron River Path MetroPark	Huron	Erie		7.19	*	+/-	-
Joseph Steinen Wildlife Area	Huron	Erie	144	6.81	*	+	-
Pellon Park	Perkins	Erie		6.03	*	+/-	-
Ostom MetroPark	Huron	Erie	144	6.68	*	+	+/-

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Visually Sensitive Resource	Milan Township MetroPark	Milan	Erie	1, 2, 3, 4	3.94	*	+/-		-
	Putnam Marsh	Huron, Margareta Annex	Erie		6.71	*	+/-		+/-
	Wyandot Wetland Preserve & Barnes Addition	Huron	Erie		6.73	*	+/-		+/-
	Castalia Quarry MetroPark	Margareta	Erie	110	3.53	●	+/-		-
	Castalia State Fish Hatchery	Margareta	Erie		5.43	*	+		-
	Reservoir (Monroeville City Park)	Ridgfield	Huron		2.58	●	+		-
	Seneca Caverns	Thompson	Huron		2.19	●	+		+/-
	Veteran's Memorial Lake Park	Nowalk	Huron	29, 30, 31	6.78	*	+/-		+/-
	Willard Reservoir Park (Willard City Park)	New Haven	Huron	71, 72	5.22	*	+		+/-
	Mary Fate Park	New Haven	Huron	119, 120	8.25	*	+		-
	Mill Pond Park (Magdalyn Aglier Recreation Complex)	Lyme	Huron	142, 143	1.22	●	+		+/-
	Whitney Park	Nowalk	Huron	58, 59	5.44	*	+		-
	Wickwire-Shade Preserve	Reed	Seneca	87	1.82	●	+		+/-
	Garlo Heritage Nature Preserve	Bloom	Seneca		9.91	*	+		-
	Bowen Nature Preserve	Reed	Seneca		5.75	*	+		+/-
	Blue Heron Reserve	Riley, Townsend	Sandusky	99, 101, 103, 104	9.28	*	+/-		+/-
	Ellis Park	York	Sandusky	142, 143	1.94	●	+		-
	Buckingham Park	York	Sandusky	142, 143	1.76	●	+		+/-
	Ansden Park	York	Sandusky	142, 143	2.21	●	+		-
	Kern Street Park	Lyme	Huron	95	1.37	●	+		-
	Ridge Park	Lyme	Huron	89, 95	1.09	●	+		+/-
	Robert Peters Park	York	Sandusky		2.26	●	+		+/-
	Baines Park	Nowalk	Huron		4.21	*	+		+/-
	Bicentennial Jaycee Park	Nowalk	Huron		5.50	*	+/-		-
	Bishman Park	Nowalk	Huron		4.90	*	+		+/-
	Brenser Park	Nowalk	Huron	97	5.87	*	+		-
	Lion's Park	Nowalk	Huron		5.06	*	+		+/-
	Mead Park	Nowalk	Huron		6.07	*	+		-
	Pohl Park	Nowalk	Huron	58, 59	5.42	*	+		+/-
	Soflos Family Park	Nowalk	Huron		5.65	*	+		-
	Stokely Park	Nowalk	Huron	60	4.97	*	+		+/-
	Stoulenburg Park	Nowalk	Huron	60, 61, 62, 97	5.87	*	+		-
	Suhr Family Park	Nowalk	Huron	58, 59	5.44	*	+		-
	Worker's Memorial Park	Nowalk	Huron		5.08	*	+		-
	Huron Boat Basin Marina and Amphitheater	Huron	Erie		8.02	*	+/-		-
	Andrew L. Fabens Memorial Park	Huron	Erie		7.36	*	+/-		+/-
	Lake Front Park	Huron	Erie		8.15	*	+/-		-
	Nickel Plate Beach	Huron	Erie		8.51	*	+/-		-
	Mill Long Fishing Pier & Huron Lighthouse	Huron	Erie		8.27	*	+		-
	Rolay Centennial Park	Huron	Erie		8.31	*	+		-
Huron River Boat Access	Huron	Erie		7.96	*	+/-		-	
Flemmond's Landing	Huron	Erie		8.27	*	+		-	
Oklahoma Park	Huron	Erie		7.51	*	+		-	
Main City Park	Richmond	Huron		3.11	●	+/-		+/-	
Woodbine Street Park	New Haven	Huron	80	3.67	*	+		-	
Northside Park	New Haven	Huron	80	3.10	●	+		+/-	
Soccer Complex	New Haven, Greenfield	Huron		2.64	●	+		-	
Community Park	Green Creek	Sandusky	118	8.53	*	+/-		-	
Sandusky Harbor Marina Lands	Margareta Annex	Erie		7.89	*	+/-		-	
Thaddeus Hurd Park (Cherry Street Park)	Green Creek	Sandusky	118	8.09	*	+		-	
Hendricks Park	Green Creek	Sandusky	139	8.24	*	+		+/-	
Gus Wolf Park	Green Creek	Sandusky	118	8.67	*	+/-		-	
Paden Park	Green Creek	Sandusky	118	8.46	*	+		-	
Limerick Park	Green Creek	Sandusky	139	8.35	*	+		-	
Amvets Park	Margareta Annex	Erie		8.39	*	+		-	

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Battery Park Marina & Pier	Margaretta Annex	Erie		9.02	+			-
Central Park (Miami Park)	Margaretta Annex	Erie		8.21	+			-
Churchwell Park (Macarthur Park)	Margaretta Annex	Erie		7.32	+		+	+/-
Dom Community Park (Ballfield Park)	Margaretta Annex	Erie		7.21	+		+	+/-
Epple Corner	Margaretta Annex	Erie		8.27	+		+	-
Facer Park	Margaretta Annex	Erie		8.85	+		+	-
Farwell Park	Margaretta Annex	Erie		8.00	+		+	+/-
Foxborough Park	Margaretta Annex	Erie		7.14	+		+	-
Huron Park	Margaretta Annex	Erie		8.42	+		+	-
Jackson Street Pier	Margaretta Annex	Erie		8.84	+		+	-
Jaycee Park South	Margaretta Annex	Erie		7.59	+		+/-	+/-
Kiwanis Park (Ballfield Facility)	Margaretta Annex	Erie		8.24	+		+	-
Lions Park	Margaretta Annex	Erie		7.87	+		+	-
Orlando Pace Park	Margaretta Annex	Erie		7.58	+		+	-
Pipe Creek Wildlife Area (Big Island Canoe Launch)	Margaretta Annex	Erie		8.16	+		+	-
Sandusky Bay Pavilion	Margaretta Annex	Erie		9.02	+		+	-
Schade-Mylender Plaza	Margaretta Annex	Erie		8.80	+		+	-
Schaeffler Park	Margaretta Annex	Erie		7.33	+		+	-
Shoreline Park	Margaretta Annex	Erie		8.85	+		+	-
Sprau Park	Margaretta Annex	Erie		8.38	+		+	-
Venice Park	Margaretta Annex	Erie		6.97	+		+	+/-
Washington Parks	Margaretta Annex	Erie		8.60	+		+	-
Washington Street Pier	Margaretta Annex	Erie		8.82	+		+	-
Wichman-Wieber Park (Jaycee North)	Margaretta Annex	Erie		7.97	+		+	-
Wilbert Park	Margaretta Annex	Erie		7.31	+		+	-
Lions Park	Margaretta, Margaretta Annex	Erie		3.97	+		+/-	-
McGuan Park	Novalk	Huron		4.74	+		+	-
Willard Park	Richmond	Huron	80	2.95	●		+/-	+/-
Forest Lake Park	Greenfield	Huron		3.18	●		+/-	-
Trails and Bike Routes								
Lake Shore Electric Trail	Huron	Erie		7.37	+		+/-	+/-
OH 101 Bike Route	Margaretta, Townsend	Erie, Sandusky		3.47	●		+/-	+/-
W Bogart Rd Bike Route	Margaretta	Erie		3.92	+		+/-	+/-
Bike Path	Berlin Annex, Huron, Margaretta, Margaretta Annex, Perkins,	Erie, Huron, Richland, Sandusky	111, 112, 115, 119, 142, 144	0.56	●		+/-	+/-
Water Resources								
Mills Creek	Golon, Margaretta, Margaretta Annex, Perkins	Erie		0.62	●		+/-	+/-
Liles Ditch	Margaretta, Perkins	Erie		2.98	●		+/-	+/-
Dauch Ditch	Huron, Perkins	Erie		3.78	+		+/-	+/-
Hemming Ditch	Margaretta Annex, Perkins	Erie		3.77	+		+/-	+/-
Hemminger Ditch Stream	Perkins	Erie		4.51	+		+/-	+/-
Lindsley Ditch	Perkins	Erie		3.38	●		+/-	+/-
Plum Brook	Huron, Perkins	Erie		3.04	●		+/-	+/-
Sulphur Brook	Perkins	Erie		4.54	+		+/-	+/-
Taylor Ditch	Margaretta Annex, Perkins	Erie		2.99	●		+/-	+/-
Mud Brook	Huron, Milan	Erie		4.14	+		+/-	+/-
Sawmill Creek	Huron	Erie		4.49	+		+/-	+/-
East Branch Huron River	Milan, Bronson, Fairfield, Norwalk, Peru, Ridgefield	Erie, Huron		2.54	●		+/-	+/-
Huron River	Huron, Milan	Erie		2.53	●		+/-	+/-
West Branch Huron River	Milan, Oxford, Greenfield, New Haven, Peru, Ridgefield, Ripley	Erie, Huron, Richland	28	0.99	●		+/-	+/-
Seymour Creek	Lyme, Ridgefield	Huron		0.12	●		+/-	+/-
Megginson Creek	Lyme	Huron		0.21	●		+	+/-
Cole Creek	Bronson, Norwalk, Ridgefield	Huron		5.24	+		+/-	+/-
Norwalk Creek	Norwalk, Ridgefield, Townsend	Huron		5.23	+		+/-	+/-
Pickrel Creek	Riley, Townsend, York	Sandusky		4.77	+		+/-	+/-

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Raccoon Creek	Green Creek, Riley, York	Sandusky	118	5.31	*	+/-	+/-	
Royer Ditch	Thompson	Seneca		3.59	*	+/-	+/-	
Frink Run	Lyme, Peru, Ridgefield, Sherman, Reed	Huron, Seneca	53	0.03	●	+/-	+/-	
Carpenter Ditch	Reed	Seneca		4.31	*	+/-	+/-	
Rushie Ditch	Reed, Scipio	Seneca		4.59	*	+/-	+/-	
Slate Run	Norwich, Peru, Ridgefield, Sherman, Reed	Huron, Seneca		0.03	●	+/-	+/-	
Mud Run	Norwich, Reed	Huron, Seneca		0.30	●	+	+/-	
Shriner Ditch	Reed	Seneca		1.97	●	+	+/-	
Snyders Ditch	Groton, Lyme	Erie, Huron		0.24	●	+	+/-	
Strong Creek	Townsend, York	Sandusky		4.42	*	+/-	+/-	
Haas Ditch	Sherman	Huron		0.53	●	+	+/-	
Holiday Lakes	Greenfield	Huron		1.61	●	+	+/-	
Alcholz Ditch	Bloom, Venice	Seneca		4.13	*	+/-	+/-	
Honey Creek	Auburn, Richmond, Bloom, Venice	Crawford, Huron, Seneca		1.00	●	+/-	+/-	
Broken Knite Creek	Chalfield, Cranberry, Venice	Crawford, Seneca		3.71	*	+/-	+/-	
Brokenknife Creek	Cranberry, Richmond, Venice	Crawford, Huron, Seneca		1.18	●	+/-	+/-	
Dahs Ditch	Perkins	Erie		3.11	●	+	+/-	
Pipe Creek	Groton, Margaretta Annex, Oxford, Perkins	Erie		0.62	●	+/-	+/-	
Bellevue Reservoir	Lyme, Sherman	Huron	38, 39, 40, 41, 42, 43, 44, 45	0.36	●	+	+/-	
Baltimore and Ohio Reservoir	Richmond	Huron		2.66	●	+/-	+/-	
Holiday Lakes	Greenfield, Norwich	Huron		0.75	●	+/-	+/-	
Willard Reservoir	New Haven	Huron	71, 72	4.90	*	+/-	+/-	
Golf Courses								
Twin Lake Golf Course	York	Sandusky		1.78	●	+	+/-	
Sleepy Hollow Golf Course	Townsend, York	Sandusky		4.46	*	+	+/-	
Woussickett Golf Course	Oxford, Perkins	Erie		1.78	●	+/-	+/-	
Schools and Colleges								
Margaretta Local Schools	Margaretta	Erie	109	3.78	*	+/-	+/-	
Playland Daycares	Margaretta	Erie		3.92	*	+/-	+/-	
Freilands Christian Academy	Margaretta	Erie		3.93	*	+	+/-	
Margaretta Local Schools	Margaretta	Erie	107, 108	4.05	*	+/-	+/-	
Bogart Elementary School	Margaretta	Erie		4.07	*	+	+/-	
Margaretta Preschool	Margaretta	Erie		4.07	*	+	+/-	
Margaretta Local Schools Junior High School	Margaretta	Erie		4.08	*	+/-	+/-	
Perkins Public School District	Perkins	Erie		4.53	*	+/-	+/-	
Kaleidoscope Center	Huron, Perkins	Erie		4.99	*	+/-	+/-	
Erie County	Huron, Perkins	Erie		4.99	*	+/-	+/-	
Ehove Ghrist Adult Career Center	Milan	Erie		2.42	●	+	+/-	
Trainco Truck Driving Schools	Milan	Erie		2.47	●	+/-	+/-	
Nonwalk Catholic School Nonwalk Catholic School	Nonwalk	Huron		4.77	*	+	+/-	
League Elementary School	Nonwalk	Huron		4.90	*	+	+/-	
Erie Huron Cac Headstart	Nonwalk	Huron		4.86	*	+	-	
Erie-Huron Cac	Nonwalk	Huron		4.85	*	+	-	
Nonwalk Driving School	Nonwalk	Huron		4.15	*	+/-	+/-	
Berlin Milan Schools	Milan	Erie	7	4.02	*	+/-	-	
Wisos Child Development Programs	Lyme	Huron	142, 143	1.03	●	+/-	+/-	
St Paul's Christian Day Care	York	Sandusky		1.91	●	+	+/-	
St John Christian Preschool	Lyme, York	Huron, Sandusky		1.55	●	+	+/-	

Visually Sensitive Resource	Location			Distance ²	Distance Zone		Project Visibility	
							+ Visible - Not Visible +/- Partially Visible	
	Town	County	VP Number ¹	Miles from Nearest Turbine	I Foreground I Midground I Background	DTM (Topography)	DSM (Topography, Vegetation & Structures)	
Immaculate Conception School	Lyme, York	Huron, Sandusky		1.45	●	+/-	+/-	
Ridge Elementary School	Lyme	Huron		0.89	●	+	+/-	
Immaculate Conception School	Lyme, York	Huron, Sandusky		1.62	●	+	+/-	
Monroeville Parochial St. Joseph School	Ridgfield	Huron		2.26	●	+/-	+/-	
Monroeville Local Schools	Ridgfield	Huron		2.01	●	+	+/-	
Monroeville Elementary School	Ridgfield	Huron		2.01	●	+	+/-	
Premier Christian Preschool	York	Sandusky		2.01	●	+	+/-	
Thompson Bible Institute	Thompson	Seneca		3.77	*	+	+/-	
Huron County Help Me Grow	New Haven	Huron		3.88	*	+/-	+/-	
Kindercrest Child	New Haven	Huron		3.62	*	+/-	+/-	
Central Elementary School	New Haven, Richmond	Huron		3.04	●	+	+/-	
After School Support & Enrichment Program	New Haven	Huron		3.04	●	+	+/-	
Grace Christian Preschool	New Haven	Huron		3.05	●	+/-	+/-	
Celeryville Christian School	New Haven, Richmond	Huron		4.58	*	+/-	+/-	
Willard City Schools	New Haven, Richmond	Huron		3.52	●	+	+/-	
St Francis Xavier Church	New Haven	Huron		3.66	*	+	+/-	
Willard City Schools	New Haven	Huron		3.54	●	+	+/-	
Schools	Lyme, York	Huron, Sandusky		2.07	●	+/-	+/-	
First United Methodist Church-Belleue	Lyme, York	Huron, Sandusky		1.76	●	+	+/-	
Schumaker Elementary School	Lyme, York	Huron, Sandusky		1.66	●	+	+/-	
Belleue Middle School	Lyme, York	Huron, Sandusky		1.66	●	+	+/-	
Greenfield Elementary School	Greenfield	Huron		2.83	●	+/-	+/-	
Alica Elementary School	Veneto	Seneca		2.84	●	+	+/-	
Master Driving School	Veneto	Seneca		2.84	●	+	+/-	
Seneca East Schools	Veneto	Seneca		2.84	●	+	+/-	
Seneca East Elementary School	Veneto	Seneca		4.55	*	+	+/-	
In His Care Learning Center	Veneto	Seneca		3.19	●	+	+/-	
Libraries								
Lynchburg Public Library	Illian	Erie		4.16	*	+	-	
Milan Public Library	Milan	Erie	3	4.09	*	+	-	
Belleue Public Library	Lyme	Huron		1.67	●	+	+/-	
Monroeville Public Library	Ridgfield	Huron		2.53	●	+	-	
Willard Memorial Library	New Haven	Huron		3.39	●	+	-	
Seneca East Public Library	Veneto	Seneca		3.27	●	+	-	
Airports								
Willard Airport	New Haven	Huron		4.16	*	+/-	+/-	
Cemeteries								
Cassalia Cemetery	Margaretta	Erie		3.89	*	+/-	+/-	
Parkhurst Cemetery	Townsend	Sandusky		3.96	*	+/-	+/-	
Devo-Bolles Cemetery	Groton	Erie		1.67	●	+/-	+/-	
Tew Cemetery	Townsend	Sandusky		3.54	●	+/-	+/-	
Graves-White Cemetery	Margaretta	Erie		2.47	●	+/-	+/-	
Sand Hill Cemetery	Groton, Margaretta	Erie		1.77	●	+	+/-	
Bogart-Old Stone House-Beatty Cemetery	Perkins	Erie		4.64	*	+/-	+/-	
Perkins-Bogart Cemetery	Perkins	Erie		4.89	*	+/-	+/-	
Saint Johns United Church Of Christ-St Johns Evangelical And Reformed-St Johannes Evangelical So	Oxford	Erie	16	0.93	●	+	+/-	
James Cemetery	Perkins	Erie		3.85	*	+	+/-	
Willmer-Willmer Cemetery	Perkins	Erie		4.73	*	+/-	+/-	
Baum Cemetery	Perkins	Erie		3.64	*	+	+/-	
Fischer/Fisher Cemetery	Perkins	Erie		3.47	●	+	+/-	
Sweet Cemetery	Milan	Erie		3.99	*	+/-	+/-	
Saint Johns Union Corners-Saint Johns Cemetery	Illian	Erie		2.89	●	+	+/-	

