

**Beatty Road Station Drainage
Improvements, Franklin County,
Ohio**

**Ecological Features Inventory
Report**



Prepared for:
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1.0 INTRODUCTION

American Electric Power (AEP) is proposing to improve drainage around the station, install a new fence around the perimeter of the station approximately 20 feet outside the existing station fence (requires an approximately 12-foot wide temporary access road to install the new fence), and complete other station enhancements within the existing station footprint (Figures 1 and 2, Appendix A). The proposed Project study area is located on Beatty Road west of U.S. Route 62 in Grove City, Franklin County, Ohio (Figure 1, Appendix A). The proposed Project study area includes 57.9 acres and was surveyed for wetlands, waterbodies, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on February 23, 2016.

2.0 METHODS

2.1 WETLAND DELINEATION

Prior to conducting field surveys, a desktop review of the Project study area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, and aerial imagery mapping. Stantec completed a wetland delineation in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0) (USACE 2010). Wetland categories were classified using the Ohio Environmental Protection Agency's (OEPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project study area (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (2002). Functional assessment of streams within the Project study area was based on completion of the OEPA's Headwater Habitat Evaluation Index (HHEI) and/or Qualitative Habitat Evaluation Index (QHEI). The centerline of each stream was identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software.

Upland drainage features are also delineated within the project boundary. These features lack a continuously defined bed, bank, and ordinary high water mark. They are shown in Appendix A – Figure 3 and examples are shown in Appendix C.

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2.3 RARE SPECIES

Stantec contacted the Ohio Department of Natural Resources (ODNR), and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats within the vicinity of the Project study area (Appendix B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species and their habitats, Stantec walked the proposed Project study area and collected information on existing habitat within the Project study area and the potential for these habitats to be used by these species.

3.0 RESULTS

Stantec completed field surveys on February 23, 2016 for wetlands, waterbodies, and threatened and endangered species or their habitats. Figure 2 shows the delineated wetlands and drainage features identified within the Project study area and Figure 4 shows the habitats identified within the Project study area during rare, threatened, and endangered species habitat assessment surveys (Appendix A). Representative photos of the wetlands, waterbodies, and other habitats identified within the Project study area are included in Appendix C of this report (photo locations are shown on Figure 3 and Figure 4). Completed wetland determination and ORAM data forms are included in Appendix D.

3.1 TERRESTRIAL HABITAT

Table 1. Vegetation Communities and Land Cover Found within the Beatty Road Station Drainage Improvements Project Study Area, Franklin County, Ohio

Vegetative Communities and Land Cover Types within the Project Study Area:	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Acres Within Project Study Area
Agriculture	Active cropland, including turf grass, inactive cropland, orchards, vineyards, or hayfields	No	31.18
Industrial Land	Extreme Disturbance/ Rural Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	23.11
Open Land	Non-forested lands and scrub/shrub wetlands used for open space or pasture	No	3.16
Scrub/shrub	Shrub-dominated habitat, trees may be very scattered and less than 15% of habitat	No	0.46
Total:			57.91

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3.2 WETLANDS

Table 2. Summary of Wetland Resources Found within the Beatty Road Station Drainage Improvements Project Study Area, Franklin County, Ohio

Wetland Name	Photo Numbers	Wetland Classification ¹	ORAM Score	ORAM Category	Delineated Area (acres)	Impacted Area (acres)
Wetland 1	1	PEM ²	17.5	1	0.16	0.00
Wetland 2	2	PEM	25	1	1.15	0.03
Wetland 3	3	PEM	19	1	0.03	0.03
Wetland 4	4	PEM	27.5	1	0.12	0.00
Wetland 5	5	PEM	16.5	1	0.05	0.05
Total					1.51	0.11
¹ Wetland classification is based on Cowardin et al. 1979.						
² PEM = Palustrine Emergent Wetland						

3.3 STREAMS

No streams were found during field surveys. Upland drainage features are shown on Figure 3 (Appendix A).

3.4 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 3. Summary of Potential Ohio State-Listed Species within the Beatty Road Station Drainage Improvements Project Study Area, Franklin County, Ohio

