

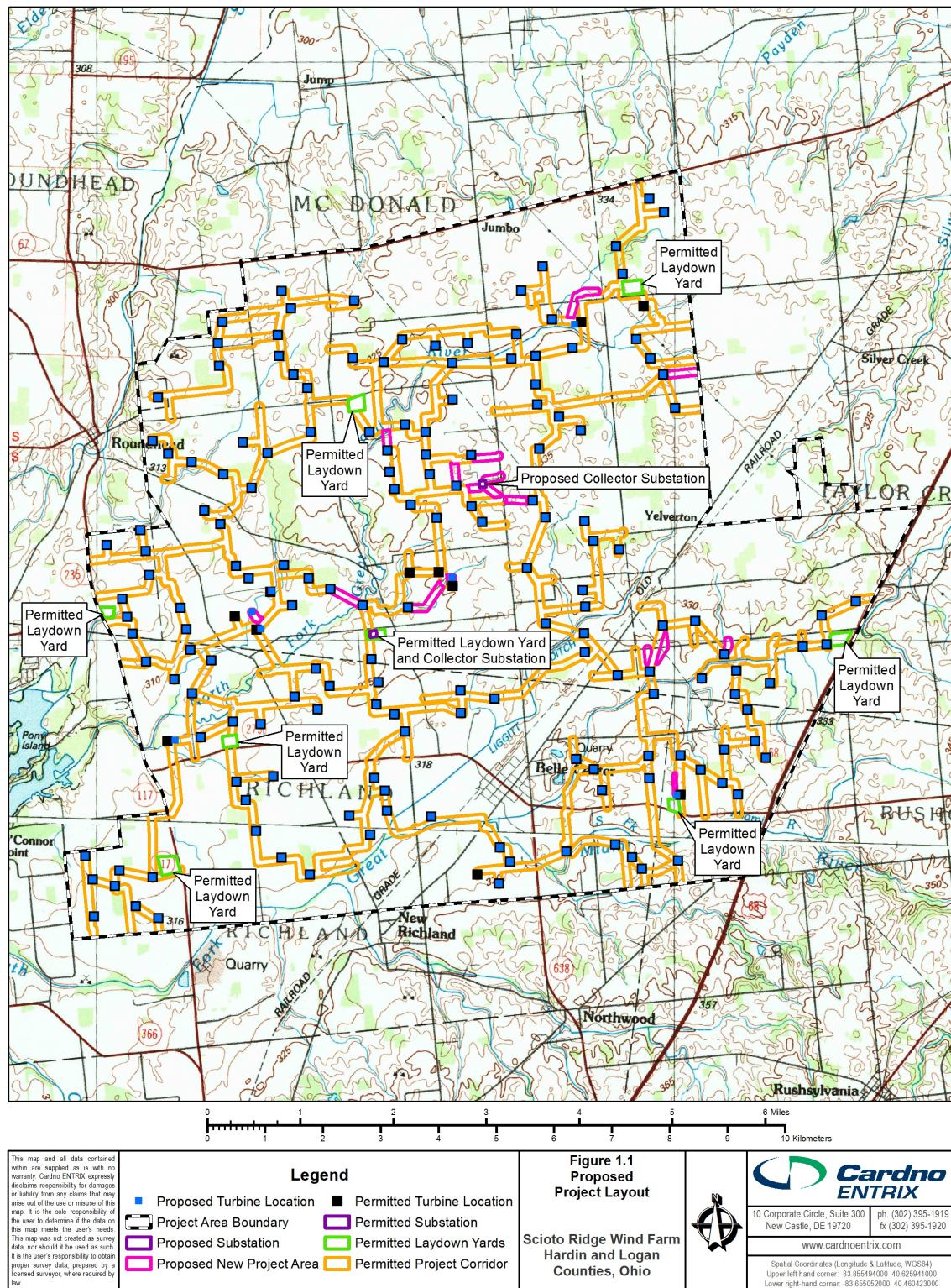


Figure 1.1 Scioto Ridge Wind Farm Proposed Project Layout

2 Wetland and Waterbody Delineations

Methodology followed the same process as in Cardno's 2013 *Ecological Assessment*.

2.1 Surface Water Resources

2.1.1 Desktop Assessment

Cardno performed a desktop habitat survey of the Study Area using Geographic Information Systems (GIS) to screen for and classify potential environmental resources. Sources of this reference material included, but was not limited to, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey for the Project Counties, historic aerial photographs or farmed wetland maps from the USDA Farm Service Agency (FSA), National Wetland Inventory (NWI) maps, Ohio Wetland Inventory (OWI) maps, U.S. Geological Survey (USGS) topographic maps, and recent aerial photographs. GIS layer data that did not contain data within the Study Area, or if applicable buffer area, were not studied further.

2.1.1.1 Navigable Waterways

No navigable waterways exist within the New Project Area.