Location			Distance ²		Project Visibility		
			Distance Zone	+ Visible - Not Visible +/- Partially Visible			
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	I Foreground / Midground / Background	DTM (Topography)	DSM (Topography, Vegetation & Structures)
North Milan Hill/Milan North Cemetery	Milan	Erie		3.93	+	+/-	+/-
Scotts Cemetery	Milan	Erie		4.24	*	+/-	+/-
Saint Johns Cemetery	Milan	Erie		4.99	*	+/-	+/-
Ruggles Cemetery	Ridgefield	Huron		2.61	●	+/-	+/-
Page Farm Cemetery	Oxford, Ridgefield	Erie, Huron	27	0.91	●	+/-	+/-
Shoat Burial Lot Cemetery	Nowalk	Huron		3.13	●	+/-	+/-
Saint Anthony's Cemetery	Milan	Erie	5	4.41	*	+/-	-
Webb Cemetery	Ridgefield	Huron		2.95	●	+/-	+/-
Milan Cemetery	Milan	Erie	5, 6	4.39	*	+/-	-
Comstock Farm Cemetery	Nowalk	Huron		4.80	*	+/-	-
Jacobsburg-Shaws Mills-Rice Cemetery	Nowalk	Huron		3.06	●	+/-	+/-
Drake Cemetery	Oxford, Ridgefield	Erie, Huron		1.58	●	+/-	+/-
Enterprise Cemetery	Milan	Erie		3.37	●	+/-	+/-
Strongs Ridge-Lymes Grange Cemetery	Lyme	Huron		1.28	●	+	+/-
Littlefield Farm Cemetery	Ridgefield	Huron		1.72	●	+	+/-
North Monroeville Cemetery	Ridgefield	Huron		0.42	●	+	+/-
Trinity Episcopal Cemetery	Lyme	Huron		0.85	●	+	+/-
Bellevue Cemetery	Lyme, York	Huron, Sandusky	142	1.26	●	+/-	+/-
Saint Paul United Church Of Christ-Reformed Cemetery	York	Sandusky		1.93	●	+	+/-
Immaculate Conception Catholic-Bellevue Catholic Cemetery	Lyme	Huron	142	1.19	●	+	+/-
Sparrow Farm Cemetery	Lyme	Huron		0.13	●	+	+/-
Old Saint Joseph Catholic-(Saint Joseph) Cemetery	Ridgefield	Huron		2.27	●	+/-	+/-
New Saint Joseph Catholic-(Saint Joseph) Cemetery	Ridgefield	Huron		2.71	●	+/-	+/-
Riverside Cemetery	Ridgefield	Huron		2.65	●	+	+/-
Gilbert-Cholera-Collins-Portland Road Cemetery	York	Sandusky		5.00	*	+	+/-
York Free Chapel-York Chapel Cemetery	York	Sandusky		4.26	*	+/-	+/-
Raymond-(Lyme) Cemetery	Lyme, Ridgefield	Huron		0.55	●	+	+/-
Heyman-Hunts Corners-Sutton Cemetery	Lyme	Huron	34	1.05	●	+	+/-
Fireside Cemetery	Thompson	Seneca		3.68	●	+	+/-
(Flat Rock)-Bishop Seybert Cemetery	Thompson	Seneca		1.98	●	+/-	+/-
Saint Paul German Lutheran-(Saint Pauls) Cemetery	Lyme	Huron		0.50	●	+	+/-
Underhill Cemetery	Thompson	Seneca		2.48	●	+	+/-
Dunkirk-(Thompson Center) Cemetery	Thompson	Seneca		3.65	*	+/-	+/-
Saint Michaels/Michael Cemetery	Thompson	Seneca		0.90	●	+	+/-
Jones-Sherman Farm Cemetery	Sherman	Huron		1.07	●	+	+/-
Saint Sebastian Catholic Cemetery	Sherman	Huron		0.80	●	+	+/-
Assumption Cemetery	Reed	Seneca		2.37	●	+	+/-
Omar Cemetery	Reed	Seneca		1.90	●	+	+/-
Banks Of Mud Run Cemetery	Nowich	Huron		0.29	●	+	+/-
Boughton-North Norwich Cemetery	Nowich	Huron		0.29	●	+	+/-
West Farm Burying Ground-Old Alonzo West Cemetery	Peru	Huron		3.62	*	+/-	+/-
Wurts Cemetery	Nowich	Huron		0.95	●	+	+/-
New Greenwood-Greenwood Cemetery	New Haven	Huron		3.13	●	+/-	+/-
Centerlon Cemetery	Nowich	Huron		0.83	●	+	+/-
Old Greenwood Cemetery	New Haven	Huron		3.14	●	+/-	+/-
Saint Joseph Catholic-(Saint Josephs) Cemetery	Richmond	Huron	80	2.83	●	+/-	+/-
Trinity Lutheran-Lutheran Cemetery	Richmond	Huron		2.34	●	+	+/-

Location				Distance ²		Project Visibility	
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	Distance Zone	DTM (Topography)	DSM (Topography, Vegetation & Structures)
				I Foreground Midground Background	+ Visible - Not Visible +/- Partially Visible		
Richards Cemetery	New Haven, Richmond	Huron		3.21	●	+/-	+/-
Memnonite Cemetery	Richmond	Huron		2.46	●	+/-	+/-
Wales Corners Cemetery	York	Sandusky		4.23	*	+/-	+/-
Avery-Wickwire Cemetery	York	Sandusky		1.73	●	+	+/-
Pontiac-Saint Peters Lutheran Cemetery	Peru	Huron		1.26	●	+	+/-
Wilson Cemetery	Peru, Sherman	Huron		1.65	●	+	+/-
Adams Farm Cemetery	Peru	Huron		4.11	*	+	+/-
Vanline Cemetery	Peru	Huron		3.73	*	+/-	+/-
Peru Center-School House Cemetery	Peru	Huron		3.78	*	+	+/-
Spencer Farm Cemetery	Greenfield	Huron		3.71	*	+/-	+/-
Stauben Cemetery	Greenfield	Huron		2.81	●	+/-	+/-
Altica-Venice-Venice Township Cemetery	Venice	Seneca	126	2.76	●	+	+/-
Saints Peter And Paul Cemetery	Venice	Seneca	126, 127	2.69	●	+	+/-
Higley Farm Cemetery	Richmond	Huron	82, 83	0.19	●	+	+/-
East Caroline Reformed Cemetery	Venice	Seneca		3.41	●	+	+/-
Swamp-Union Pisgah Cemetery	Venice	Seneca		2.88	●	+	+/-
Unidentified #1 Cemetery	Venice	Seneca		3.42	●	+	+/-
Smith Cemetery	Venice	Seneca		4.02	*	+	+/-
Caroline Lutheran Cemetery	Venice	Seneca		3.38	●	+/-	+/-
Bethel-Richmond Township Cemetery	Richmond	Huron		0.16	●	+	+/-
Bullhead-Fackler-Moore-Richmond Township Cemetery	Richmond	Huron	76	2.38	●	+	+/-
Pipe Creek Cemetery	Gorton, Oxford, Perkins	Erie		1.79	●	+	+/-
Krauer Cemetery	Perkins	Erie		3.52	●	+	+/-
Bloomington Cemetery	Oxford	Erie		1.82	●	+	+/-

¹ If no viewpoint (VP) number is indicated, no photo was obtained during fieldwork.

² For large areas and linear sites, approximate distance to the nearest turbine was measured from the respective area's closest point.

Appendix C

Photo Log



Viewpoint #1

View from West Front Street
in the Village of Milan,
Erie County, looking West-
Southwest

Latitude: 41.29736667° N
Longitude: 82.60863333° W



Viewpoint #2

View from Milan Green/
Business District, Main
Street in the Village of Milan,
Erie County, looking West-
Southwest

Latitude: 41.29860000° N
Longitude: 82.60585000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #3

View from Milan Library,
Main Street in the Village of
Milan, Erie County, looking
Southwest

Latitude: 41.29805000° N
Longitude: 82.60534167° W



Viewpoint #4

View from East Church Street
in the Village of Milan, Erie
County, looking Southwest

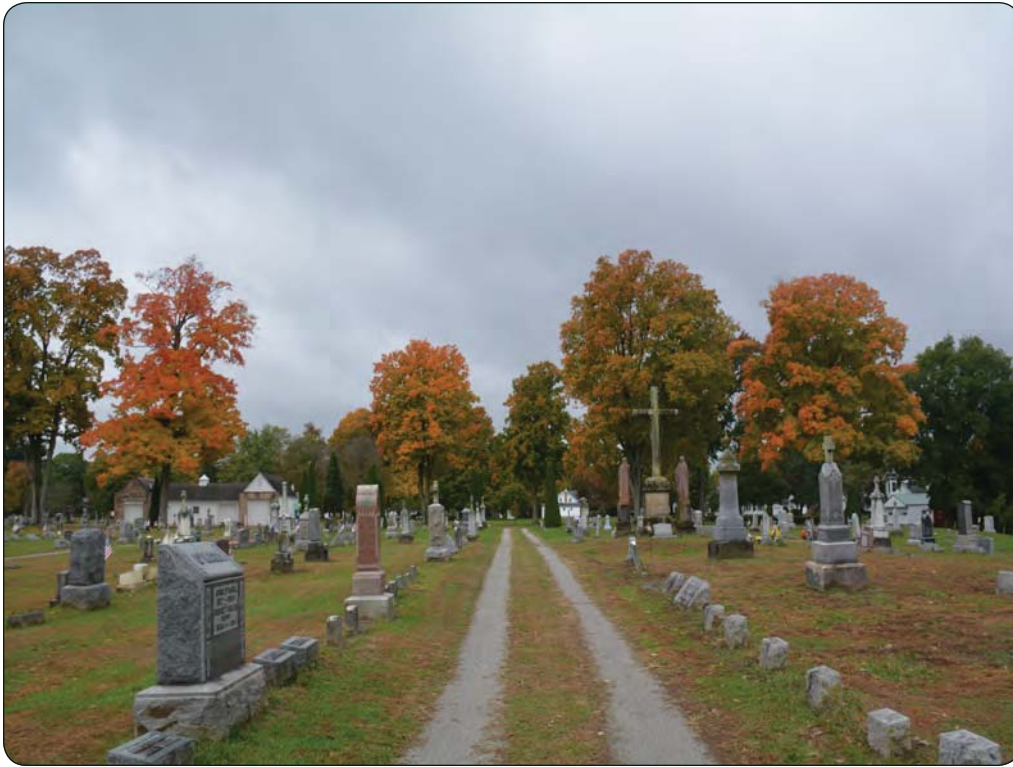
Latitude: 41.29895000° N
Longitude: 82.60346667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #5

View from Cemetary
St. Anthony in the Village of
Milan, Erie County, looking
Southwest

Latitude: 41.29508333° N
Longitude: 82.59650000° W



Viewpoint #6

View from Eddison Park,
Berlin Street in the Village of
Milan, Erie County, looking
Southwest

Latitude: 41.29608333° N
Longitude: 82.59653333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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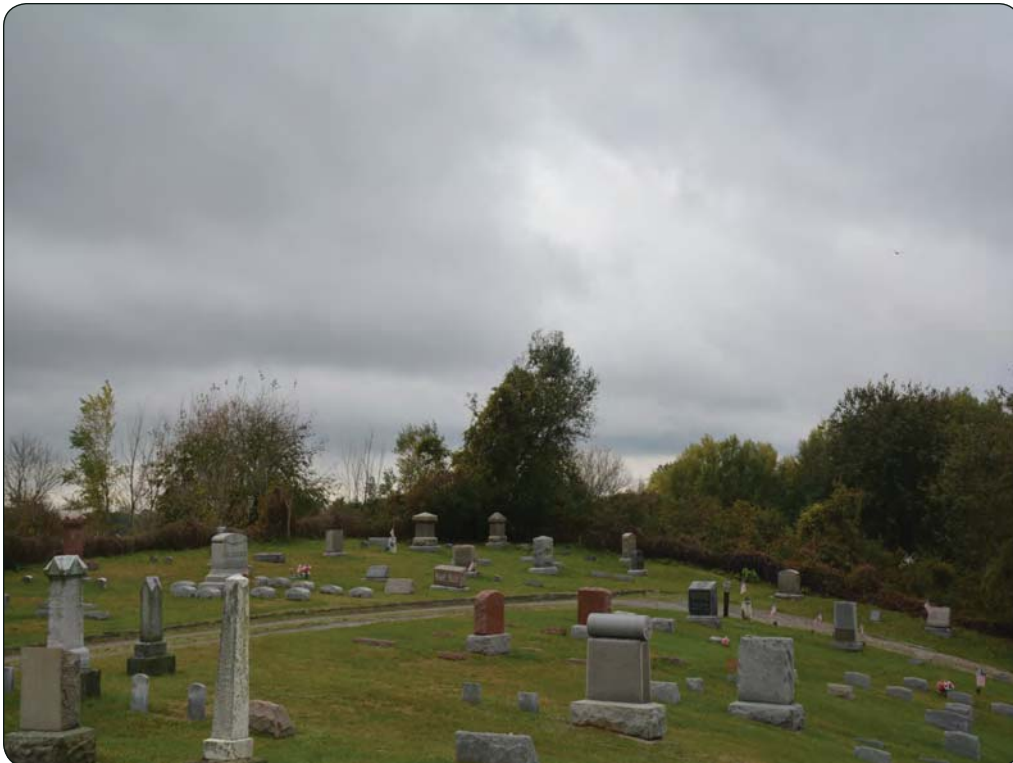




Viewpoint #7

View from Milan Historic District, South Center Street in the Township of Milan, Erie County, looking Northwest

Latitude: 41.29468333° N
Longitude: 82.60166667° W



Viewpoint #8

View from Berlinville Cemetery, State Route 113 in the Township of Berlin, Erie County, looking Southwest

Latitude: 41.30238333° N
Longitude: 82.52093333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #9

View from County Route 132
(Berlin Road) in the Village of
Berlin Heights, Erie County,
looking West-Southwest

Latitude: 41.31693333° N
Longitude: 82.49981667° W



Viewpoint #10

View from Edison Woods
Metro Park, West Oak Hickory
Trail in the Township of Berlin,
Erie County, looking West-
Southwest

Latitude: 41.34685000° N
Longitude: 82.48650000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #11

View from East Mason Road
in the Township of Milan, Erie
County, looking Southwest

Latitude: 41.32931667° N
Longitude: 82.55925000° W



Viewpoint #12

View from West Mason
Road in the Township of
Oxford, Erie County, looking
Southwest

Latitude: 41.33548333° N
Longitude: 82.65011667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #13

View from West Mason Road
in the Township of Oxford,
Erie County, looking South

Latitude: 41.35345000° N
Longitude: 82.71095000° W



Viewpoint #14

View from Erie Sand Barrens
Nature Preserve, County
Road 12 (Scheid Rd) in the
Township of Oxford, Erie
County, looking Southwest

Latitude: 41.35850000° N
Longitude: 82.70760000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #15

View from County Road 44
(Ransom Rd) in the Township
of Oxford, Erie County,
looking South-Southwest

Latitude: 41.35698333° N
Longitude: 82.69441667° W



Viewpoint #16

View from St. Johns United
Church of Christ Parking Lot,
County Road 114 (Thomas
Rd) in the Township of
Oxford, Erie County, looking
Southwest

Latitude: 41.34196667° N
Longitude: 82.67150000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #17

View from County Road 114
(Thomas Rd) in the Township
of Oxford, Erie County,
looking West-Southwest

Latitude: 41.33780000° N
Longitude: 82.67261667° W



Viewpoint #18

View from County Road 114
(Thomas Rd), at Interstate
Overpass in the Township of
Oxford, Erie County, looking
West-Southwest

Latitude: 41.33531667° N
Longitude: 82.67350000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #19

View from County Road 114
(Thomas Rd) in the Township
of Oxford, Erie County,
looking West

Latitude: 41.32631667° N
Longitude: 82.67365000° W



Viewpoint #20

View from County Road
15 (Strecker Road) in the
Township of Oxford, Erie
County, looking Northwest

Latitude: 41.32310000° N
Longitude: 82.67451667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #21

View from County Road 15 (Strecker Road) in the Township of Oxford, Erie County, looking North

Latitude: 41.32325000° N
Longitude: 82.68223333° W



Viewpoint #22

View from County Road 44 (Ransom Rd) in the Township of Oxford, Erie County, looking Northeast

Latitude: 41.32281667° N
Longitude: 82.69325000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #23

View from Oxford Township Offices and Slugger Field, County Road 44 (Ransom Rd) in the Township of Oxford, Erie County, looking Southwest

Latitude: 41.31193333° N
Longitude: 82.69210000° W



Viewpoint #24

View from County Road 44 (Ransom Rd) in the Township of Oxford, Erie County, looking South-Southeast

Latitude: 41.30765000° N
Longitude: 82.69241667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #25

View from County Road 44
(Ransom Rd) in the Township
of Oxford, Erie County,
looking West

Latitude: 41.30325000° N
Longitude: 82.69255000° W



Viewpoint #26

View from County Road 44
(Ransom Rd) in the Township
of Oxford, Erie County,
looking North-Northeast

Latitude: 41.29441667° N
Longitude: 82.69233333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #27

View from County Road 45 (Peru Center Rd) in the Township of Ridgefield, Huron County, looking North-Northwest

Latitude: 41.28435000° N
Longitude: 82.67735000° W



Viewpoint #28

View from County Road 48 (Lovers Lane Rd) in the Township of Oxford, Erie County, looking Southwest

Latitude: 41.28673333° N
Longitude: 82.64271667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #29

View from Memorial Reservoir
in the City of Norwalk, Huron
County, looking West

Latitude: 41.23210000° N
Longitude: 82.58526667° W



Viewpoint #30

View from Memorial Reservoir
in the City of Norwalk, Huron
County, looking Southwest

Latitude: 41.23101667° N
Longitude: 82.58698333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #31

View from Memorial Reservoir in the City of Norwalk, Huron County, looking North-Northwest

Latitude: 41.23373333° N
Longitude: 82.58246667° W



Viewpoint #32

View from United States Route 20 in the Township of Ridgefield, Huron County, looking West

Latitude: 41.23266667° N
Longitude: 82.67305000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #33

View from County Road 40
(Sand Hill Rd) in the Township
of Lyme, Huron County,
looking Northwest

Latitude: 41.22975000° N
Longitude: 82.75868333° W



Viewpoint #34

View from Lime Cemetary,
County Road 40 (Sand Hill
Rd) in the Township of Lyme,
Huron County, looking North-
Northeast

Latitude: 41.22020000° N
Longitude: 82.75388333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #35

View from Hunts Corner,
County Road 40 (Sand
Hill Rd) in the Township of
Lyme, Huron County, looking
Northeast

Latitude: 41.22735000° N
Longitude: 82.75725000° W



Viewpoint #36

View from Bellevue Reservoir
in the Township of Lyme,
Huron County, looking
Southwest

Latitude: 41.21768333° N
Longitude: 82.77711667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #37

View from Bellevue Reservoir
in the Township of Lyme,
Huron County, looking
Northeast

Latitude: 41.21738333° N
Longitude: 82.77475000° W



Viewpoint #38

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking North-
Northwest

Latitude: 41.21468333° N
Longitude: 82.77255000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #39