Common Name	Scientific Name	State ¹ Listing	Known to Franklin County?	Known Within One Mile of Project study area? ²	Habitat Preference	Habitat Observed in Project Study Area?	Impact Assessment	ODNR Comments/ Recommendations
Butterfly								
Regal Fritillary	<i>Speyeria idalia</i>	E	Yes	No	Occurs in tall grass prairie remnants (Butterflies and Moths of North America 2016).	No	No suitable habitat is present for this species within the Project study area.	No comments.
Mammals								
Indiana Bat	<i>Myotis sodalis</i>	E	Yes	No	Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007).	Yes	No suitable habitat is present within the grading limits.	If suitable habitat occurs, cut trees between October 1 and March 31.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	SC	Yes	No	Roosting habitat and maternity roosts in dead or live trees, snags with cavities, peeling or exfoliating bark, split tree trunk and/or branches, occasional roosting habitat in structures such as barns and sheds, and foraging habitat in upland and lowland woodlots and tree lined corridors (USFWS 2015).	Yes	No suitable habitat is present within the grading limits.	No comments.
Big Brown Bat	<i>Eptesicus fuscus</i>	SC	Yes	No	During warm months, occurs in variety of habitats including near water, foraging over fields, in forest openings and in urban or suburban areas. Roosting sites can include buildings of various types, under bridges, in bat houses, etc. and winter hibernation sites can include mines and caves (ODNR Division of Wildlife 2016b).	Yes	No suitable habitat is present within the grading limits.	No comments.
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	SC	Yes	No	Prefers mature northern forests with ponds and/or streams nearby. They roost in trees year round (ODNR Division of Wildlife 2016t).	Yes	No suitable habitat is present within the grading limits.	No comments.
Eastern Red Bat	<i>Lasiurus borealis</i>	SC	Yes	No	These are solitary roosting bats and roost sites include trees, shrubs, and clusters of weeds in summer months. They can hibernate in trees and tree cavities (ODNR Division of Wildlife 2016g).	Yes	No suitable habitat is present within the grading limits.	No comments.
Hoary Bat	<i>Lasiurus cinereus</i>	SC	Yes	No	Hoary bats roost in the foliage of deciduous and coniferous trees approximately 3-5 m (10-16 ft) from the ground. The roost positions are open from below but otherwise surrounded by dense foliage (SUNY ESF 2016a).	Yes	No suitable habitat is present within the grading limits.	No comments.
Little Brown Bat	<i>Myotis lucifugus</i>	SC	Yes	No	In the winter months, these bats use caves, mines, etc. for hibernation and in warm months, they use tree cavities, man-made structures, etc. for roosting (ODNR Division of Wildlife 2016i).	Yes	No suitable habitat is present within the grading limits.	No comments.
Tri-colored Bat	<i>Perimyotis subflavus</i>	SC	Yes	No	In the winter months, these bats use caves, mines, etc. for hibernation and in warm months, they use tree cavities, man-made structures such as bridges, barns, sheds, etc. for roosting (ODNR Division of Wildlife 2016x).	Yes	No suitable habitat is present within the grading limits.	No comments.
Woodland Vole	<i>Microtus pinetorum</i>	SC	Yes	No	Occurs in deciduous and mixed forests where soils are loose and covered in thick leaf litter (SUNY ESF 2016b).	No	No suitable habitat is present for this species within the Project study area.	No comments.
Deer Mouse	<i>Peromyscus maniculatus</i>	SC	Yes	No	Occurs in nearly every dry land habitat within its range, very adaptable. They can be found in forests, grasslands, shrub lands, agriculture fields, and deserts (ODNR Division of Wildlife 2016d).	Yes	Some suitable habitat occurs within Project study area. Impacts are possible.	No comments.
Southern Bog Lemming	<i>Synaptomys cooperi</i>	SC	Yes	No	Occurs in low, damp bogs and meadows with heavy vegetative growth (ODNR Division of Wildlife 2016u).	No	No suitable habitat is present for this species within the Project study area.	No comments.

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Common Name	Scientific Name	State ¹ Listing	Known to Franklin County?	Known Within One Mile of Project study area? ²	Habitat Preference	Habitat Observed in Project Study Area?	Impact Assessment	ODNR Comments/ Recommendations
American Badger	<i>Taxidea taxus</i>	SC	Yes	No	Occurs in grasslands with a preference for short grass areas such as pastures. They burrow in the ground (ODNR Division of Wildlife 2016a).	No	No suitable habitat is present for this species within the Project study area.	No comments.
Birds								
Sharp-shinned Hawk	<i>Accipiter striatus</i>	SC	Yes	No	Nests are platforms made of twigs and bark; typically located in conifer trees and high off the ground (ODNR Division of Wildlife 2015).	No	No suitable habitat is present for this species within the Project study area.	No comments.
Northern Bobwhite	<i>Colinus virginianus</i>	SC	Yes	No	Northern bobwhite is a forest edge species and historically in Ohio, they lived where woodlands and prairie overlap or in areas of cleared timber (ODNR Division of Wildlife 2016l).	No	No suitable habitat is present for this species within the Project study area.	No comments.
Cerulean Warbler	<i>Dendroica cerulea</i>	SC	Yes	No	Breeding occurs in mature deciduous forests. They prefer large tracts of forests of at least 50-75 acres and oak-hickory forests. They normally avoid small, isolated tracts of forest. They tend to breed in the interior of forests but have also been found near the edge (ODNR Division of Wildlife 2016c).	No	No suitable habitat is present for this species within the Project study area.	No comments.
Prothonotary Warbler	<i>Protonotaria citrea</i>	SC	Yes	No	Nests are built within cavities and inhabit wooded wetlands (ODNR Division of Wildlife 2016p).	No	No suitable habitat is present for this species.	No comments.
Upland Sandpiper	<i>Tartramia longicauda</i>	E	Yes	No	Preferred habitat includes large areas of short grass field for feeding and courtship with interspersed or adjacent taller grasses for nesting and brood cover. Airfields and grazed pastures and grassy fields currently provide the majority suitable habitat in the northeastern U.S. (Natureserve 2016b).	No	No suitable habitat is present for this species within the Project study area.	Avoid grasslands and grazed or ungrazed pastures, especially from April 25-July 31.
Amphibians								
Eastern Hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	E	Yes	No	Found mostly in unglaciated (south and east) Ohio, hellbenders prefer large, swift flowing streams where they hide during the day under large rocks. It typically feeds on crayfish, snails, minnows, insects, and worms (ODNR Division of Wildlife 2016f)	No	No suitable habitat occurs in within Project study area.	No comments.
Midland Mud Salamander	<i>Pseudotriton montanus diastictus</i>	T	Yes	No	This salamander is often observed under large, flat stones. They prefer muddy areas (ODNR Division of Wildlife 2016j)	No	No suitable habitat occurs in within Project study area.	No comments.
Eastern Cricket Frog	<i>Acris crepitans crepitans</i>	SC	Yes	No	This frog inhabits weed-choked permanent ponds and streams (ODNR Division of Wildlife 2016e).	No	No suitable habitat occurs in within Project study area.	No comments.
Four-toed Salamander	<i>Hemidactylum scutatum</i>	SC	Yes	No	This salamander lives close to boggy woodland ponds and swamps where it hides beneath logs, rocks, slabs or bark, and even leaves (ODNR Division of Wildlife 2016h).	No	No suitable habitat occurs in within Project study area.	No comments.
Mussels								
Fanshell	<i>Cyprogenia stegaria</i>	E	Yes	No	This mussel is found in medium to large streams with gravel substrates and strong current, in both deep and shallow water (NatureServe 2016d).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Butterfly	<i>Ellipsaria lineolata</i>	E	Yes	No	This mussel is found in large rivers and stretches with pronounced current and substrate of course sand and gravel. It can also be found in deep impoundment areas (NatureServe 2016e).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.