2.1.1.2 Soils and Geology

Appendix B documents the existing soil and geologic conditions within the New Project Area, including the percentage of hydric soils. The table below identifies only the newest information from the most recent surveys.

Table 2-1 Fully Hydric Soils within the New Project Area

Symbol	Soil Description	Drainage Class	Area within New Project Area (acres)	% within reviewed New Project Area
Ca	Carlisle muck	very poorly drained	0.38	<1%
Ro	Roundhead muck	very poorly drained	3.90	2%
Total			4.28	2.20%

Source: USDA NRCS 2013

2.2 Field Delineations Methodologies

Wetland and waterbody surveys were conducted in the New Project Area using the same methodology as described in Appendix B of Cardno's 2013 *Ecological Assessment*. This methodology included;

- > Visual investigation of within a ¼ mile of either side of the New Project Area
- > Wetland delineations in accordance with 1987 USACE Corps of Engineers *Wetland Delineation Manual* (Environmental Laboratory, 1987) and USACE *Midwest Regional Supplement to the Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 2010)
- > Qualitative assessment of delineated Wetland using Ohio Rapid Assessment Method for Wetland (ORAM v 5.0, OEPA, 2001) methodology
- > Stream evaluations using OEPA Headwater Habitat Evaluation Index (HHEI) as outlined in the *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams Review Version 2.3* (OEPA, 2009)

- > Additional stream evaluation using were first evaluated using the OEPA's Qualitative Habitat Evaluation Index (QHEI) for perennial streams with drainage areas greater than one square mile (259 ha) or with predominant pools having maximum pool depths over 40 cm
- > Identification of the likelihood of any Federal- or State-listed species being found in the areas delineated

3 Wetland and Waterbody Delineation Results

The Cardno team conducted wetland and waterbody delineation surveys within the New Project Area, with a ¼ mile visual investigation on either side of the New Project Area, during July 2014. Cardno also noted potential habitat for Federal- or State-listed species within the surveyed areas.

3.1 Habitat Analysis Results

Prior to the field surveys, the ecological communities within the Study Area were mapped using National Land Cover Database (NLCD) (2006) datasets in GIS. Cultivated crops accounted for the largest type of land use within the Study Area and the New Project Area with approximately 149 acres (76% of the total amended Project Corridor). The second highest component of land use was Pasture/Hay which accounted for an additional 30 acres (15%) of the New Project Area. Deciduous forests (approximately 5 acres or 2%) and Grassland (less than 1 acre or less than 1%) accounted for very little of the New Project Area. Those forested areas that did occur were typical isolated woodlots with primarily composed of oaks and maples, with some additional hickory and locust species.

3.2 Federal- or State-Listed Species Impacts

The majority of the available habitat in the New Project Area is not suitable for the Federal- or State-listed plant or animal species that may potentially live in the greater area. Where suitable habitat does exist, it was often of such low quality as to be unusable.

Based on observations during Cardno's field delineations of the New Project Area and ¼ mile buffer, the aquatic habitats ranged from modified agricultural swales to isolated Wetland located in woodlots. Although some naturalized streams are found in the Study Area, the majority are still highly influenced by the surrounding land use and have only moderate quality. The majority of stream features may provide actual habitat, but the chemistry impacts from a lack of shade and high sedimentation reduce the quality of the waters for both plant and animal species. Further reducing the viability of streams within the Study Area is the constant management of the banks by mowing which will prevent any significant colonization by Federal- or State-listed species. During the delineation efforts of the New Project Area, no Federal- or State-listed aquatic plant or animal species were observed in any of the streams by Cardno field teams, including the Eastern Massasauga or freshwater mussels such as the Rayed Bean or Clubshell.

Likewise, the terrestrial resources identified during the delineation were unlikely to support any of the Federal- or State-listed plant or animal species due to poor quality. Where woodlots were encountered, they were highly fragmented or isolated among active agricultural lands. The lack of a buffer area around the woodlots also means higher disturbance to fauna from the adjacent land use during agricultural activity, such as tilling or harvesting. The woodlots encountered in the New Project Area lacked significant amounts of old growth and shagbark hickories which are potential bat roosting sites, and were instead populated primarily by Oaks and Maples of intermediate age. The plant communities of the woodlots were relatively common. The herb layers were often dominated by Reed Canary Grass with additional significant populations of the aggressive Virginia Waterleaf (*Hydrophyllum virginianum*). During the field efforts conducted by Cardno, no large fauna (Listed or otherwise) were recorded, although the presence of tree stands in many of the woodlots indicates the presence of deer in hunting season. Cardno

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/11/2014 5:30:02 PM

in

Case No(s). 14-1557-EL-BGA

Summary: Application to Amend -- Exhibit D (Part 18 of 31) electronically filed by Mrs. Gretchen L. Petrucci on behalf of Hardin Wind LLC