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking South-
Southwest

Latitude: 41.21176667° N
Longitude: 82.77565000° W



Viewpoint #40

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking North-
Northeast

Latitude: 41.21195000° N
Longitude: 82.77811667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #41

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking
Southwest

Latitude: 41.21205000° N
Longitude: 82.77843333° W



Viewpoint #42

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking
Southwest

Latitude: 41.21261667° N
Longitude: 82.77941667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #43

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking North-
Northeast

Latitude: 41.21385000° N
Longitude: 82.78036667° W



Viewpoint #44

View from Bellevue Reservoir
in the Township of Sherman,
Huron County, looking South

Latitude: 41.21465000° N
Longitude: 82.78053333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #45

View from Bellevue Reservoir
in the Township of Lyme,
Huron County, looking
Northeast

Latitude: 41.21663333° N
Longitude: 82.77958333° W



Viewpoint #46

View from Bellevue Reservoir
Access Road in the Township
of Lyme, Huron County,
looking North

Latitude: 41.21980000° N
Longitude: 82.77630000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #47

View from County Road 30
(Section Line Rd 30 North)
in the Township of Lyme,
Huron County, looking North-
Northeast

Latitude: 41.21963333° N
Longitude: 82.78905000° W



Viewpoint #48

View from County Road 30
(Section Line Rd 30 North)
in the Township of Lyme,
Huron County, looking North-
Northeast

Latitude: 41.22750000° N
Longitude: 82.78930000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

Appendix C: Photo Log Sheet 24 of 72





Viewpoint #49

View from intersection of County Road 30 (Section Line Rd 30 North) and County Road 25 (Opperman Rd) in the Township of Lyme, Huron County, looking North-Northeast

Latitude: 41.23385000° N
Longitude: 82.78906667° W



Viewpoint #50

View from County Road 30 (Section Line Road 30 North) in the Township of Sherman, Huron County, looking Southeast

Latitude: 41.21533333° N
Longitude: 82.78896667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #51

View from County Road 30
(Section Line Road 30 North)
in the Township of Sherman,
Huron County, looking
Southwest

Latitude: 41.21101667° N
Longitude: 82.78880000° W



Viewpoint #52

View from County Road 30
(Section Line Road 30 North)
in the Township of Sherman,
Huron County, looking North-
Northeast

Latitude: 41.20530000° N
Longitude: 82.78853333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #53

View from County Road 30
(Section Line Road 30 North)
in the Township of Sherman,
Huron County, looking North-
Northeast

Latitude: 41.19308333° N
Longitude: 82.78806667° W



Viewpoint #54

View from County Road 30
(Section Line Road 30 North)
in the Township of Sherman,
Huron County, looking North-
Northeast

Latitude: 41.18320000° N
Longitude: 82.78771667° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #55

View from County Road 64
(Pontiac Section Line Road)
in the Township of Sherman,
Huron County, looking North-
Northeast

Latitude: 41.17941667° N
Longitude: 82.78421667° W



Viewpoint #56

View from County Road 64
(Pontiac Section Line Road)
in the Township of Sherman,
Huron County, looking North

Latitude: 41.17931667° N
Longitude: 82.78033333° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #57

View from County Road 22
(Prairie Rd) in the Township of
Lyme, Huron County, looking
South

Latitude: 41.23981998° N
Longitude: 82.81961700° W



Viewpoint #58

View from intersection of
State Route 61 (E Main St.)
and South Linwood Avenue
in the City of Norwalk, Huron
County, looking Southwest

Latitude: 41.24279698° N
Longitude: 82.61453597° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #59

View from intersection of State Route 61 (W Main St.) and Whittlesey Avenue in the City of Norwalk, Huron County, looking Southwest

Latitude: 41.24245098° N
Longitude: 82.61572000° W



Viewpoint #60

View from intersection of State Route 61 (W Main St.) and Cortland Street in the City of Norwalk, Huron County, looking Southwest

Latitude: 41.23841903° N
Longitude: 82.62488896° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #61

View from County Road 4 (Fair Rd) County Fair Grounds Parking in the Township of Norwalk, Huron County, looking Southwest

Latitude: 41.22660801° N
Longitude: 82.62315600° W



Viewpoint #62

View from Norwalk High School, off of Shady Lane Road in the City of Norwalk, Huron County, looking West-Southwest

Latitude: 41.22423702° N
Longitude: 82.61060502° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #63

View from State Route 61
in the Township of Bronson,
Huron County, looking West

Latitude: 41.18623498° N
Longitude: 82.63847100° W



Viewpoint #64

View from County Road
92 (Peru Hollow Rd) in the
Township of Peru, Huron
County, looking South-
Southeast

Latitude: 41.16986303° N
Longitude: 82.64277100° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #65

View from County Road 92 (Snyder Rd) in the Township of Peru, Huron County, looking Southwest

Latitude: 41.16706297° N
Longitude: 82.66586498° W



Viewpoint #66

View from County Road 65 (Peru West Section Line Road) in the Township of Peru, Huron County, looking West-Northwest

Latitude: 41.17555903° N
Longitude: 82.70529597° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #67

View from intersection of State Route 99 and County Road 31 (Dogtown Rd) in the Township of Peru, Huron County, looking West

Latitude: 41.15648601° N
Longitude: 82.72855299° W



Viewpoint #68

View from State Route 99 in the Township of Greenfield, Huron County, looking West

Latitude: 41.14107303° N
Longitude: 82.72952302° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #69

View from County Road 100
(Hanville Corners Rd) in the
Township of Greenfield, Huron
County, looking West

Latitude: 41.11993404° N
Longitude: 82.67789603° W



Viewpoint #70

View from County Road 133
(Mill Rd) in the Township of
Greenfield, Huron County,
looking Northwest

Latitude: 41.09824402° N
Longitude: 82.66707500° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #71

View from State Route 61
Pull-Off, Willard Reservoir in
the Township of New Haven,
Huron County, looking West-
Northwest

Latitude: 41.06534002° N
Longitude: 82.66698296° W



Viewpoint #72

View from State Route
61 Parking Area, Willard
Reservoir in the Township of
New Haven, Huron County,
looking West

Latitude: 41.05721503° N
Longitude: 82.66337799° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #73

View from off of County Road 82 (Bullhead Rd), Willard Marsh Entrance in the Township of Richmond, Huron County, looking West-Northwest

Latitude: 41.03252001° N
Longitude: 82.75064601° W



Viewpoint #74

View from Willard Marsh Trail in the Township of Richmond, Huron County, looking Northwest

Latitude: 41.03154503° N
Longitude: 82.75108002° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #75

View from off of County Road 30 (Section Line Rd 30 S), Willard Marsh Wildlife Area in the Township of Richmond, Huron County, looking North

Latitude: 41.01399299° N
Longitude: 82.78089202° W



Viewpoint #76

View from Intersection of County Road 30 (Section Line Road 30 North) and Bull Head Road in the Township of Richmond, Huron County, looking Northwest

Latitude: 41.03114798° N
Longitude: 82.78191604° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #77

View from Intersection of County Road 30 (Section Line Road 30 North) and State Route 244 in the Township of Richmond, Huron County, looking North

Latitude: 41.04312304° N
Longitude: 82.78210103° W



Viewpoint #78

View from County Road 30 (Section Line Road 30 North) in the Township of Richmond, Huron County, looking North

Latitude: 41.04800901° N
Longitude: 82.78213698° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #79

View from County Road 78 (Willard West Rd) in the Township of Richmond, Huron County, looking West

Latitude: 41.05521603° N
Longitude: 82.77987496° W



Viewpoint #80

View from Willard Park Bleachers in the City of Willard, Huron County, looking West-Northwest

Latitude: 41.05352003° N
Longitude: 82.73680899° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #81

View from County Road 78 (Willard West Rd) in the Township of Richmond, Huron County, looking West-Northwest

Latitude: 41.05661203° N
Longitude: 82.78738003° W



Viewpoint #82

View from intersection of County Road 78 (Willard West Rd) and County Road 75 (Willoughby Rd) in the Township of Richmond, Huron County, looking West

Latitude: 41.05721704° N
Longitude: 82.81847304° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #83

View from intersection of County Road 78 (Willard West Rd) and County Road 75 (Willoughby Rd) in the Township of Richmond, Huron County, looking South-Southwest

Latitude: 41.05729097° N
Longitude: 82.81967299° W



Viewpoint #84

View from County Road 75 (Willoughby Rd) in the Township of Richmond, Huron County, looking South-Southwest

Latitude: 41.06731203° N
Longitude: 82.81984398° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #85

View from County Road 12
(Townline Rd 12 W) in the
Township of Richmond, Huron
County, looking South-
Southwest

Latitude: 41.07064904° N
Longitude: 82.82135499° W



Viewpoint #86

View from South Township
Road 197 in the Township of
Reed, Seneca County, looking
Northeast

Latitude: 41.09264600° N
Longitude: 82.84226499° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #87

View from East Township
Road 106 in the Township of
Reed, Seneca County, looking
East

Latitude: 41.09519402° N
Longitude: 82.86707299° W



Viewpoint #88

View from County Road 22
(Prairie Rd) in the Township of
Lyme, Huron County, looking
Northeast

Latitude: 41.25216804° N
Longitude: 82.82005303° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #89

View from Bellevue Reservoir
in the City of Bellevue,
Huron County, looking East-
Southeast

Latitude: 41.26404000° N
Longitude: 82.81961599° W



Viewpoint #90

View from Bellevue Reservoir
in the City of Bellevue, Huron
County, looking South

Latitude: 41.26288497° N
Longitude: 82.81953000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #91

View from Bellevue Reservoir
in the City of Bellevue, Huron
County, looking Southeast

Latitude: 41.26150397° N
Longitude: 82.81949102° W



Viewpoint #92

View from Bellevue Reservoir
in the City of Bellevue, Huron
County, looking Southeast

Latitude: 41.26093500° N
Longitude: 82.82363503° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #93

View from Bellevue Reservoir
in the City of Bellevue, Huron
County, looking South

Latitude: 41.26206899° N
Longitude: 82.82370997° W



Viewpoint #94

View from Bellevue Reservoir
in the City of Bellevue, Huron
County, looking South-
Southwest

Latitude: 41.26357002° N
Longitude: 82.82375699° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #95

View from Bellevue Reservoir in the City of Bellevue, Huron County, looking South-Southwest

Latitude: 41.26420604° N
Longitude: 82.82257799° W



Viewpoint #96

View from Old Woman Creek National Estuarine Research Reserve Overlook at Estuary Trail in the Township of Berlin Annex, Erie County, looking Southwest

Latitude: 41.37727800° N
Longitude: 82.51006401° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #97

View from Duton House-
Intersection of Walnut Street
and State Route 13 in the City
of Norwalk, Huron County,
looking Southwest

Latitude: 41.23661667° N
Longitude: 82.61167778° W



Viewpoint #98

View from Resthaven Wildlife
Area, Parking Area in the
Township of Townsend,
Sandusky County, looking
South-Southeast

Latitude: 41.39493700° N
Longitude: 82.84611900° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #99

View from Pickeral Creek Wildlife Area, Main Entrance in the Township of Riley, Sandusky County, looking South-Southeast

Latitude: 41.40899400° N
Longitude: 82.96327800° W



Viewpoint #100

View from Pickeral Creek, Water Access in the Township of Riley, Sandusky County, looking South

Latitude: 41.40942700° N
Longitude: 82.95462500° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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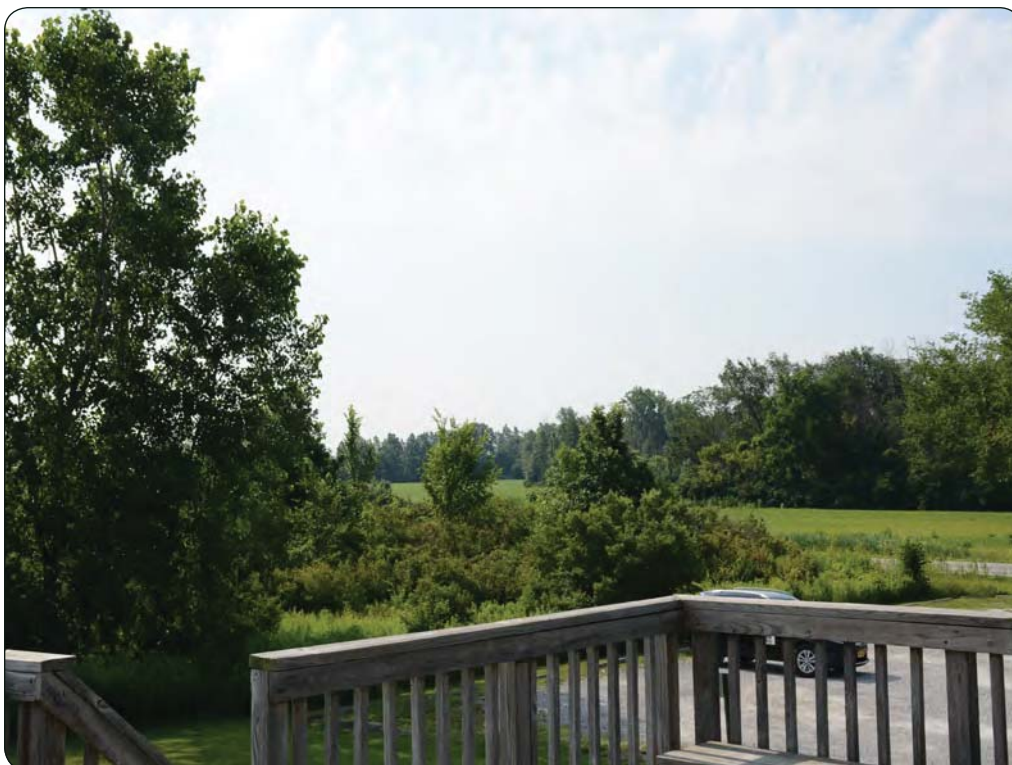




Viewpoint #101

View from Blue Heron Reserve Gateway Sign in the Township of Riley, Sandusky County, looking West

Latitude: 41.40889500° N
Longitude: 82.95851800° W



Viewpoint #102

View from Pickeral Creek Wildlife Area, Donald Thompson Wetland - Viewing Platform in the Township of Townsend, Sandusky County, looking South-Southeast

Latitude: 41.40960700° N
Longitude: 82.94842700° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #103

View from Blue Heron Reserve Nature Trails, Parking Area in the Township of Riley, Sandusky County, looking South

Latitude: 41.40294000° N
Longitude: 82.95389900° W



Viewpoint #104

View from Blue Heron Reserve Nature Trails, Boardwalk in the Township of Riley, Sandusky County, looking South-Southeast

Latitude: 41.40327800° N
Longitude: 82.95461000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #105

View from Pickeral Creek Wildlife Area, Parking West in the Township of Townsend, Sandusky County, looking South

Latitude: 41.40850000° N
Longitude: 82.93374100° W



Viewpoint #106

View from Pickeral Creek Wildlife Area, Parking East in the Township of Townsend, Sandusky County, looking South-Southeast

Latitude: 41.40861600° N
Longitude: 82.92732100° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #107

View from State Route 269 (N Washington St) at Cold Creek Crossing in the Village of Castalia, Erie County, looking Southeast

Latitude: 41.39926800° N
Longitude: 82.80836000° W



Viewpoint #108

View from intersection of State Route 269 (N Washington ST) and State Route 101 (South Ave) in the Village of Castalia, Erie County, looking southeast

Latitude: 41.39987200° N
Longitude: 82.80836300° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #109

View from State Route 269
(Bellue-Castalia Rd) in the
Township of Margaretta, Erie
County, looking Southwest

Latitude: 41.39163300° N
Longitude: 82.80928300° W



Viewpoint #110

View from Castalia Quarry
Reserve, Loop Trail in the
Township of Margaretta, Erie
County, looking Southeast

Latitude: 41.38883200° N
Longitude: 82.82997000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #111

View from State Route 412,
Scherz Ditch in the Township
of Townsend, Sandusky
County, looking Southeast

Latitude: 41.37626600° N
Longitude: 82.89901300° W



Viewpoint #112

View from State Route 412 in
the Township of Townsend,
Sandusky County, looking
South

Latitude: 41.37786400° N
Longitude: 82.86748800° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #113

View from State Route 101
at Interstate Overpass in
the Township of Townsend,
Sandusky County, looking
Southeast

Latitude: 41.35457700° N
Longitude: 82.87876700° W



Viewpoint #114

View from North County Road
268 (Vickery Rd) at Interstate
Overpass in the Township of
Townsend, Sandusky County,
looking South-Southeast

Latitude: 41.36212300° N
Longitude: 82.93562500° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #115

View from State Route 412,
East of State Route 510 in the
Township of Riley, Sandusky
County, looking Southeast

Latitude: 41.36912500° N
Longitude: 82.97301300° W



Viewpoint #116

View from State Route 19
in the Township of Adams,
Seneca County, looking
Southeast

Latitude: 41.21311200° N
Longitude: 83.02697300° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #117

View from Beaver Creek
Upground Reservoir, Parking
area off of County Road 34
in the Township of Adams,
Seneca County, looking East

Latitude: 41.24147300° N
Longitude: 83.02114900° W



Viewpoint #118

View from Clyde Community
Park in the City of Clyde,
Sandusky County, looking
East-Southeast

Latitude: 41.29873800° N
Longitude: 82.98179100° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #119

View from intersection of State Route 61 (Sandusky St./Plymouth St.) and State Route 603 (Base Line Road) in the Village of Plymouth, Huron/Richland County, looking Northwest

Latitude: 40.99524300° N
Longitude: 82.66556200° W



Viewpoint #120

View from Mary Fate Park Drive, Mary Fate Park in the Village of Plymouth, Huron County, looking Northwest

Latitude: 41.00200000° N
Longitude: 82.66450100° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #121

View from County Road 14 (Baseline Road) in the Township of Plymouth/Newhaven, Huron/Richland County, looking Northwest

Latitude: 40.99564000° N
Longitude: 82.71801000° W



Viewpoint #122

View from intersection of County Road 50 (Boundary Rd.) and Scott Road in the Township of Cranberry, Crawford County, looking North

Latitude: 40.98243000° N
Longitude: 82.85320000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #123

View from North Kibler Sreet, St. Bernard Catholic Cemetery in the Village of New Washington, Crawford County, looking North

Latitude: 40.96788000° N
Longitude: 82.85205000° W



Viewpoint #124

View from intersection of State Route 103 (East Mansfield St.) and Kibler Street in the Village of New Washington, Crawford County, looking North

Latitude: 40.96222000° N
Longitude: 82.85373000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #125

View from County Road 35
in the Township of Venice,
Seneca County, looking
Northeast

Latitude: 41.01408000° N
Longitude: 82.85680000° W



Viewpoint #126

View from Lemmon Street/
Fairground Road, Saints
Peter and Paul Catholic
Cemetery in the Township
of Venice, Seneca County,
looking Northeast

Latitude: 41.06887000° N
Longitude: 82.87998000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #127

View from Fairground Road, Attica Fairgrounds/ Attica Raceway Park in the Township of Venice, Seneca County, looking East-Northeast