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Elephant-ear	<i>Elliptio crassidens crassidens</i>	E	Yes	No	This mussel is found in muddy sand, sand, and rocky substrates in moderate currents. In some areas, it is common in large creeks to rivers with moderate to swift currents primarily on sand and limestone or rock substrates (NatureServe 2016f).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Purple Catspaw	<i>Epioblasma obliquata obliquata</i>	E	Yes	No	This mussel can be found in medium to large rivers with moderate gradient and riffles. Substrates can be sand to gravel (NatureServe 2016g).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	E	Yes	No	Habitat includes riffles and firmly packed substrates of fine to coarse gravel. This mussel needs highly oxygenated water (NatureServe 2016h).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	No	Snuffbox is commonly found buried in the substrate. It is found in a wide range of particle sized substrates, however, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998, Watters et al. 2009).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Ebonyshell	<i>Reginaia (Fusconaia) ebena</i>	E	Yes	No	Inhabits large rivers and prefers swift water and stable sand or gravel shoals. Coarse sand and gravel substrate provides the most suitable habitat. It can occur at depths of 10-15 feet with current associated (NatureServe 2016j).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Long-solid	<i>Fusconaia subrotunda subrotunda</i>	E	Yes	No	Occurs in medium to large rivers in sand and gravel with strong current (NatureServe 2016k).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Sharp-ridged Pocketbook	<i>Lampsilis ovata</i>	E	Yes	No	This mussel is a generalist, occurring in different sized streams/rivers. Typically occurs in moderate to strong current with substrates of gravel and coarse sand (NatureServe 2016n).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Washboard	<i>Megaloniaias nervosa</i>	E	Yes	No	Occurs in large rivers, typically in main channel or overbank areas of reservoirs. It is found in areas of slow current with muddy to coarse gravel substrates and water can be up to 50 feet (NatureServe 2016p).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.

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Clubshell	<i>Pleurobema clava</i>	E	Yes	No	The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra (2001) found the clubshell in gravel/sand substrate, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Ohio pigtoe	<i>Pleurobema cordatum</i>	E	Yes	No	Occurs in medium to large rivers directly above riffles of gravel, cobble, and boulder, but occasionally in muddy or sandy or gravel habitats at great depths (NatureServe 2016r).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	E	Yes	No	The typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Found in medium to large rivers in sand and gravel shoals (NatureServe 2016t).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Wartyback	<i>Quadrula nodulata</i>	E	Yes	No	Occurs in medium to large rivers generally in pools with depths up to 15-18 feet. Substrates include sand and mud (NatureServe 2016u).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Rayed Bean	<i>Villosa fabalis</i>	E	Yes	No	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (Butler 2002, Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Black Sandshell	<i>Ligumia recta</i>	T	Yes	No	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more. Found in sand, gravel, or silt (NatureServe 2016l).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Threehorn Wartyback	<i>Obliquaria reflexa</i>	T	Yes	No	Habitat includes large rivers with moderately strong current and stable substrate of gravel, sand, and mud (NatureServe 2016q).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.