Latitude: 41.06971000° N
Longitude: 82.87827000° W



Viewpoint #128

View from intersection of United State Route 224 (West/East Tiffin St.) and State Route 4 (South/North Main St.) in the Village of Attica, Seneca County, looking Northeast

Latitude: 41.06487000° N
Longitude: 82.88752000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #129

View from United States Route 224 (Benjamin Franklin Highway) in the Township of Venice, Seneca County, looking Northeast

Latitude: 41.07140000° N
Longitude: 82.90476000° W



Viewpoint #130

View from Seneca East Campus, Athletic field bleachers in the Township of Venice, Seneca County, looking East-Northeast

Latitude: 41.08010000° N
Longitude: 82.91602000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #131

View from intersection State Route 19 (Marion St.) and New Haven Street in the Village of Bloomville, Seneca County, looking North

Latitude: 41.05196000° N
Longitude: 83.01539000° W



Viewpoint #132

View from Garlo Heritage Nature Preserve, Olgierd Lake lookout in the Township of Bloom, Seneca County, looking Northeast

Latitude: 41.02697000° N
Longitude: 83.01247000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #133

View from intersection of North Street and Maple Street in the Village of Bloomville, Seneca County, looking East-Northeast

Latitude: 41.05406000° N
Longitude: 83.01170000° W



Viewpoint #134

View from State Route 19 (S Madison St.) in the Township of Scipio, Seneca County, looking East-Northeast

Latitude: 41.11206000° N
Longitude: 83.01539000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #135

View from State Route 162 (E Jefferson St.), Republic Park in the Village of Republic, Seneca County, looking East-Northeast

Latitude: 41.12527000° N
Longitude: 83.00989000° W



Viewpoint #136

View from Tr 0196, Beaver Creek Reservoir in the Township of Adams, Seneca County, looking Northeast

Latitude: 41.23956000° N
Longitude: 83.01608000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #137

View from State Route 101
(Portland Rd.) in the Township
of Adams, Seneca County,
looking East-Southeast

Latitude: 41.24414000° N
Longitude: 82.99830000° W



Viewpoint #138

View from State Route 101
(Portland Rd.), Butternut
Ridge Church of Christ and
Cemetery in the Township
of Adams, Seneca County,
looking East

Latitude: 41.25546000° N
Longitude: 82.98078000° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #139

View from Racoon Creek Reservoir in the City of Clyde, Sandusky County, looking Southeast

Latitude: 41.29191000° N
Longitude: 82.97617000° W



Viewpoint #140

View from County Road 34 in the Township of Thompson, Seneca County, looking East-Southeast

Latitude: 41.24055600° N
Longitude: 82.85444400° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #141

View from County Road 23
(Young Rd.) in the Township
of Lyme, Huron County,
looking East-Northeast

Latitude: 41.24632600° N
Longitude: 82.83861000° W



Viewpoint #142

View from Bellevue
Community Center, Athletic
Field Parking in the City of
Bellevue, Huron County,
looking East-Southeast

Latitude: 41.26442200° N
Longitude: 82.83657800° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Viewpoint #143

View from Bellevue
Community Center, Parking
in the City of Bellevue, Huron
County, looking South

Latitude: 41.26305600° N
Longitude: 82.83361100° W



Viewpoint #144

View from United State Route
6 (Cleveland Rd. W), Joseph
Steinen Wildlife Area in the
Township of Huron, Erie
County, looking Southwest

Latitude: 41.42222200° N
Longitude: 82.63694400° W

Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

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Appendix D

Visual Simulations

Viewpoint: 17

Photograph Information:

Date: October 29, 2018

Time: 2:25 PM

Weather Conditions: Cloudy

View Location Information:

Location: County Road 114 (Thomas Rd)

Township: Oxford

County: Erie

Direction of View: Southwest

Camera Elevation: 686.0 feet

Latitude: 41.33780000° N

Longitude: 82.67261667° W

Landscape Similarity Zone: Rural Residential/Agricultural, Transportation Corridor

Viewer Type: Local Residents

Sensitive Site: N/A

Distance Zone: Foreground

Nearest Visible Turbine: 0.81 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet

(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

Hub Height: 358 Feet (109 Meters)

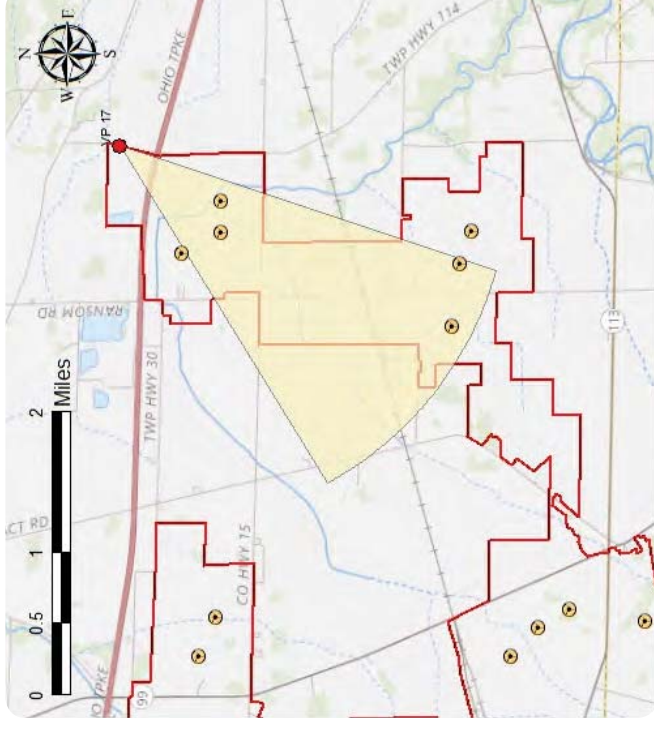
Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 602 Feet

(183.5 Meters)

Total Number of Turbines: 87 Turbines

Viewpoint Location



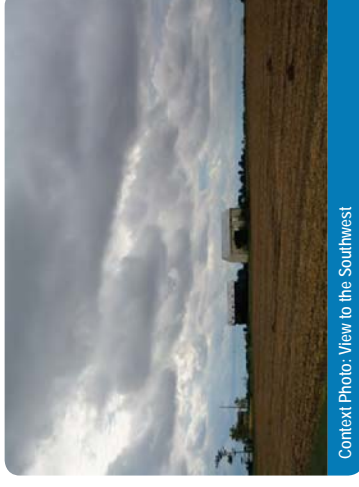
Viewpoint Context



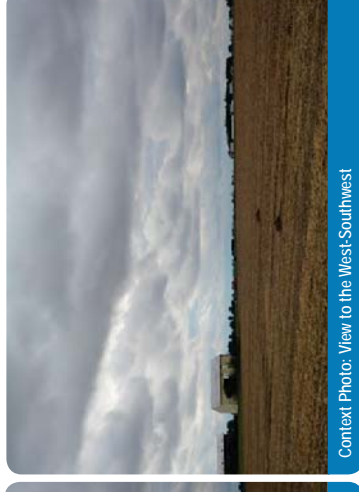
Context Photo: View to the South



Context Photo: View to the South-Southwest



Context Photo: View to the Southwest



Context Photo: View to the West-Southwest





Simulation





Viewpoint: 31

Photograph Information:

Date: October 29, 2018

Time: 3:46 PM

Weather Conditions: Cloudy

View Location Information:

Location: Memorial Reservoir Foot Bridge

City: Norwalk

County: Huron

Direction of View: Northwest

Camera Elevation: 805.0 feet

Latitude: 41.23373333° N

Longitude: 82.58246667° W

Landscape Similarity Zone: City/Village, Suburban

Residential Zone

Viewer Type: Tourists/Recreational Users

Sensitive Site: Norwalk (City)

Distance Zone: Background

Nearest Visible Turbine: 8.24 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet

(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

Hub Height: 358 Feet (109 Meters)

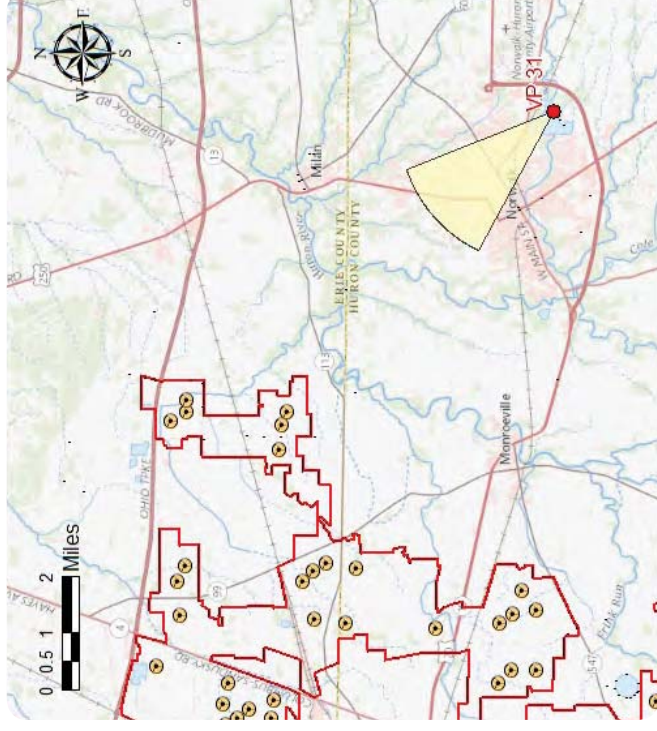
Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 602 Feet

(183.5 Meters)

Total Number of Turbines: 87 Turbines

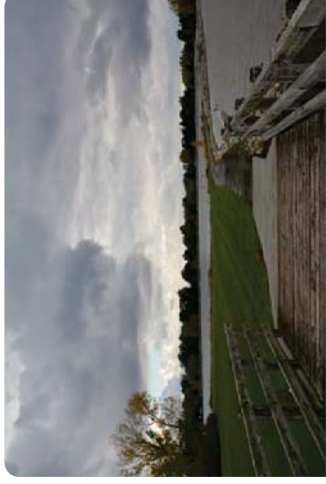
Viewpoint Location



Viewpoint Context



Context Photo: View to the West



Context Photo: View to the West-Northwest



Context Photo: View to the Northwest



Context Photo: View to the North-Northwest



Existing Conditions





Simulation

Viewpoint: 44

Photograph Information:

Date: October 29, 2018

Time: 5:13 PM

Weather Conditions: Cloudy

View Location Information:

Location: Bellevue Reservoir

Township: Sherman

County: Huron

Direction of View: South-Southwest

Camera Elevation: 815.0 feet

Latitude: 41.21465000° N

Longitude: 82.78053333° W

Landscape Similarity Zone: Rural Residential/Agricultural Zone

Viewer Type: Tourists/Recreational Users

Sensitive Site: Bellevue Reservoir

Distance Zone: Foreground

Nearest Visible Turbine: 0.49 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet
(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

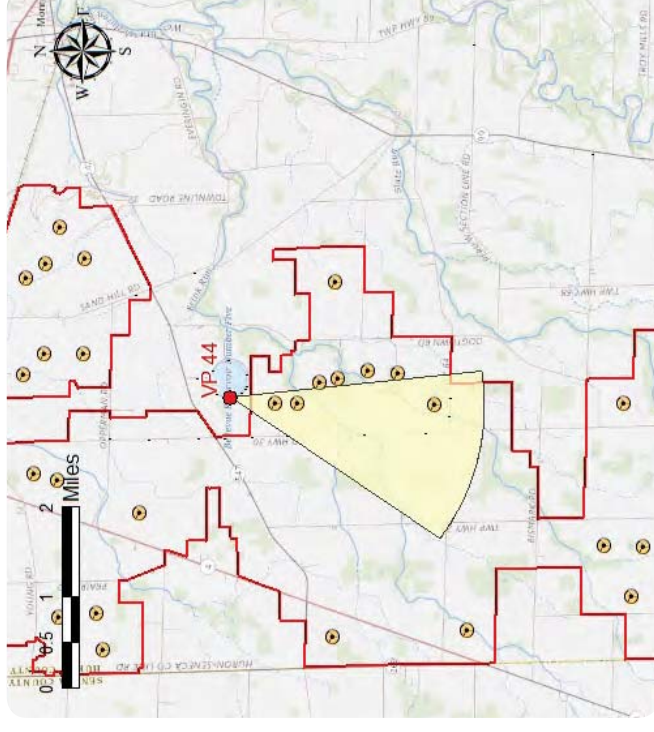
Hub Height: 358 Feet (109 Meters)

Rotor Diameter: 489 Feet (149 Meters)

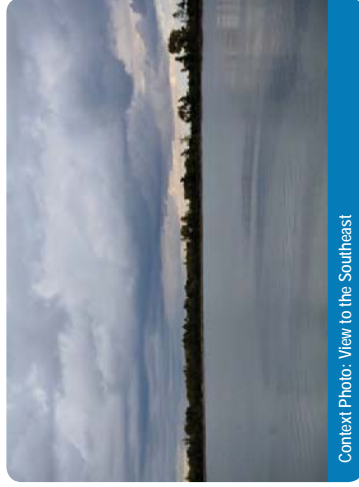
Total Turbine Height: 602 Feet
(183.5 Meters)

Total Number of Turbines: 87 Turbines

Viewpoint Location



Viewpoint Context



Context Photo: View to the Southeast



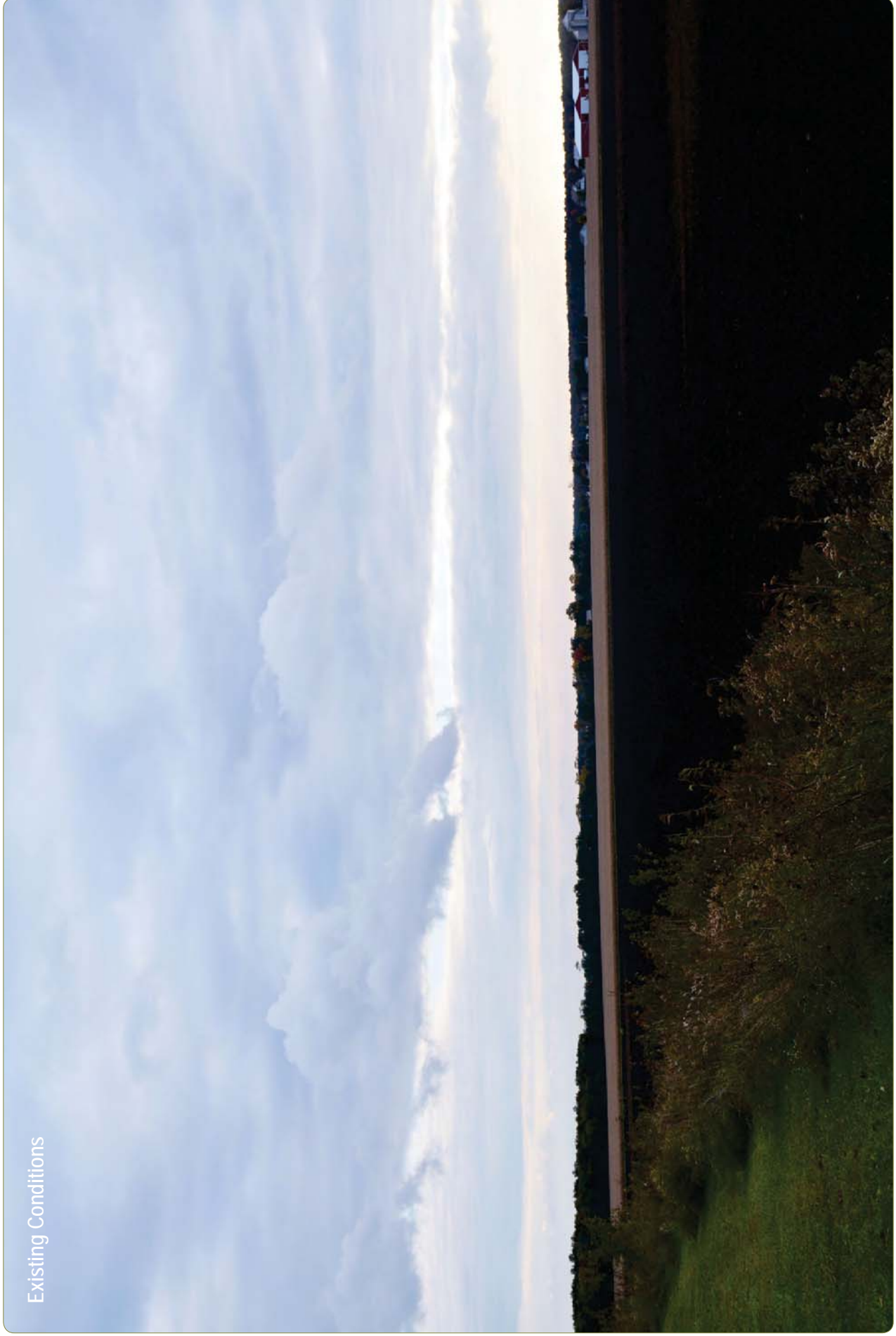
Context Photo: View to the South-Southeast



Context Photo: View to the South-Southwest



Context Photo: View to the Southwest



Existing Conditions



Simulation



Cumulative Simulation

Viewpoint: 48

Photograph Information:

Date: October 29, 2018

Time: 5:38 PM

Weather Conditions: Cloudy

View Location Information:

Location: County Road 30 (Section Line Rd 30 North)

Township: Lyme

County: Huron

Direction of View: Northeast

Camera Elevation: 794.0 feet

Latitude: 41.22750000° N

Longitude: 82.78930000° W

Landscape Similarity Zone: Rural Residential/Agricultural Zone

Viewer Type: Local Residents

Sensitive Site: N/A

Distance Zone: Middle Ground

Nearest Visible Turbine: 1.20 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet
(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

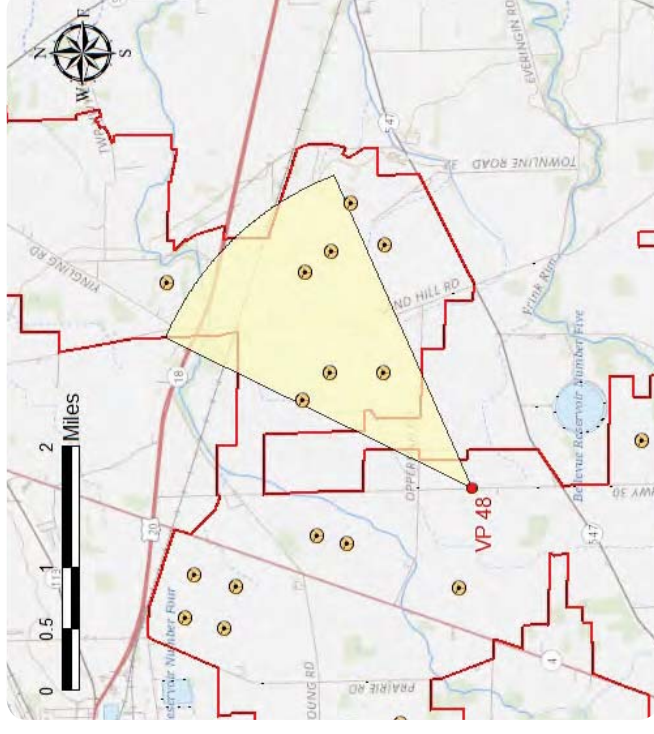
Hub Height: 358 Feet (109 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 602 Feet
(183.5 Meters)