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Fawnsfoot	<i>Truncilla donaciformis</i>	T	Yes	No	Occurs in medium to large sized streams and rivers at variable depths. Substrates are typically either mud or sand with moderate current (NatureServe 2016x).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Pondhorn	<i>Uniomerus tetralasmus</i>	T	Yes	No	This species typically inhabits the quiet or slow-moving, shallow waters of sloughs, borrow pits, ponds, ditches, and meandering streams. It is tolerant of poor water conditions and can be found well buried in a substrate of fine silt and/or mud. It has been known to survive for extended periods of time when a pond or slough has temporarily dried up by burying itself deep into the substrate (NatureServe 2016z).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Elktoe	<i>Alasmidonta marginata</i>	SC	Yes	No	Habitat can be any sized streams and it occurs in riffles with swift current and substrates of firmly packed fine to coarse gravel. Water depths are typically shallow of several inches to two feet. It has also been found in cobble (NatureServe 2016a).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Purple Wartback	<i>Cyclonaias tuberculata</i>	SC	Yes	No	Habitat is typically a gravel/mud bottom and it usually occurs at depths of less than two feet but can be found up to 20 feet in depth. Different forms of this mussel inhabit small to medium sized rivers and the main channel of large rivers (NatureServe 2016c).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	SC	Yes	No	Mainly found in and around riffle areas of clear, hydrologically stable small to medium sized streams and rivers. It has been found at depths up to one meter and in substrates of gravel and sand stabilized by cobble and boulders (NatureServe 2016m).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Creek Heelsplitter	<i>Lasmigona compressa</i>	SC	Yes	No	Occurs in rivers and streams of various sizes and it can be found in substrates of gravel, sand, or mud (NatureServe 2016o).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Round Pigtoe	<i>Pleurobema sintoxia</i>	SC	Yes	No	Occurs in medium to large rivers in mixed mud, sand, and gravel substrates. It occurs in current at a variety of depths (NatureServe 2016s).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.

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Kidneyshell	<i>Ptychobranchus fasciolaris</i>	SC	Yes	No	Commonly found in small to medium sized rivers. It has also been found in Lake Erie, Lake St. Clair, and Lake Chautauqua. It is found in riffle areas of streams with substrates firmly packed coarse gravel and sand with moderate to swift current (NatureServe 2016v).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Salamander Mussel	<i>Simpsonaias ambigua</i>	SC	Yes	No	Habitat is typically sand or silt under large, flat stones in areas of swift current in medium to large rivers and lakes (NatureServe 2016w).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Deertoe	<i>Truncilla truncata</i>	SC	Yes	No	Habitat is typically fine gravel mixed with sand and mud, but it is a generalist in terms of river size (NatureServe 2016y).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Fish								
Spotted Darter	<i>Etheostoma maculatum</i>	E	Yes	No	This fish is found in medium sized rivers and streams. They are typically found in areas of swift current at the top or bottom end of a riffle where there are many very large boulders or flab slabs or rock. They spend most of their time hiding under the upstream edge of these large rocks with their heads sticking out watching for food (ODNR Division of Wildlife 2016v).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Shortnose Gar	<i>Lepisosteus platostomus</i>	E	Yes	No	This fish is found in large rivers and associated overflow ponds and backwaters (ODNR Division of Wildlife 2016s).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Popeye Shiner	<i>Notropis ariommus</i>	E	Yes	No	This fish is found in extremely clear waters in moderate sized streams. These streams usually have slow to moderate flow and many long slow pools (ODNR Division of Wildlife 2016o).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Scioto Madtom	<i>Noturus trautmani</i>	E	Yes	No	Prefers tail end of riffles with sand and gravel substrate (ODNR Division of Wildlife 2016q).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.

BEATTY ROAD STATION DRAINAGE IMPROVEMENTS, FRANKLIN COUNTY, OHIO

Common Name	Scientific Name	State ¹ Listing	Known to Franklin County?	Known Within One Mile of Project study area? ²	Habitat Preference	Habitat Observed in Project Study Area?	Impact Assessment	ODNR Comments/ Recommendations
Tippecanoe Darter	<i>Etheostoma Tippecanoe</i>	T	Yes	No	This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrate of gravel or cobble sized rocks (ODNR Division of Wildlife 2016w).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Tonguetied Minnow	<i>Exoglossum laurae</i>	T	Yes	No	Habitat includes rocky pools and runs of cool to warm water. They prefer clear creeks and small to medium sized rivers of moderate gradient with unsilted bottoms of gravel, cobble, and/or boulder. Spawning occurs in gravel nests in slow to moderate current (NatureServe 2016h).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Paddlefish	<i>Polyodon spathula</i>	T	Yes	No	This fish is found in the Ohio River and its larger tributaries, preferring sluggish pools and backwater areas (ODNR Division of Wildlife 2016n).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
Muskellunge	<i>Esox masquinongy</i>	SC	Yes	No	Prime habitat for this fish is heavily vegetated lakes or streams with large/long pools with a minimum depth of 3-4 feet and abundant woody structures and large debris (ODNR Division of Wildlife 2016k).	No	No suitable habitat occurs in within Project study area.	No comments.
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	E	Yes	No	This species requires two different habitat types that are connected by free-flowing water: adults are found in fast flowing clear brooks with either sand or gravel bottom and juvenile/ammocoetes are found in slow moving water, buried in soft substrate of medium to large streams (ODNR Division of Wildlife 2016m).	No	No suitable habitat occurs in within Project study area.	Due to the location and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.
River Redhorse	<i>Moxostoma carinatum</i>	SC	Yes	No	This fish prefers only the largest rivers in the Ohio and Lake Erie drainages and are found in deep pools with moderate current over bedrock or gravel substrates (ODNR Division of Wildlife 2016q).	No	No suitable habitat occurs in within Project study area.	No comments.
¹ E= Endangered; T= Threatened; SC= Species of Concern								
² According to correspondence from ODNR Natural Heritage Database – Appendix B								

BEATTY ROAD STATION DRAINAGE IMPROVEMENTS, FRANKLIN COUNTY, OHIO

Table 4. Summary of Potential Federally Listed Species within the Beatty Road Station Drainage Improvements Project Study Area, Franklin County, Ohio

Common Name	Scientific Name	Federal Listing ¹	Known to Franklin County?	Habitat Preference	Habitat Observed in Project Study Area?	Impact Assessment	USFWS Comments/ Recommendations
Indiana bat	<i>Myotis sodalis</i>	E	Yes	Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007).	Yes	No suitable habitat is present within the grading limits.	Due to the type, size and location of the Project, USFWS does not anticipate adverse effects.
Northern long-eared bat	<i>Myotis septentrionalis</i>	T	Yes	Roosting habitat and maternity roosts in dead or live trees, snags with cavities, peeling or exfoliating bark, split tree trunk and/or branches, occasional roosting habitat in structures such as barns and sheds, and foraging habitat in upland and lowland woodlots and tree lined corridors (USFWS 2015).	Yes	No suitable habitat is present within the grading limits.	Due to the type, size and location of the Project, USFWS does not anticipate adverse effects.
Scioto Madtom	<i>Noturus trautmani</i>	E	Yes	Prefer tail end of riffles over sand and gravel substrate (ODNR Division of Wildlife 2016q).	No	No suitable habitat occurs within Project study area.	No comments.
Clubshell	<i>Pleurobema clava</i>	E	Yes	The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra (2001) found the clubshell in gravel/sand substrate, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No suitable habitat occurs within Project study area.	No comments.
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	E	Yes	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie (USFWS 2015).	No	No suitable habitat occurs within Project study area.	No comments.
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	T	Yes	The typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Found in medium to large rivers in sand and gravel shoals (NatureServe 2016d).	No	No suitable habitat occurs within Project study area.	No comments.
Rayed bean	<i>Villosa fabalis</i>	E	Yes	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (Butler 2002, Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No	No suitable habitat occurs within Project study area.	No comments.
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	Snuffbox is commonly found buried in the substrate. It is found in a wide range of particle sized substrates, however, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998, Watters et al. 2009).	No	No suitable habitat occurs within Project study area.	No comments.

E=endangered; T=threatened

4.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species or their habitats within the Project study area on February 23, 2016. During the field surveys, five palustrine emergent wetlands totaling approximately 1.51 acres were delineated within the Project study area, however, only 0.11 acre will be impacted by the Project. The five wetlands were classified as Category 1 wetlands. No streams or open water features were determined within the Project study area.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project study area at the time of the fieldwork. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment. The information provided by Stantec to AEP may differ from previous preliminary surveys performed by other firms at the Project location.

The ODNR Natural Heritage Database (Appendix B) is unaware of any unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, or other protected natural areas within the Project study area or a one-mile radius of it.

The Project study area includes potential roosting habitat for Indiana, northern long-eared, big brown, eastern red, silver-haired, little brown, tri-colored, and hoary bats and deer mice, which are all Ohio-state listed as species of special concern. However, no occurrences of these species are known to occur within Project study area or within a one-mile radius of it, according to correspondence received from the ODNR Natural Heritage Database on March 23, 2016 (Appendix B). If suitable trees must be cut, the ODNR recommends the cutting occur between October 1 and March 31. No occurrences of these species were encountered during the field survey, and no potential roosting habitat is present within the grading limits.

The Project study area also includes potential roosting and foraging habitat for the Indiana and northern long-eared bats, which are federally listed species. However, no potential roosting habitat is present within the grading limits, and the ODNR (Appendix B) has no records of these species within the Project study area or a one-mile radius of it. A request for technical assistance was sent to USFWS on February 24, 2016 and a response was received on March 22, 2016 (Appendix B). Due to the size and location of the Project, USFWS does not anticipate adverse effects to Indiana or northern long-eared bats. USFWS is not aware of federal wilderness areas, wildlife refuges, or designated critical habitat within the Project study area (Appendix B).

ODNR Office of Real Estate and USFWS recommend that impacts to wetlands and other water resources be avoided and/or minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation (Appendix B).