Total Number of Turbines: 87 Turbines

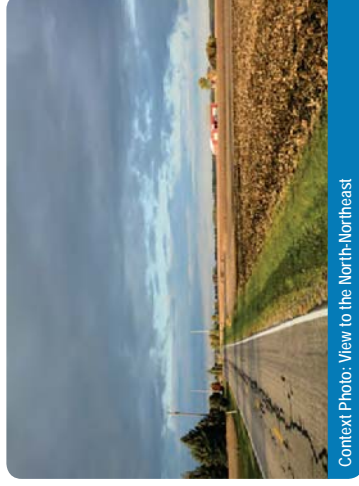
Viewpoint Location



Viewpoint Context



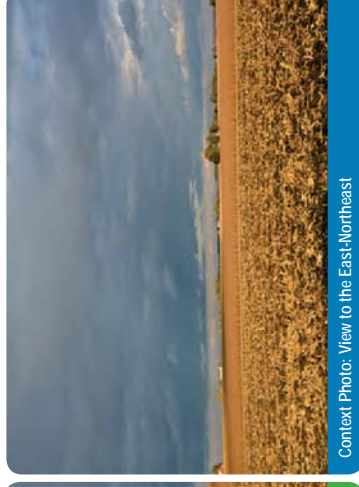
Context Photo: View to the North-Northwest



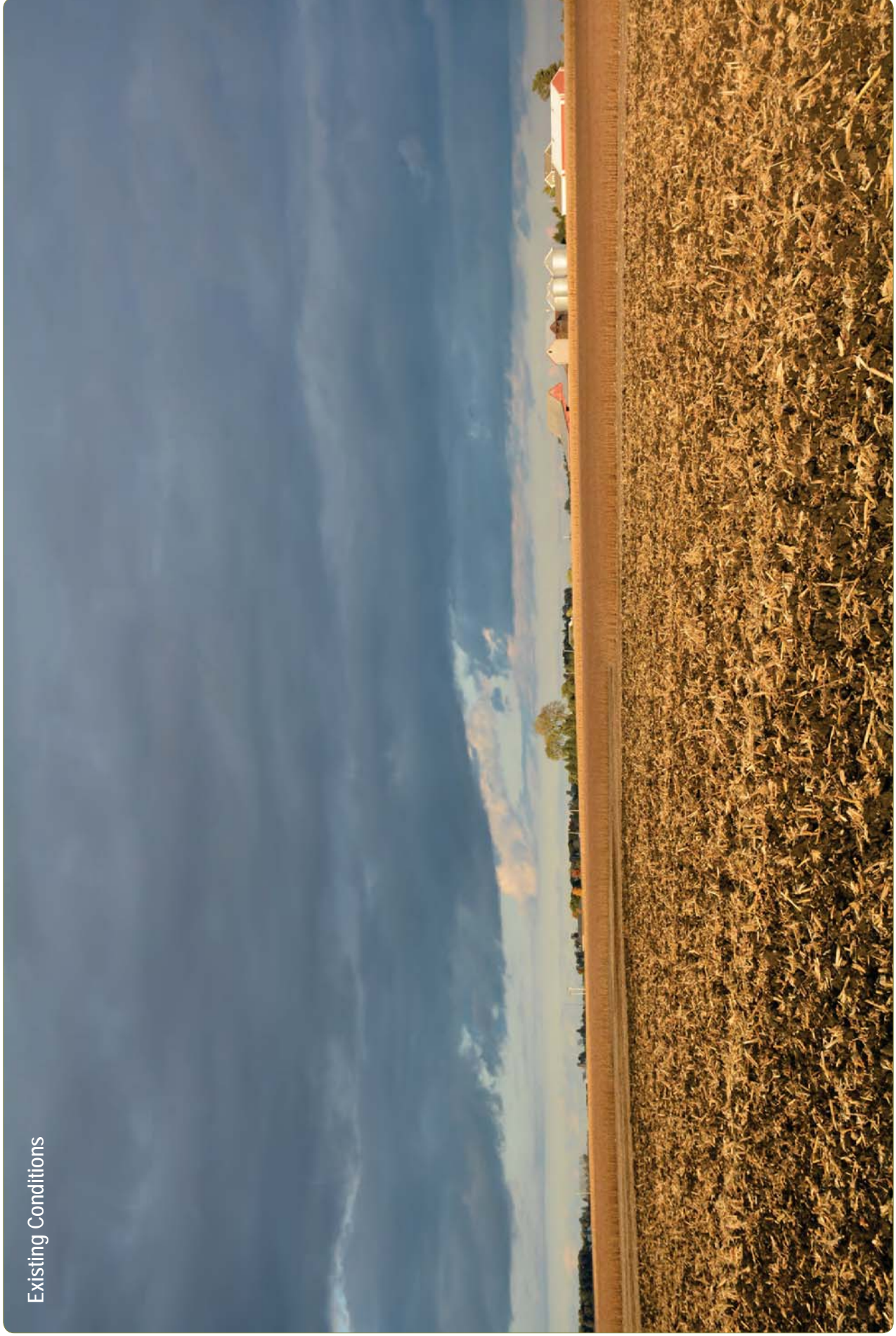
Context Photo: View to the North-Northeast



Context Photo: View to the Northeast



Context Photo: View to the East-Northeast



Existing Conditions





Simulation

Viewpoint: 55

Photograph Information:

Date: October 29, 2018

Time: 6:02 PM

Weather Conditions: Cloudy

View Location Information:

Location: County Highway 64 (Pontiac Section Line Road)

Township: Sherman

County: Huron

Direction of View: Northeast

Camera Elevation: 799.0 feet

Latitude: 41.17941667° N

Longitude: 82.78421667° W

Landscape Similarity Zone: Rural Residential/Agricultural Zone

Viewer Type: Local Residents

Sensitive Site: N/A

Distance Zone: Foreground

Nearest Visible Turbine: 0.20 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet
(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

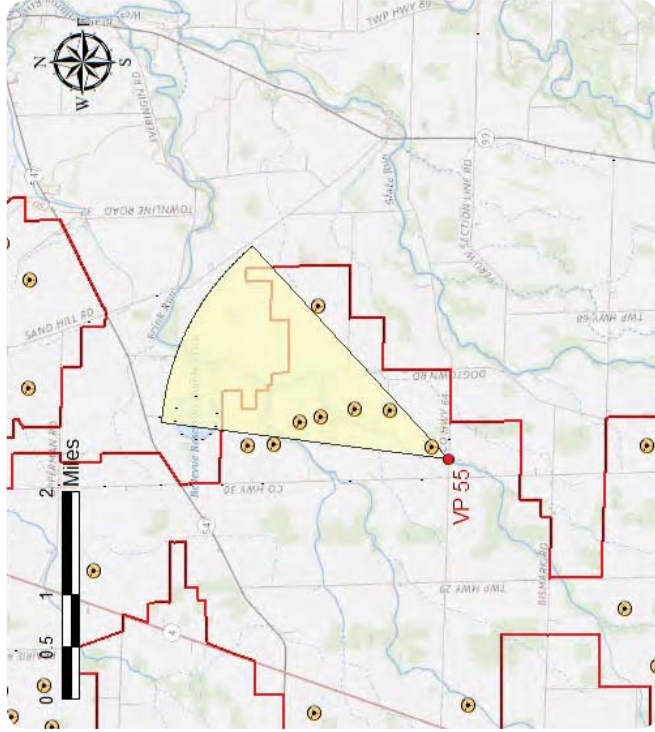
Hub Height: 358 Feet (109 Meters)

Rotor Diameter: 489 Feet (149 Meters)

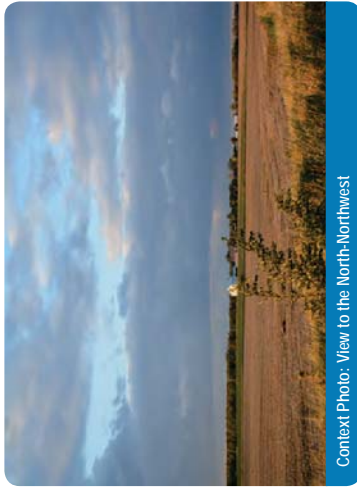
Total Turbine Height: 602 Feet
(183.5 Meters)

Total Number of Turbines: 87 Turbines

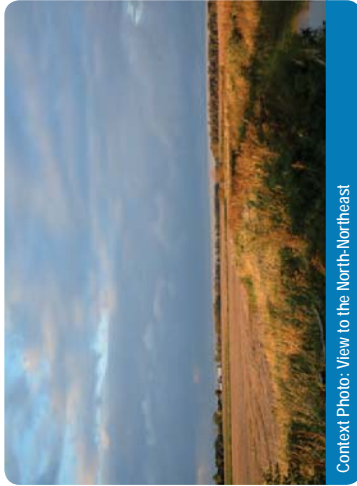
Viewpoint Location



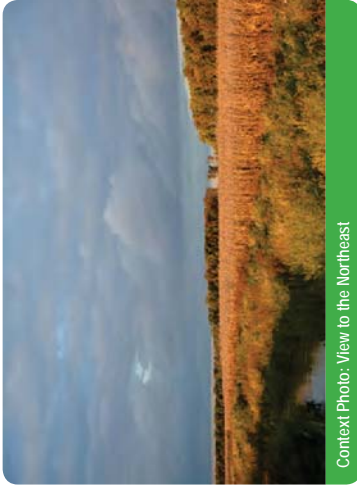
Viewpoint Context



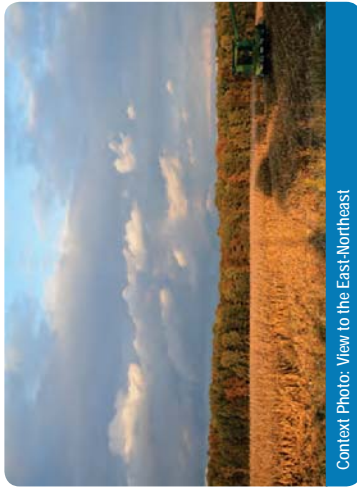
Context Photo: View to the North-Northwest



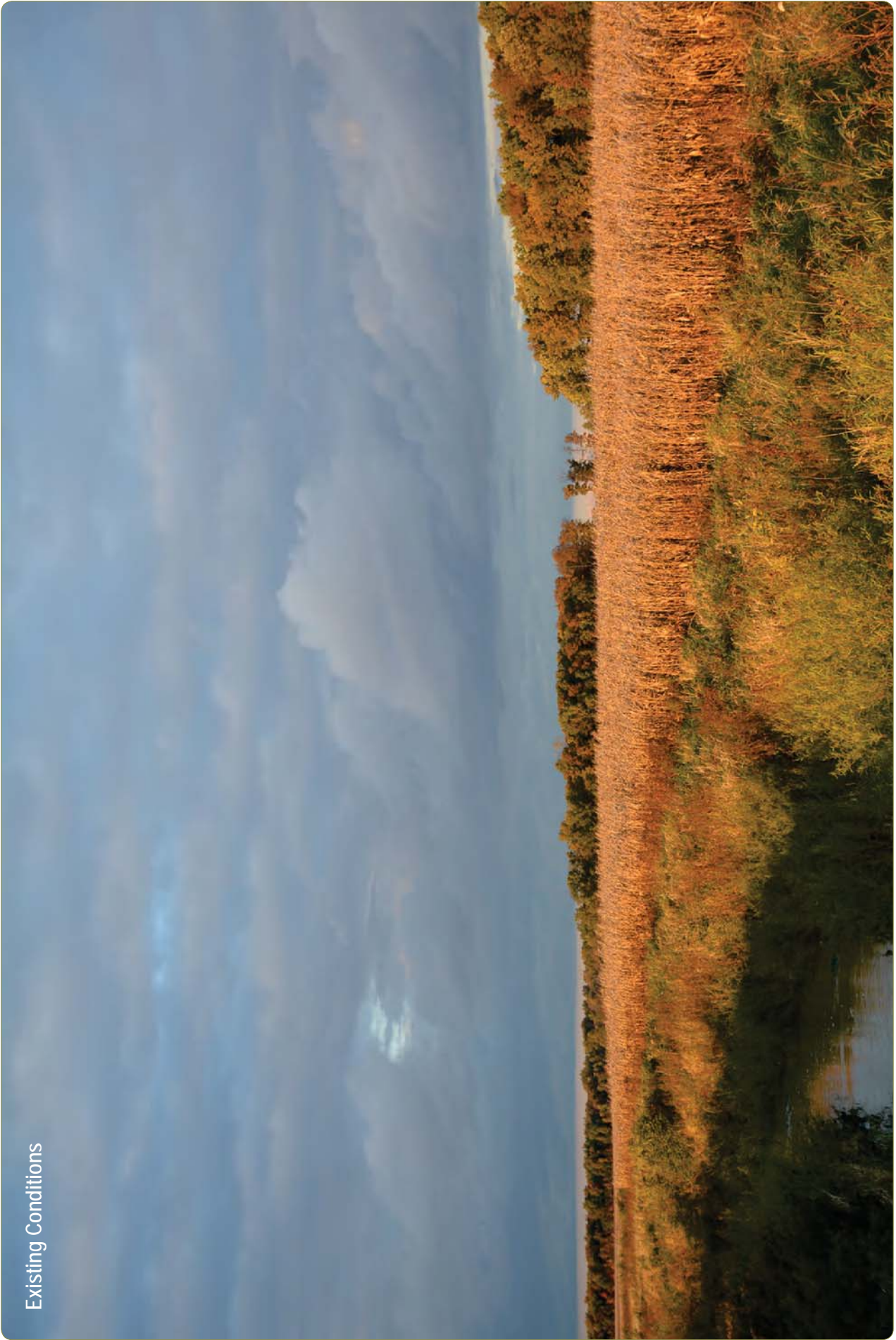
Context Photo: View to the North-Northeast



Context Photo: View to the Northeast



Context Photo: View to the East-Northeast



Existing Conditions





Simulation

Viewpoint: 68

Photograph Information:

Date: October 30, 2018

Time: 12:25 PM

Weather Conditions: Partly Cloudy

View Location Information:

Location: State Route 99

Township: Greenfield

County: Huron

Direction of View: West

Camera Elevation: 837.0 feet

Latitude: 41.14107303° N

Longitude: 82.72952302° W

Landscape Similarity Zone: Rural Residential/Agricultural Zone

Viewer Type: Local Residents, Through Travelers/Commuters

Sensitive Site: SR-99

Distance Zone: Middle Ground

Nearest Visible Turbine: 2.15 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet
(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

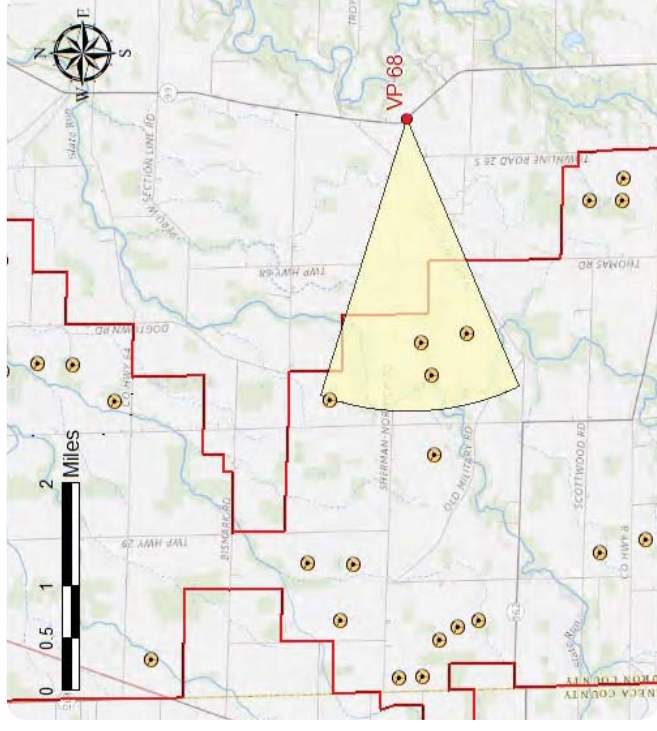
Hub Height: 358 Feet (109 Meters)

Rotor Diameter: 489 Feet (149 Meters)

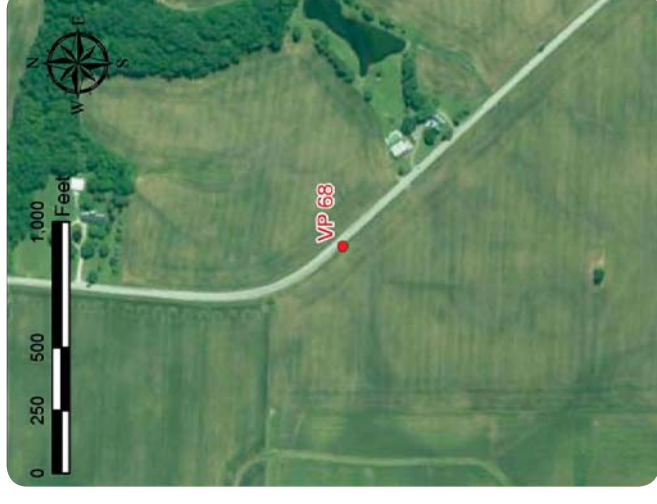
Total Turbine Height: 602 Feet
(183.5 Meters)

Total Number of Turbines: 87 Turbines

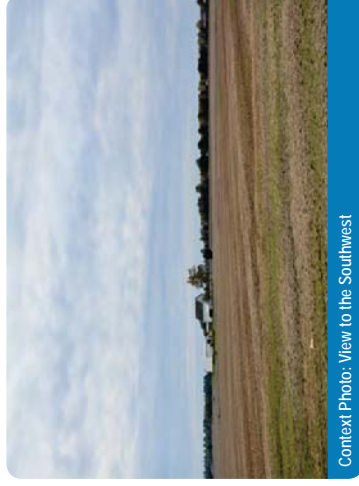
Viewpoint Location



Viewpoint Context



Context Photo: View to the South-Southwest



Context Photo: View to the Southwest



Context Photo: View to the West



Context Photo: View to the Northwest



Existing Conditions



Simulation



Cumulative Simulation



Viewpoint: 82

Photograph Information:

Date: October 30, 2018

Time: 2:26 PM

Weather Conditions: Cloudy

View Location Information:

Location: County Road 78 (Willard West Rd)

Township: Richmond

County: Huron

Direction of View: Southwest

Camera Elevation: 967.0 feet

Latitude: 41.05721704° N

Longitude: 82.81847304° W

Landscape Similarity Zone: Rural Residential/Agricultural Zone

Viewer Type: Local Residents

Sensitive Site: Higley Farm Cemetery

Distance Zone: Foreground

Nearest Visible Turbine: 0.63 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet
(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