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Appendix A Figures

A.1 FIGURE 1 – PROJECT LOCATION

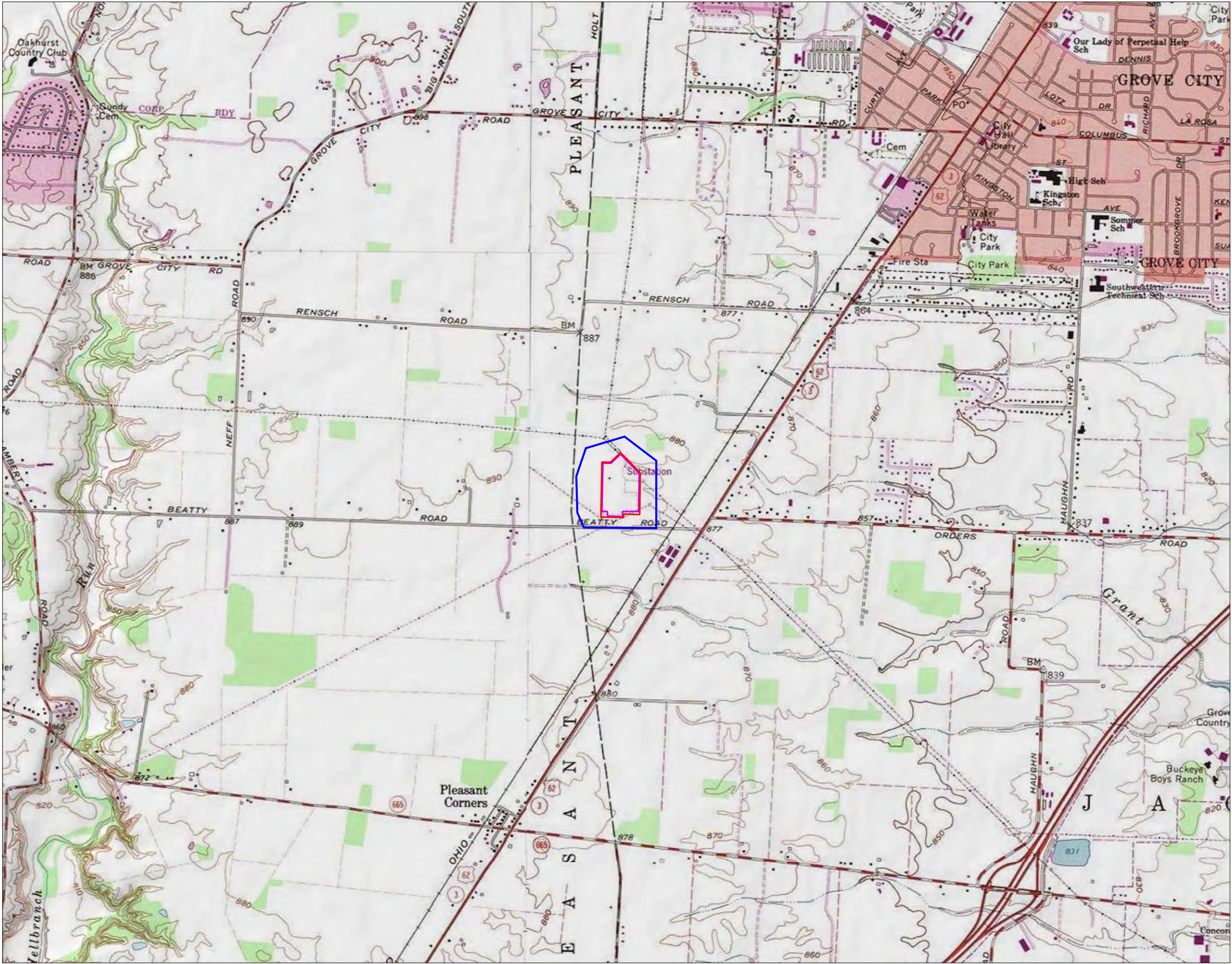
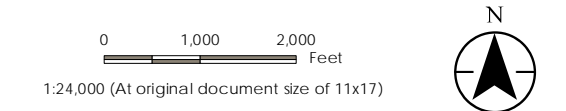


Figure No. 1
Title
Project Location Map

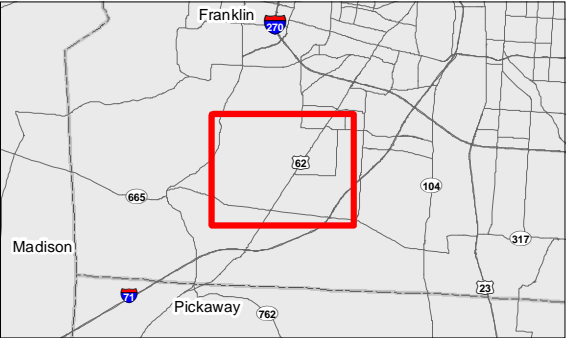
Client/Project
American Electric Power
Beatty Road Station Drainage Improvements

Project Location
Grove City
Franklin County, Ohio
193704259
Prepared by BT on 2016-02-22
Technical Review by CP on 2016-02-22
Independent Review by DG on 2016-02-25