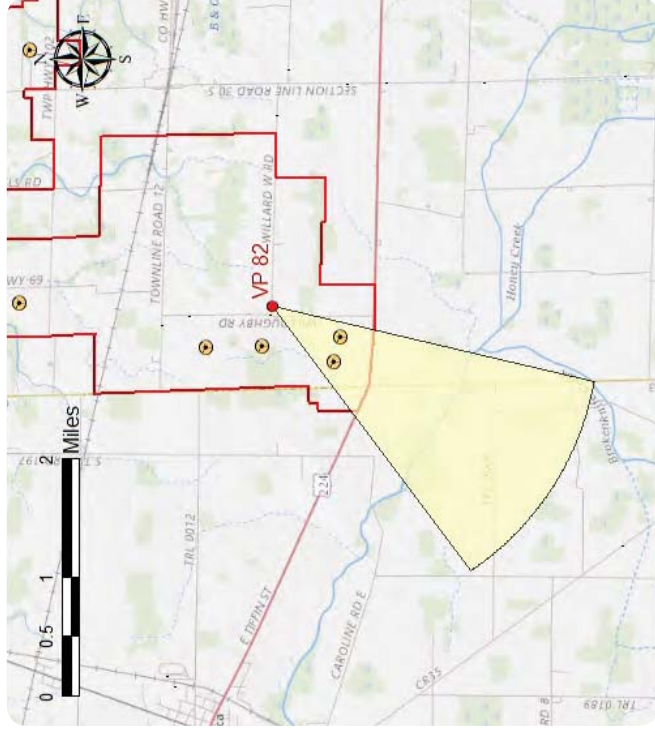
Hub Height: 358 Feet (109 Meters)

Rotor Diameter: 489 Feet (149 Meters)

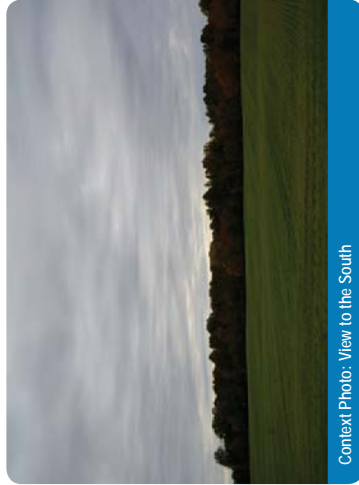
Total Turbine Height: 602 Feet
(183.5 Meters)

Total Number of Turbines: 87 Turbines

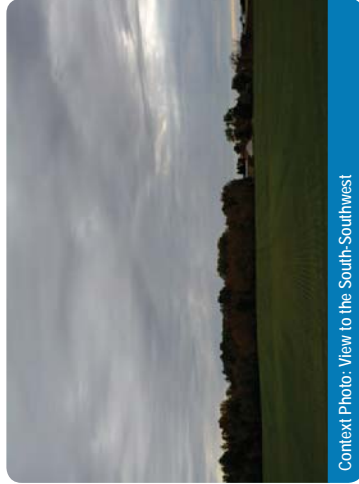
Viewpoint Location



Viewpoint Context



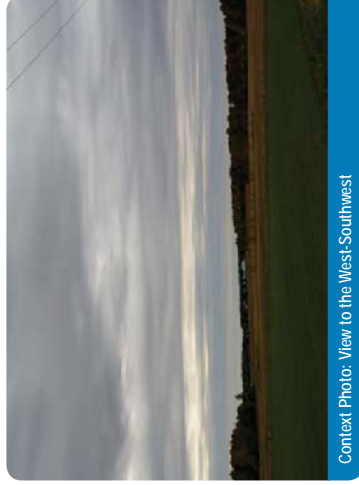
Context Photo: View to the South



Context Photo: View to the South-Southwest



Context Photo: View to the Southwest



Context Photo: View to the West-Southwest





Simulation

Viewpoint: 89

Photograph Information:

Date: October 30, 2018

Time: 3:18 PM

Weather Conditions: Cloudy

View Location Information:

Location: Bellevue Reservoir

City: Bellevue

County: Huron

Direction of View: Southeast

Camera Elevation: 799.0 feet

Latitude: 41.26404000° N

Longitude: 82.81961599° W

Landscape Similarity Zone: City/Village, Suburban

Residential Zone

Viewer Type: Local Residents, Tourists/Recreational Users

Sensitive Site: Bellevue (City)

Distance Zone: Foreground

Nearest Visible Turbine: 0.65 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet

(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

Hub Height: 358 Feet (109 Meters)

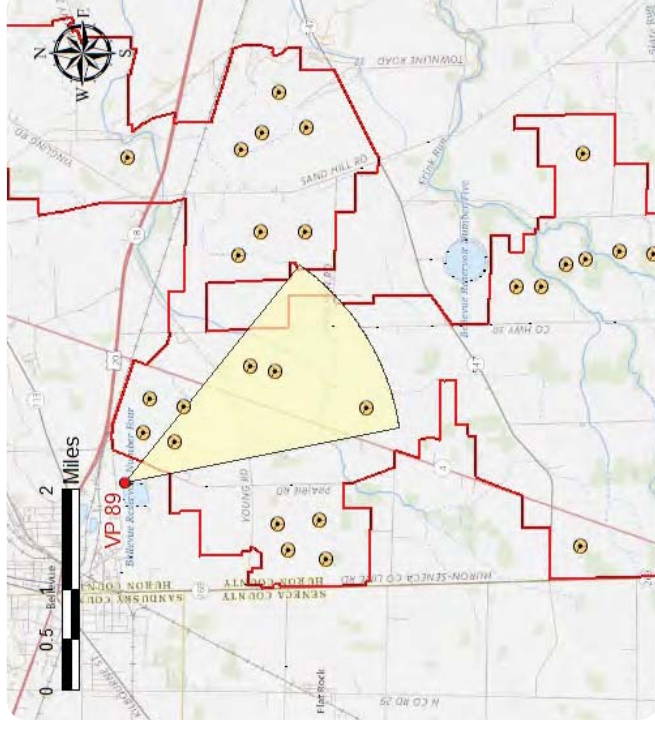
Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 602 Feet

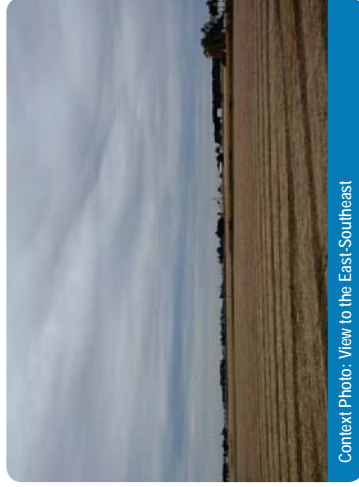
(183.5 Meters)

Total Number of Turbines: 87 Turbines

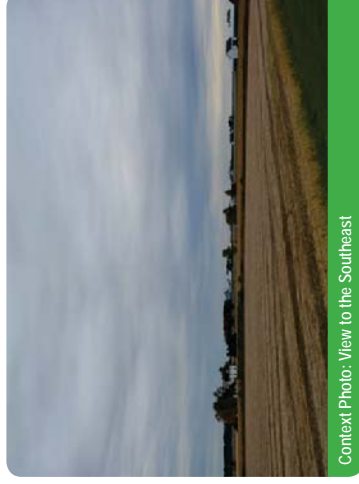
Viewpoint Location



Viewpoint Context



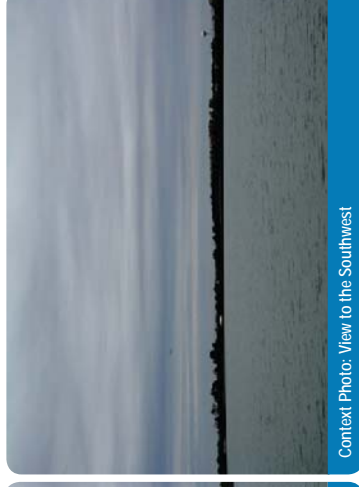
Context Photo: View to the East-Southeast



Context Photo: View to the Southeast



Context Photo: View to the South-Southwest



Context Photo: View to the Southwest



Existing Conditions



Simulation

Viewpoint: 135

Photograph Information:

Date: November 14, 2018

Time: 1:43 PM

Weather Conditions: Cloudy

View Location Information:

Location: State Route 162 (E Jefferson St.), Republic Park

Village: Republic

County: Seneca

Direction of View: East-Northeast

Camera Elevation: 886.0 feet

Latitude: 41.12527000° N

Longitude: 83.00989000° W

Landscape Similarity Zone: Suburban Residential Zone

Viewer Type: Local Residents, Tourists/Recreational Users

Sensitive Site: N/A

Distance Zone: Background

Nearest Visible Turbine: 9.32 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet

(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

Hub Height: 358 Feet (109 Meters)

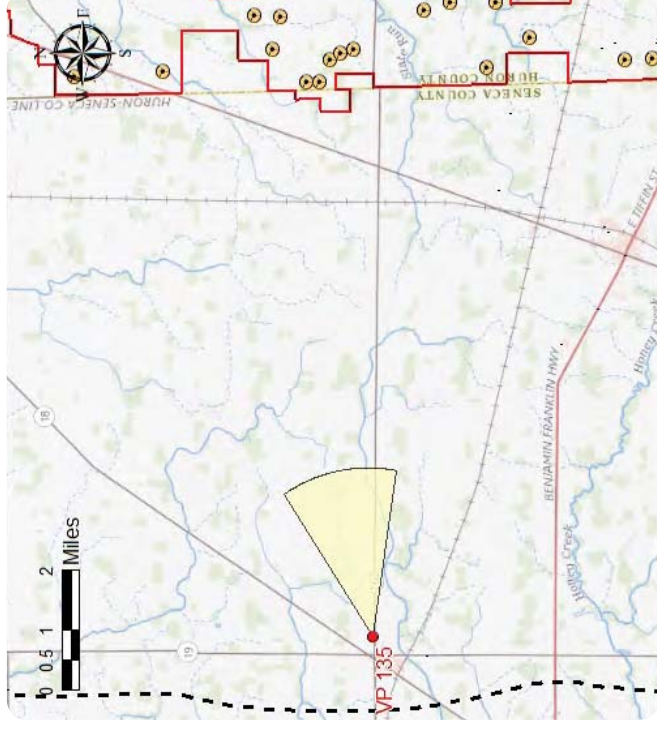
Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 602 Feet

(183.5 Meters)

Total Number of Turbines: 87 Turbines

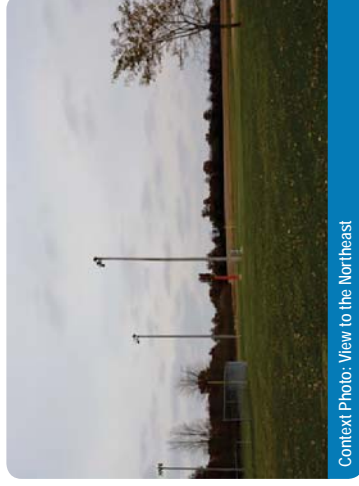
Viewpoint Location



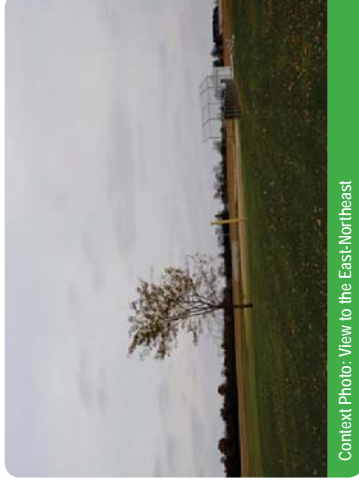
Viewpoint Context



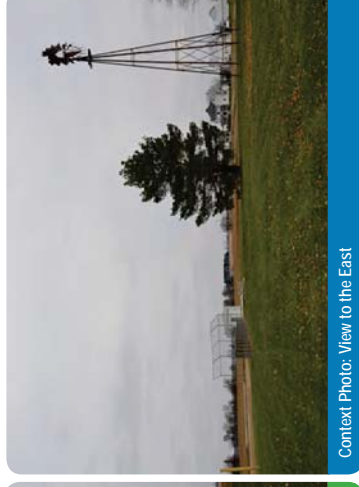
Context Photo: View to the North-Northeast



Context Photo: View to the Northeast



Context Photo: View to the East-Northeast



Context Photo: View to the East



Existing Conditions



Simulation



Cumulative Simulation

Viewpoint: 138

Photograph Information:

Date: November 14, 2018

Time: 2:07 PM

Weather Conditions: Cloudy

View Location Information:

Location: State Route 101 (Portland Rd.), Butternut Ridge

Church of Christ and Cemetery

Township: Adams

County: Seneca

Direction of View: East

Camera Elevation: 789.0 feet

Latitude: 41.25546000° N

Longitude: 82.98078000° W

Landscape Similarity Zone: Suburban Residential Zone

Viewer Type: Local Residents

Sensitive Site: SR-101

Distance Zone: Background

Nearest Visible Turbine: 7.78 mile

Camera Properties:

Camera Make/Model: Nikon D7100

Focal Length: 32mm

Camera Sensor Size: 23.5

Project Information:

Main Turbine:

Model: Nordex N149

Hub Height: 410 Feet (125 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 655 Feet
(199.5 Meters)

Secondary Turbine (T67, T70 & T82):

Model: Nordex N149

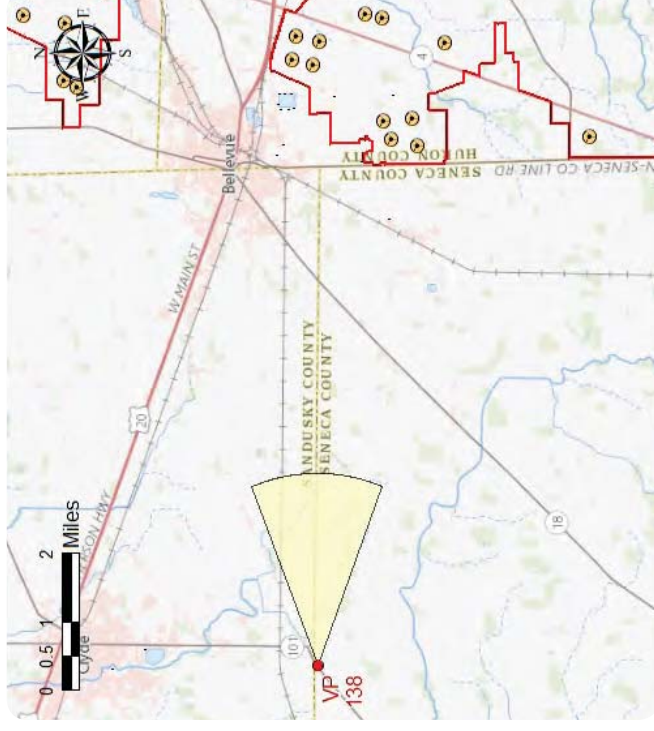
Hub Height: 358 Feet (109 Meters)

Rotor Diameter: 489 Feet (149 Meters)

Total Turbine Height: 602 Feet
(183.5 Meters)