Legend

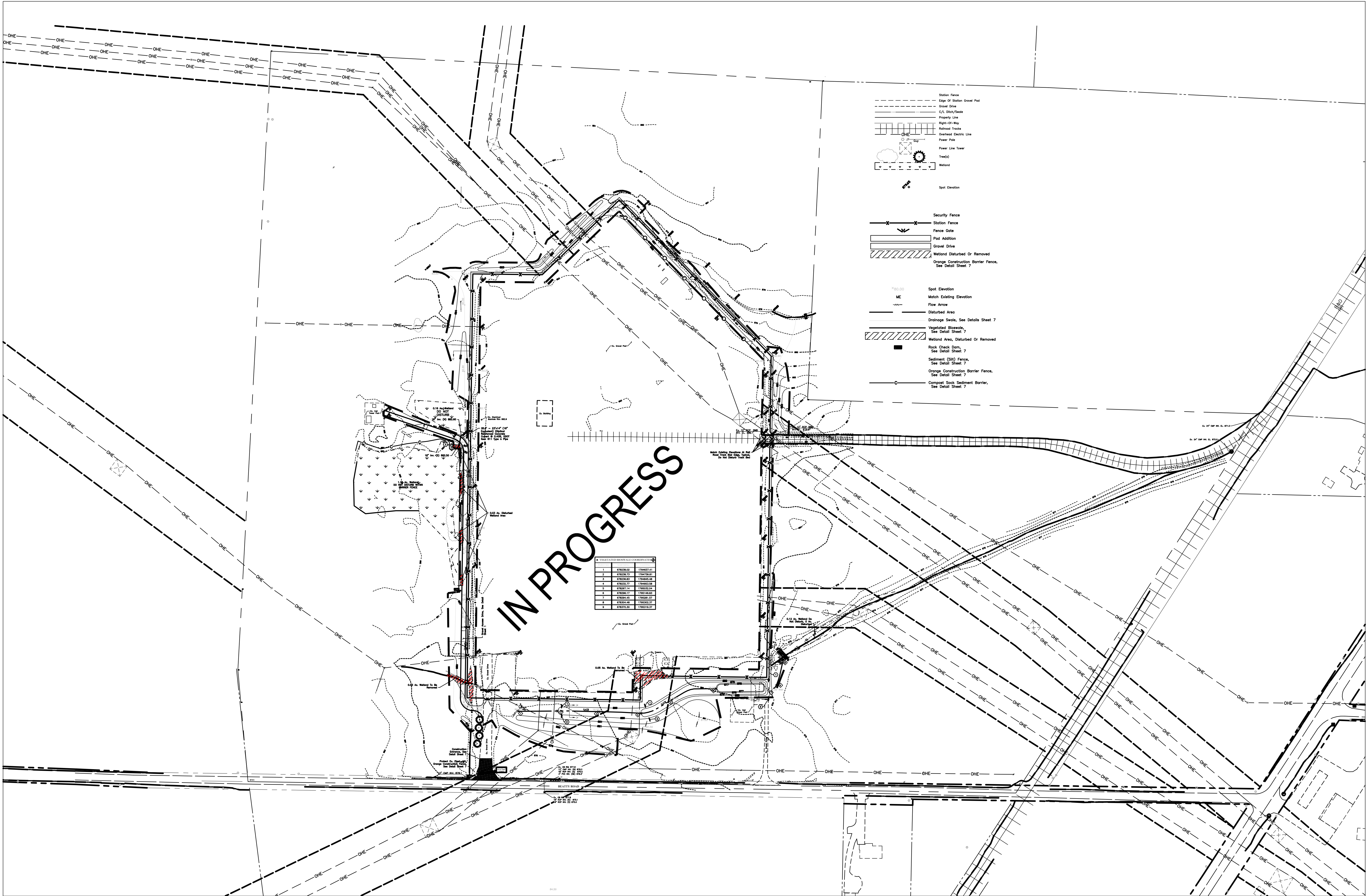
- Study Area
- Proposed Fence Boundary
- Existing Fence Boundary



- Notes
- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 - Data Sources Include: Stantec, AEP, NADS
 - Background: USGS 7.5' Topographic Quadrangles



A.2 FIGURE 2 – PROJECT PLANS



A.3 FIGURE 3 – ENVIRONMENTAL FEATURES

R:\Data\Other_PCS\19370259_Beatly_AEP\03_delineate_and_verify\mxd\Substation_AEP_Figure3_WetlandWaterbody.mxd Revised: 2016-04-28 By: mndchtr



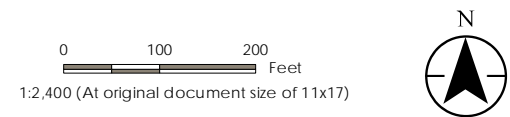
Figure No.
3

Title
**Wetland and Waterbody
Delineation Map**

Client/Project
American Electric Power
Beatly Road Station Drainage Improvements

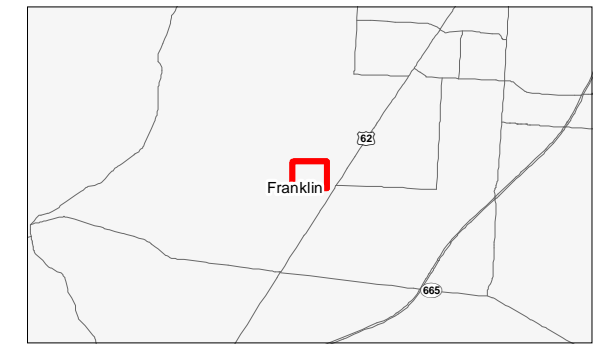
Project Location
Grove City,
Franklin County, Ohio

193704259
Prepared by BT on 2016-02-16
Technical Review by CP on 2016-02-16
Independent Review by DG on 2016-02-25



Legend

- Study Area
- Proposed Fence Boundary
- Existing Fence Boundary
- Proposed Grading Extent
- Culvert
- Storm Drain
- Wetland Determination Sample Point
- Field Delineated Wetland
- Upland Drainage Feature
- Photo Location



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources Include: Stantec, AEP, NADS
- Orthophotography: Microsoft 2012



A.4 FIGURE 4 – HABITAT ASSESSMENT



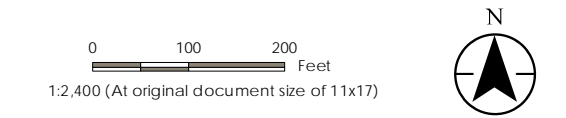
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4