Total Number of Turbines: 87 Turbines

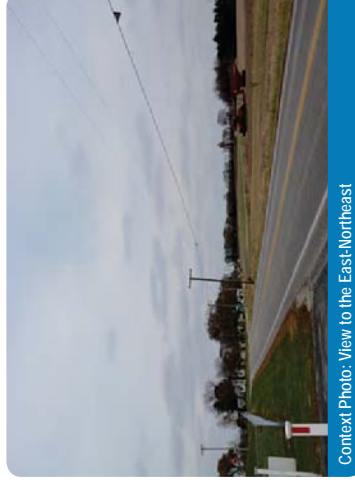
Viewpoint Location



Viewpoint Context



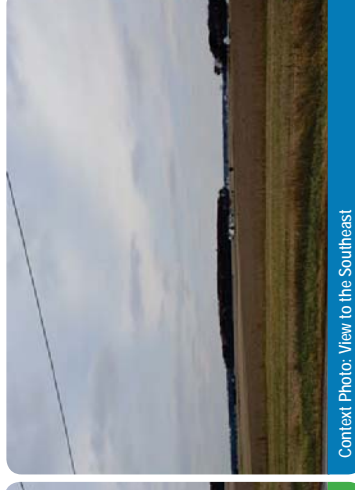
Context Photo: View to the North



Context Photo: View to the East-Northeast



Context Photo: View to the East



Context Photo: View to the Southeast



Existing Conditions







Appendix E

Typical Underground Collection System Photos



Photo 01

Buried interconnect installation



Photo 02

Typical trench associated with buried interconnect installation

Emerson Creek Wind Farm

Erie, and Huron, Counties, Ohio

Appendix E: Typical Construction Photographs for Wind Energy Projects

Sheet 1 of 2



Photo 03

In-progress restoration of buried interconnect impact

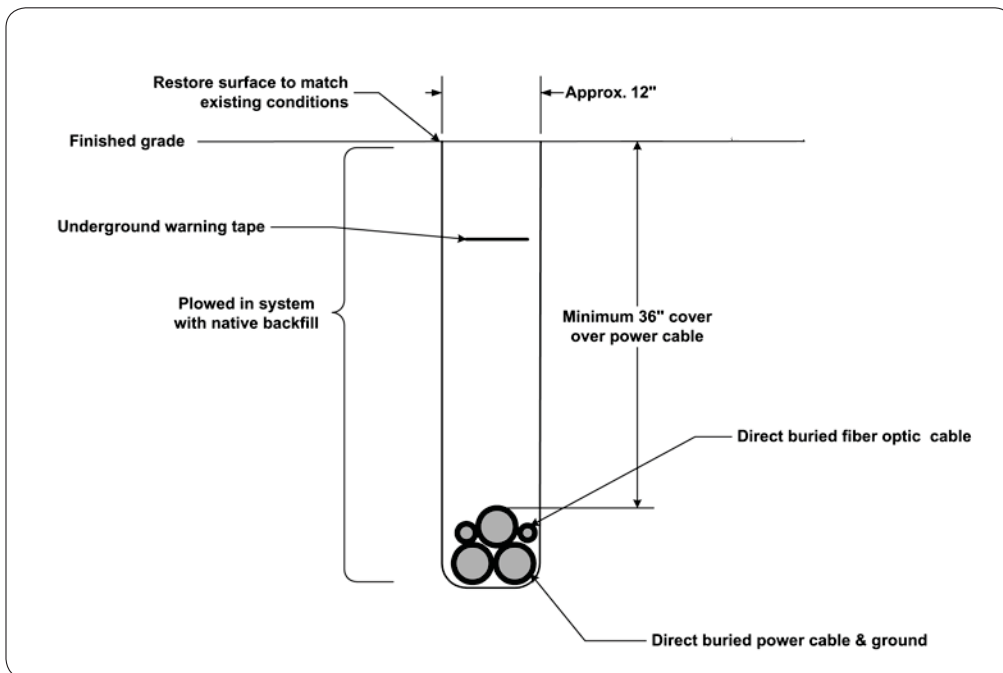


Photo 04

Buried interconnect typical detail

Emerson Creek Wind Farm

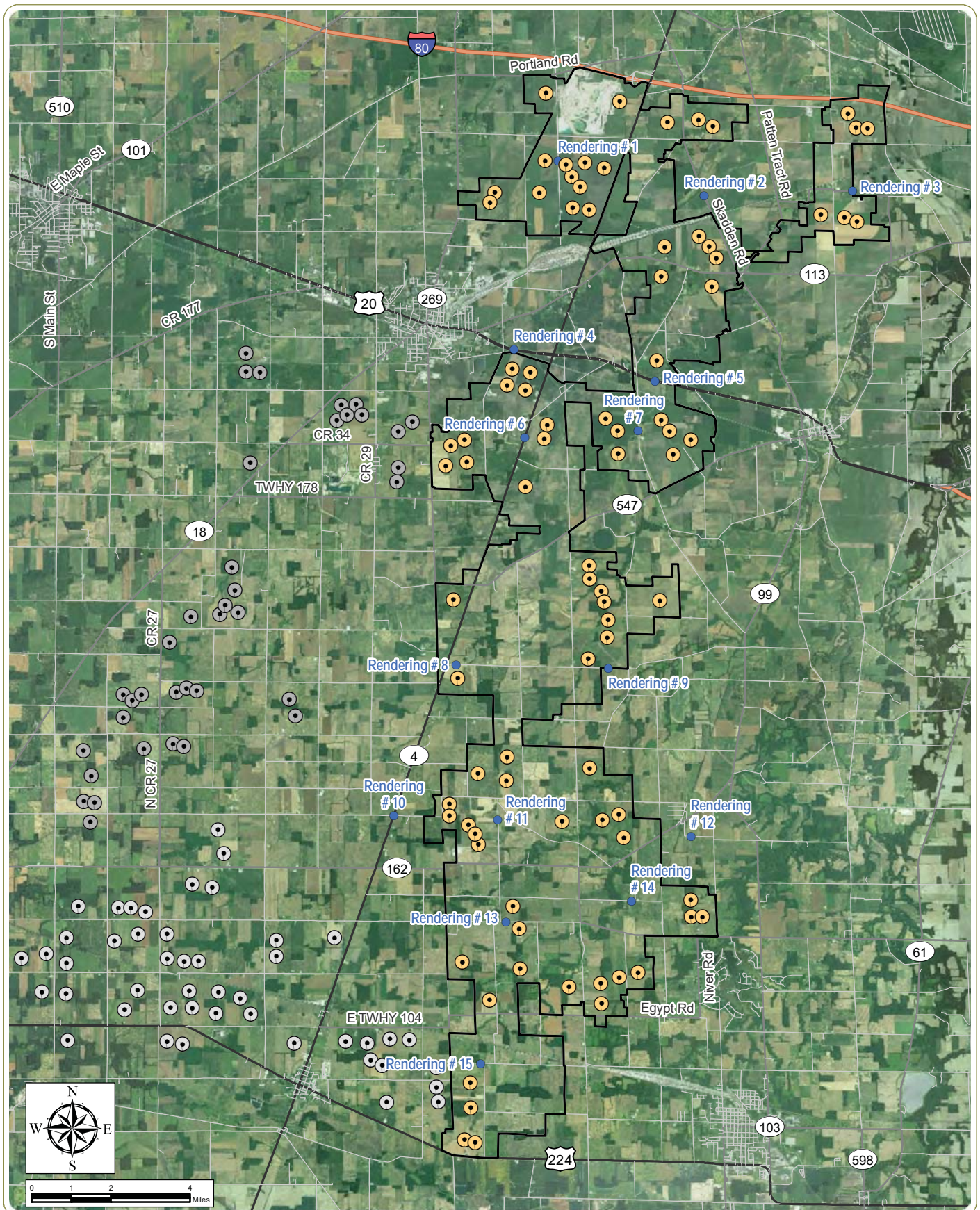
Erie, and Huron, Counties, Ohio

Appendix E: Typical Construction Photographs for Wind Energy Projects

Sheet 2 of 2

Appendix F

360 Degree Pictorial Sketches



Emerson Creek Wind Farm

Erie and Huron Counties, Ohio

Appendix F: Project Rendering Locations

Notes: 1. Basemap: USDA NAIP "CONUS PRIME" orthoimagery map service. 2. This map was generated in ArcMap on March 12, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Rendering Viewpoint Location
- Emerson Proposed Wind Turbine
- ⊙ Seneca Proposed Wind Turbine
- ⊗ Republic Proposed Wind Turbine
- ▭ Project Boundary



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Project Rendering HVP1

View Location Information:

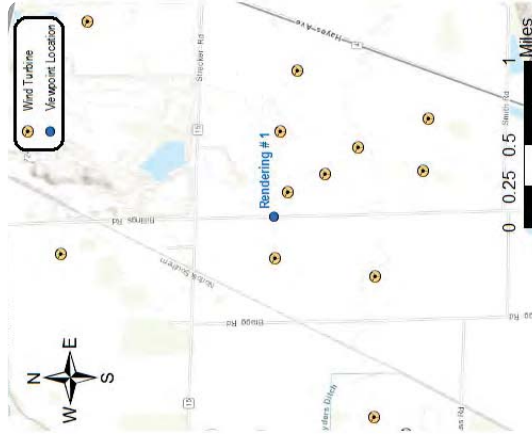
Location: County Road 38 (Billings Rd)
 County: Erie
 Township: Gorton
 Latitude: 41.31857001° N
 Longitude: 82.79292154° W
 Elevation: 718.386

Camera Properties:

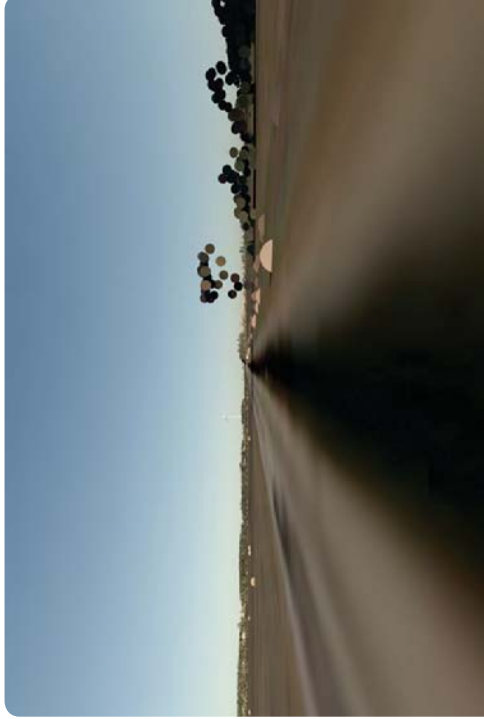
Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

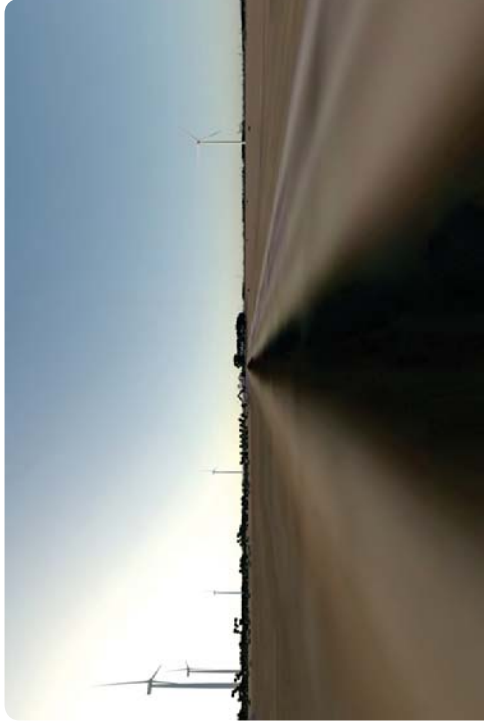
Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP2

View Location Information:

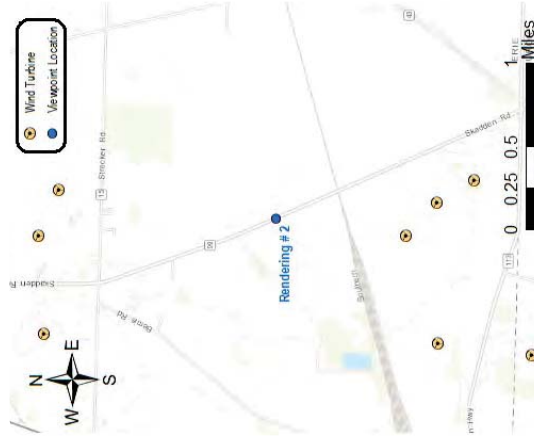
Location: State Route 99
 County: Erie
 Township: Oxford
 Latitude: 41.30903497° N
 Longitude: 82.73968599° W
 Elevation: 715.285

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

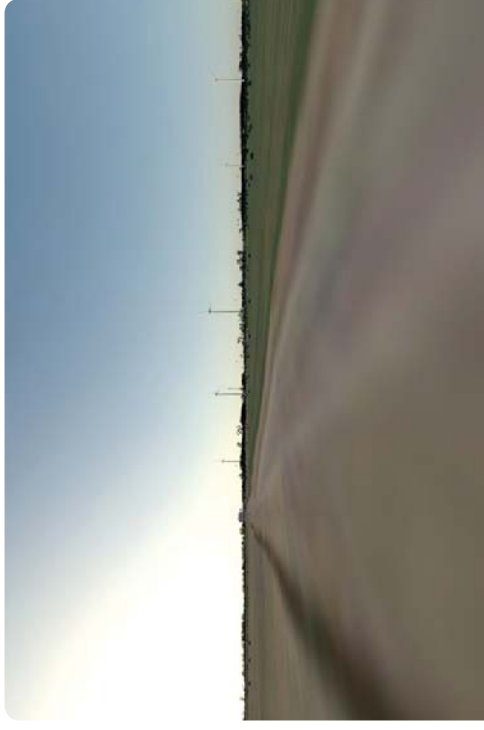
Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP3

View Location Information:

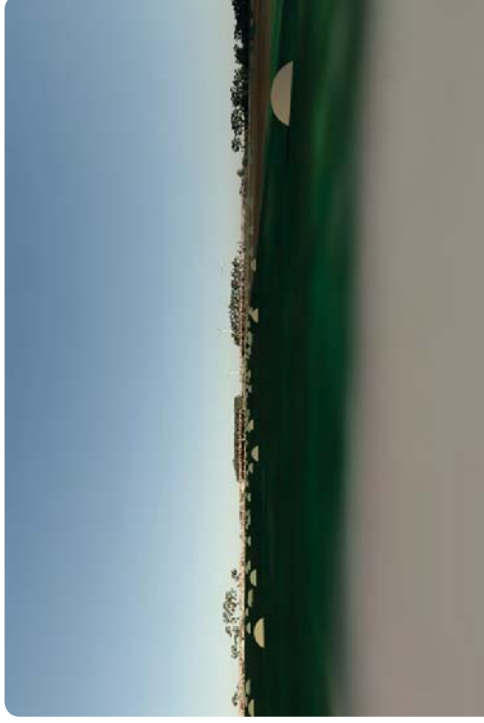
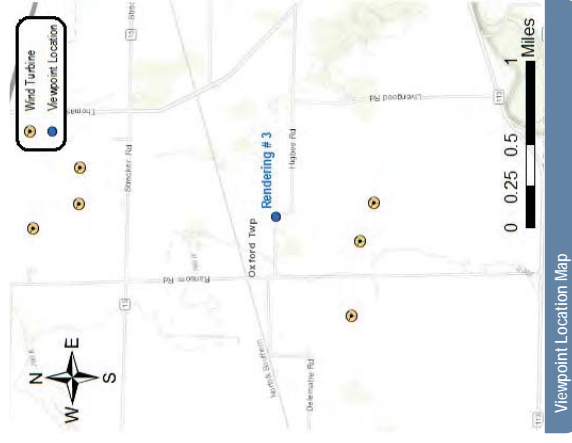
Location: County Road 94 (Higbee Rd)
 County: Erie
 Township: Oxford
 Latitude: 41.31036861° N
 Longitude: 82.68559812° W
 Elevation: 694.085

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP4

View Location Information:

Location: United States Highway 20
 County: Huron
 Township: Lyme
 Latitude: 41.26678378° N
 Longitude: 82.80900716° W
 Elevation: 703.739

Camera Properties:

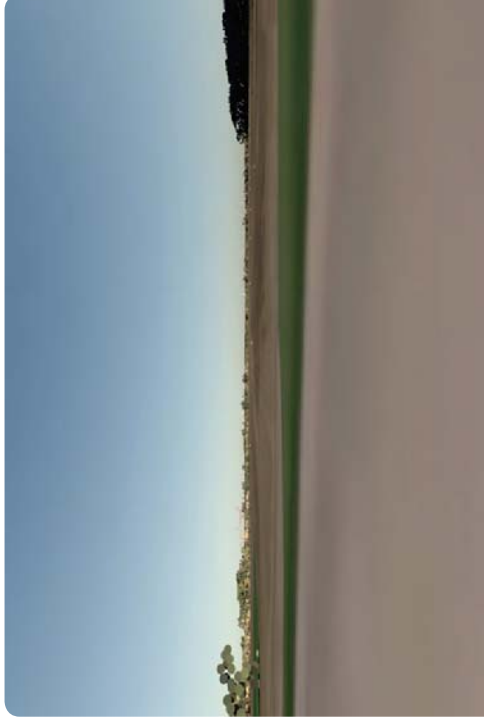
Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

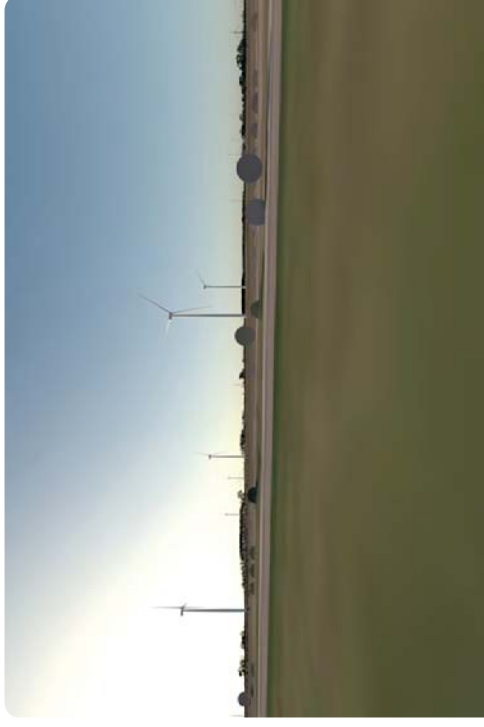
Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



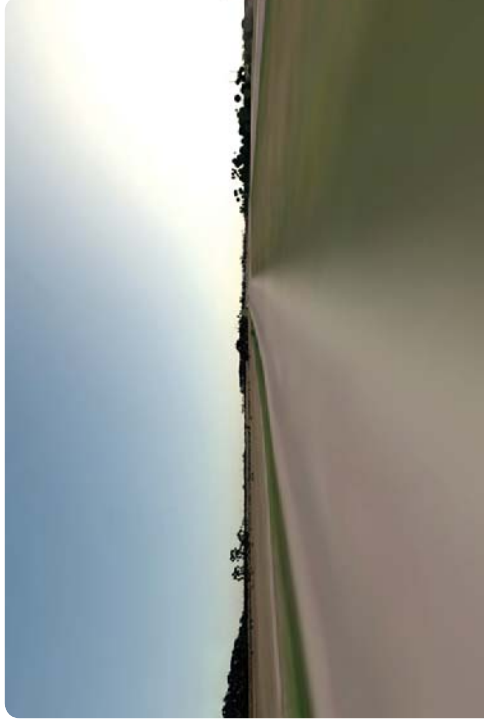
Viewpoint Location Map



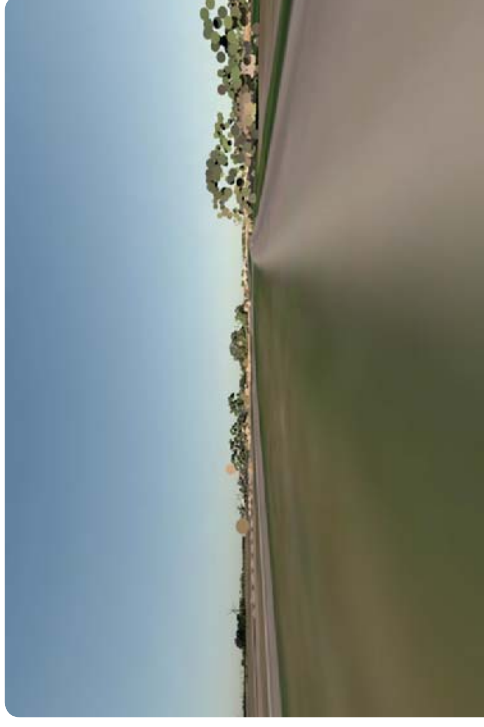
Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP5

View Location Information:

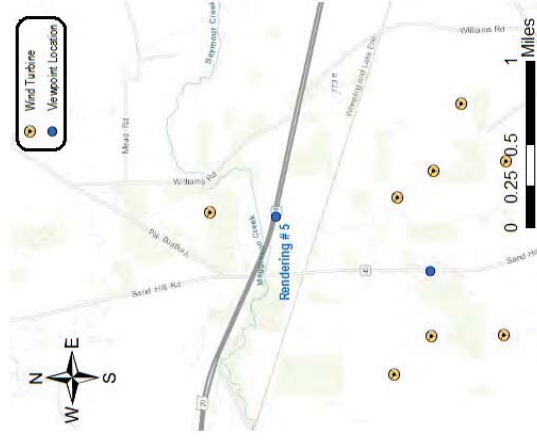
Location: United States Highway 20
 County: Huron
 Township: Lyme
 Latitude: 41.25803437° N
 Longitude: 82.75751610° W
 Elevation: 758.945

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP6

View Location Information:

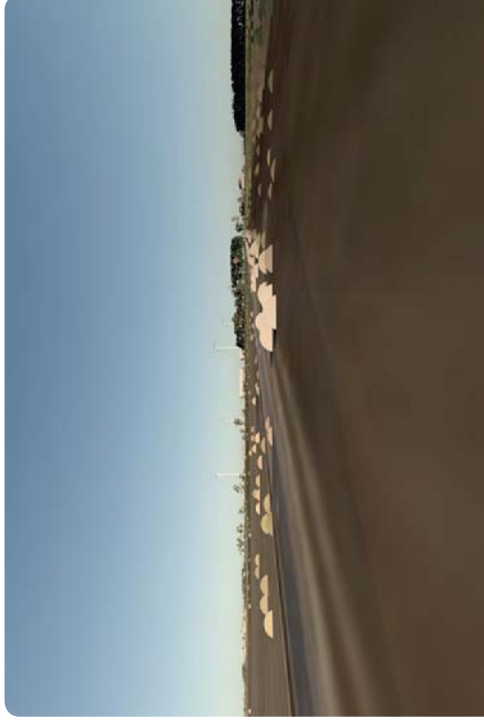
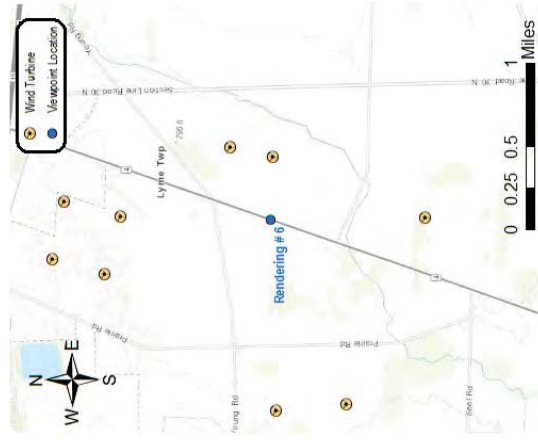
Location:	State Route 4
County:	Huron
Township:	Lyme
Latitude:	41.24247887° N
Longitude:	82.80518985° W
Elevation:	791.103

Camera Properties:

Camera Lens:.....50mm
Camera Type:.....Autodesk 3D Max Target Camera

Project Information:

Lidar Data:..... Ohio Statewide Imagery Program 2007
Turbine Blade Tip Height: 655 feet & 603 feet



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP7

View Location Information:

Location: County Road 40 (Sand Hill Rd)
 County: Huron
 Township: Lyme
 Latitude: 41 24'45.7149" N
 Longitude: 82 76'37.3810" W
 Elevation: 789.04

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

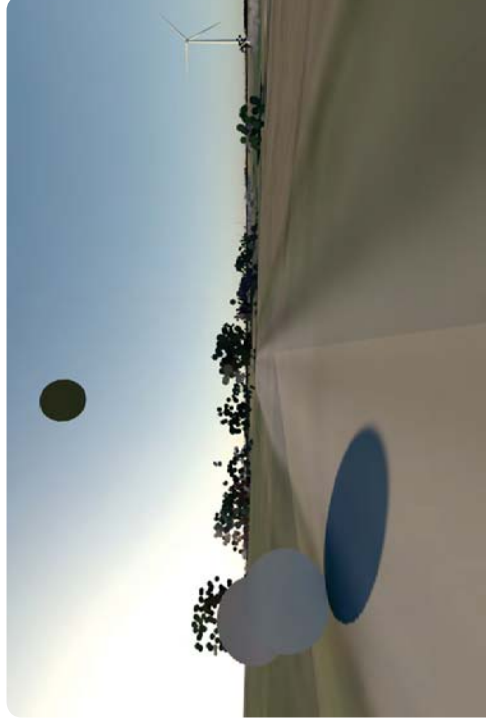
Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP8

View Location Information:

Location:County Road 64 (Pontiac Section Line Rd)
 County:Huron
 Township:Sherman
 Latitude:41°18'02.0864" N
 Longitude:82°30'09.264" W
 Elevation:826.541

Camera Properties:

Camera Lens:50mm
 Camera Type:Autodesk 3D Max Target Camera

Project Information:

Lidar Data:Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height:655 feet & 603 feet



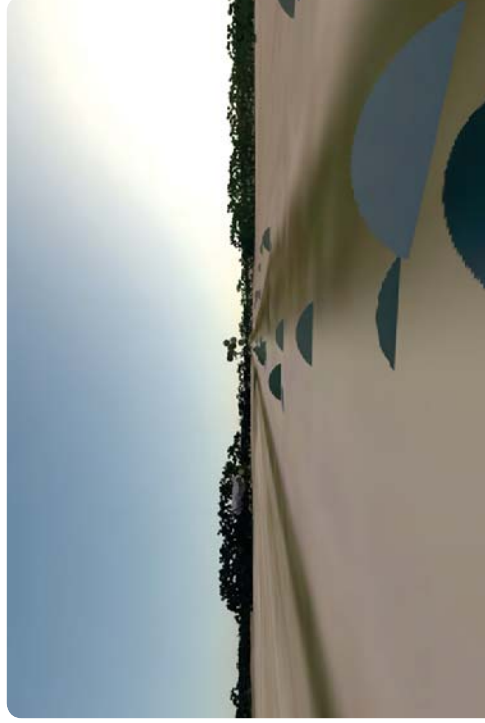
Viewpoint Location Map



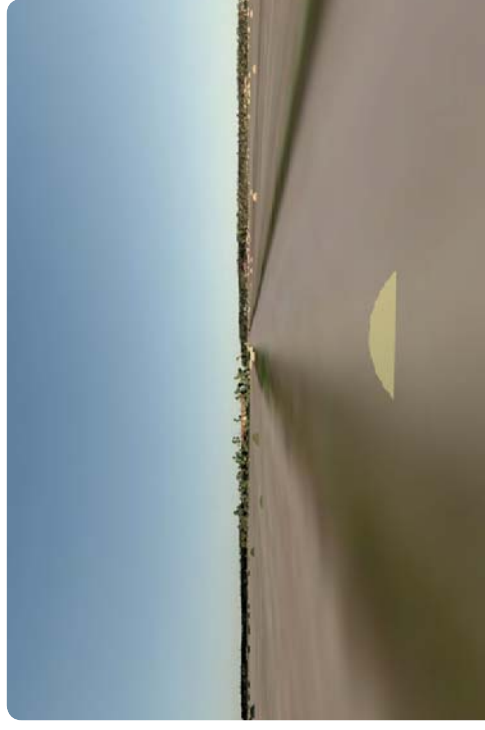
Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP9

View Location Information:

Location: Pontiac Section Line Road
County: Huron
Township: Sherman
Latitude: 41.17923303° N
Longitude: 82.77470122° W
Elevation: 795.555

Camera Properties:

Camera Lens: 50mm
Camera Type: Autodesk 3D Max Target Camera

Project Information:

Lidar Data: Ohio Statewide Imagery Program 2007
Turbine Blade Tip Height: 655 feet & 603 feet



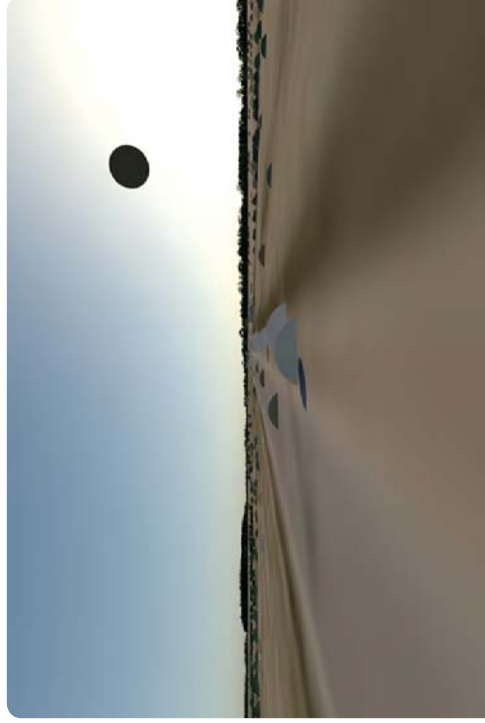
Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP10

View Location Information:

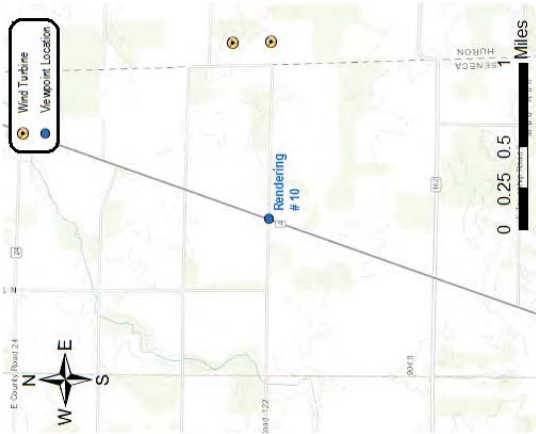
Location: Intersection of State Route 4 & N. Township Rd 122
County: Seneca
Township: Reed
Latitude: 41°13'88.1407" N
Longitude: 82°05'28.7847" W
Elevation: 868.358

Camera Properties:

Camera Lens: 50mm
Camera Type: Autodesk 3D Max Target Camera

Project Information:

Lidar Data: Ohio Statewide Imagery Program 2007
Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP11

View Location Information:

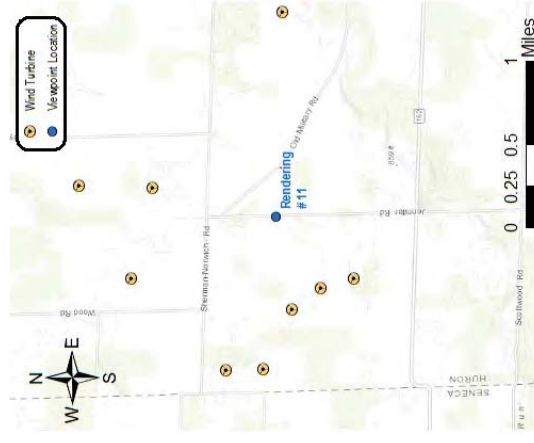
Location: County Road 194 (Jennifer Rd)
 County: Huron
 Township: Norwich
 Latitude: 41.13764570° N
 Longitude: 82.81501557° W
 Elevation: 848.53

Camera Properties:

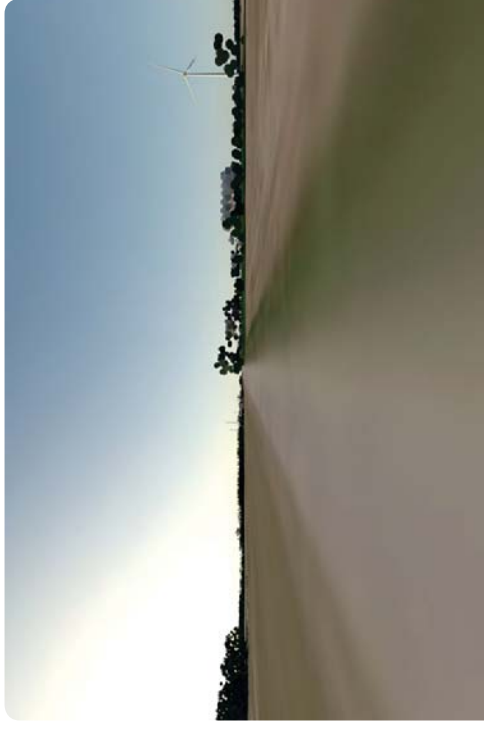
Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



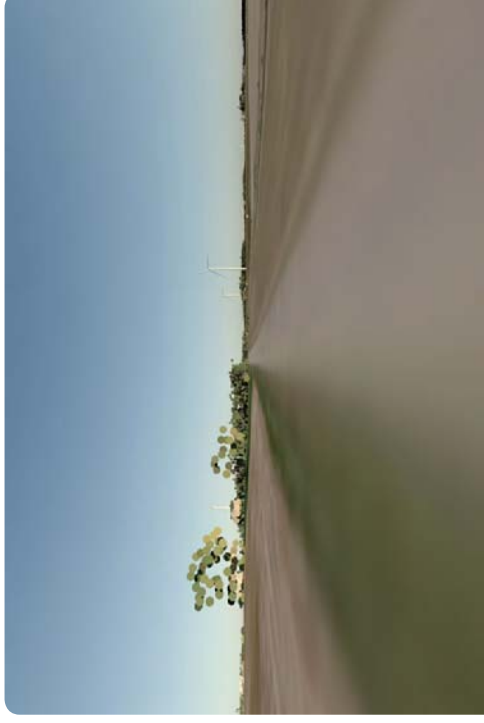
Viewpoint Location Map



Simulation Photo: View South



Simulation Photo: View West



Simulation Photo: View North



Simulation Photo: View East

Project Rendering HVP12

View Location Information:

Location: County Road 96 (Gregory Rd)
 County: Huron
 Township: Norwich
 Latitude: 41°13'30.8886" N
 Longitude: 82°7'44.6087" W
 Elevation: 836.832

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

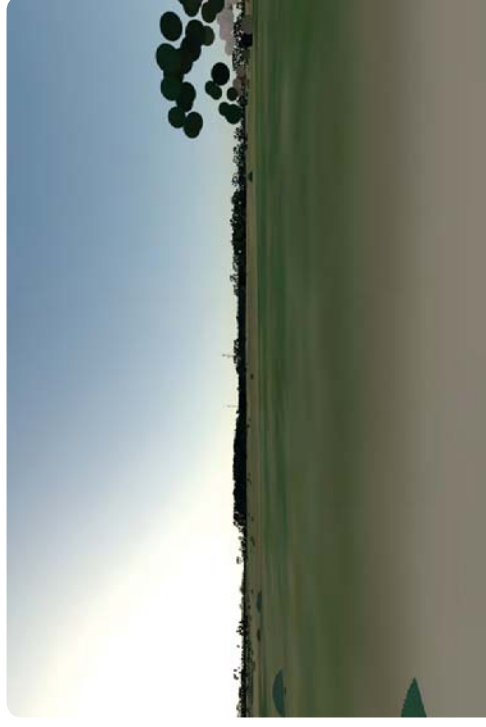
Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP13

View Location Information:

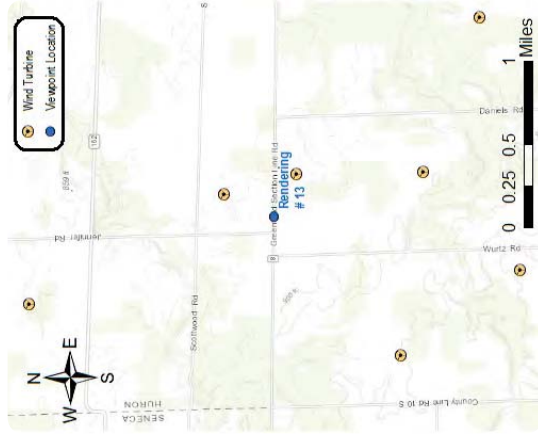
Location: County Road 8 (Greenfield Section Line Rd)
 County: Huron
 Township: Norwich
 Latitude: 41.10954640° N
 Longitude: 82.81196673° W
 Elevation: 891.311

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

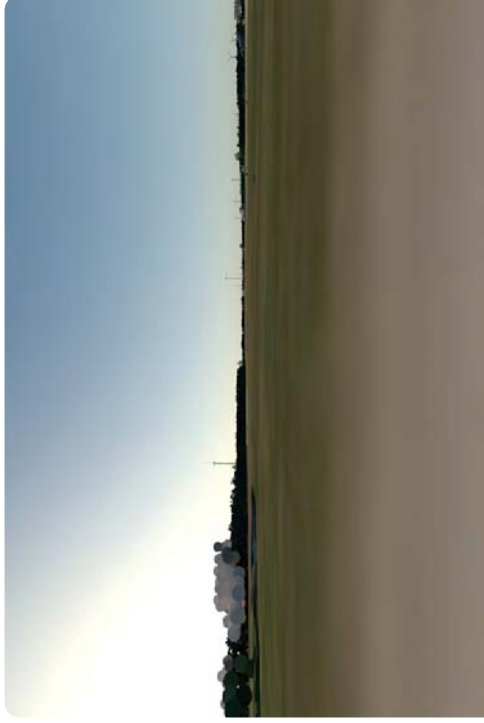
Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP14

View Location Information:

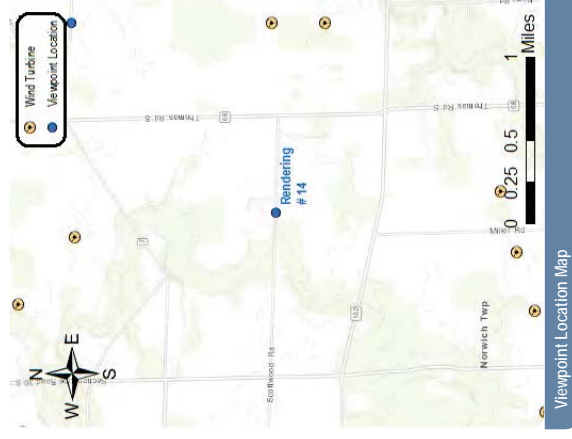
Location: County Road 9 (Scotwood Rd)
 County: Huron
 Township: Norwich
 Latitude: 41.11521575° N
 Longitude: 82.76618038° W
 Elevation: 856.623

Camera Properties:

Camera Lens: 50mm
 Camera Type: Autodesk 3D Max Target Camera

Project Information:

Lidar Data: Ohio Statewide Imagery Program 2007
 Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

Project Rendering HVP15

View Location Information:

Location: County Road 12 (Town Line Rd 12)
County: Huron
Township: Richmond
Latitude: 41.07058013° N
Longitude: 82.82119203° W
Elevation: 936.509

Camera Properties:

Camera Lens: 50mm
Camera Type: Autodesk 3D Max Target Camera

Project Information:

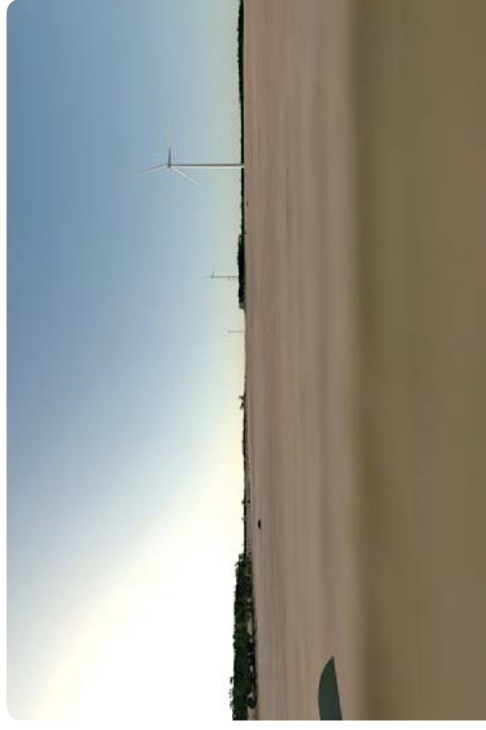
Lidar Data: Ohio Statewide Imagery Program 2007
Turbine Blade Tip Height: 655 feet & 603 feet



Viewpoint Location Map



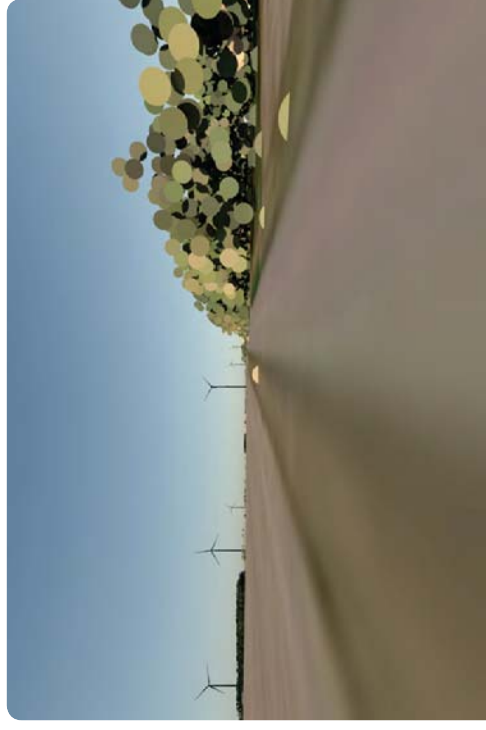
Simulation Photo: View North



Simulation Photo: View South



Simulation Photo: View East



Simulation Photo: View West

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in

Case No(s). 18-1607-EL-BGN

Summary: Application - Supplement to Application – Visual Impact Assessment electronically filed by Christine M.T. Pirik on behalf of Firelands Wind, LLC