Title
Habitat Assessment Map

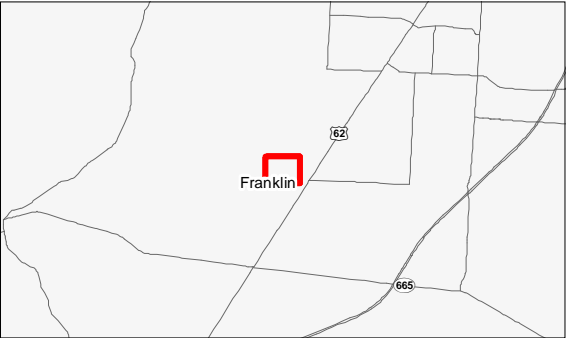
Client/Project
**American Electric Power
Beatty Road Station Drainage Improvements**

Project Location
Grove City,
Franklin County, Ohio

193704259
Prepared by BT on 2016-02-16
Technical Review by CP on 2016-02-16
Independent Review by DG on 2016-03-25



- Legend**
- Study Area
 - Proposed Fence Boundary
 - Existing Fence Boundary
 - Habitat Type**
 - Agriculture
 - Industrial
 - Open Land
 - Scrub/Shrub
 - Field Delineated Wetland
 - Photo Location



- Notes**
- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 - Data Sources Include: Stantec, AEP, NADS
 - Orthophotography: Microsoft 2012



Appendix B Agency Correspondence



Ohio Department of Natural Resources
DIVISION OF WILDLIFE

DNR 5203 (R0915)

NATURAL HERITAGE DATA REQUEST FORM

ODNR Division of Wildlife
Ohio Natural Heritage Program
2045 Morse Rd., Bldg. G-3
Columbus, OH 43229-6693
Phone: 614-265-6818
Email: obdrequest@dnr.state.oh.us

INSTRUCTIONS:

Please complete all the information on both sides of this form, sign (required) and email it to the address given above. Please provide a description of the work to be performed at the project site, and a map detailing your project site boundaries. If you have GIS capabilities or request a GIS response, please also submit a shapefile of your project site (unbuffered). Data requests will be completed within approximately 30 days, usually sooner. There is currently no charge to process requests.

WHAT WE PROVIDE:

As applicable to your project, the Ohio Natural Heritage Database (ONHD) will provide records for state and federally listed plants and animals, high quality plant communities, geologic features, breeding animal concentrations, scenic rivers, protected natural areas (managed areas), and significant unprotected natural areas (conservation sites). A one mile radius around the project site will automatically be searched. Because the ONHD contains sensitive information, it is our policy to provide only the data needed to complete your project.

Please note that this information is provided without comment on potential impacts to the species and their habitats, and therefore does not constitute coordination with ODNR under NEPA, the Fish & Wildlife Coordination Act, the Federal Water Pollution Control Act and other laws. If your project requires ODNR coordination, please submit it for a more extensive environmental review to environmentalreviewrequest@dnr.state.oh.us. Additional information on the environmental review process is available at <http://realestate.ohiodnr.gov/environmental-review>. If you have questions, please contact John Kessler at 614-265-6621 or john.kessler@dnr.state.oh.us. A ONHD search is included as part of the environmental review process.

Date: 2/24/2016 Company name: Stantec Consulting

Name of person response letter should be addressed to:

Mr. ☒ Ms. ☐ Dan Godec

Address: 11687 Lebanon Road

City/State/Zip: Cincinnati/Ohio/45241-2012

Phone: 513-842-8203

E-mail address: daniel.godec@stantec.com

Project Name: Beatty Road Station Fence Installation Project

Project Site Address: 4600 Beatty Road, Grove City, Ohio 43123

Project County: Franklin County

Project City or Township: Grove City, Ohio

Project site is located on the following USGS 7.5 minute topographic quad(s):

West Columbus, Ohio

Project latitude and longitude: Centerpoint - 39.862561°N, -83.118565°W

Description of work to be performed at the project site:

American Electric Power (AEP) is proposing to construct a new fence and access road around the existing Beatty Road Station facility.

How do you want your data reported? (Both formats provide the same data. The manual search is most appropriate for small scale projects or for those without GIS capabilities. With this option we will send you a list of records and a map showing their location. If you request a GIS shapefile, we will send you a shapefile of data layers. You will then need to make your own map and list of data for your report. You must have GIS capabilities. If you choose this option, please email your project shapefile with your request. If you do not make a selection, a manual search will be performed. Please choose only one option below.)

☒ **Printed list and map (manual search)** **OR** ☐ **GIS shapefile (computer search)**

Other than the standard data (see "what we provide" at top of form), additional information you require:

Please provide us with a map showing records of state and federally listed plants and animals, high quality plant communities, geologic features, breeding animal concentrations, scenic rivers, protected natural areas (managed areas), and significant unprotected natural areas (conservation sites) within the project area and a one mile radius around it.

How will the information be used?

The information will be included in a rare, threatened and endangered species habitat assessment report that is being prepared for the project. The information will also be used to assist with demonstrating compliance with the Endangered Species Act, if applicable.

The chief of the Division of Wildlife has determined that the release of the ONHD information you have requested could be detrimental to the conservation of a species or unique natural feature. Pursuant to section 1531.04 of the Ohio Revised Code, this information is not subject to section 149.43 of the Revised Code. By signing below, you certify that the data provided will not be disclosed, published, or distributed beyond the scope of your specific project.

Signature

Daniel J. Goder

Date: 2/24/2016

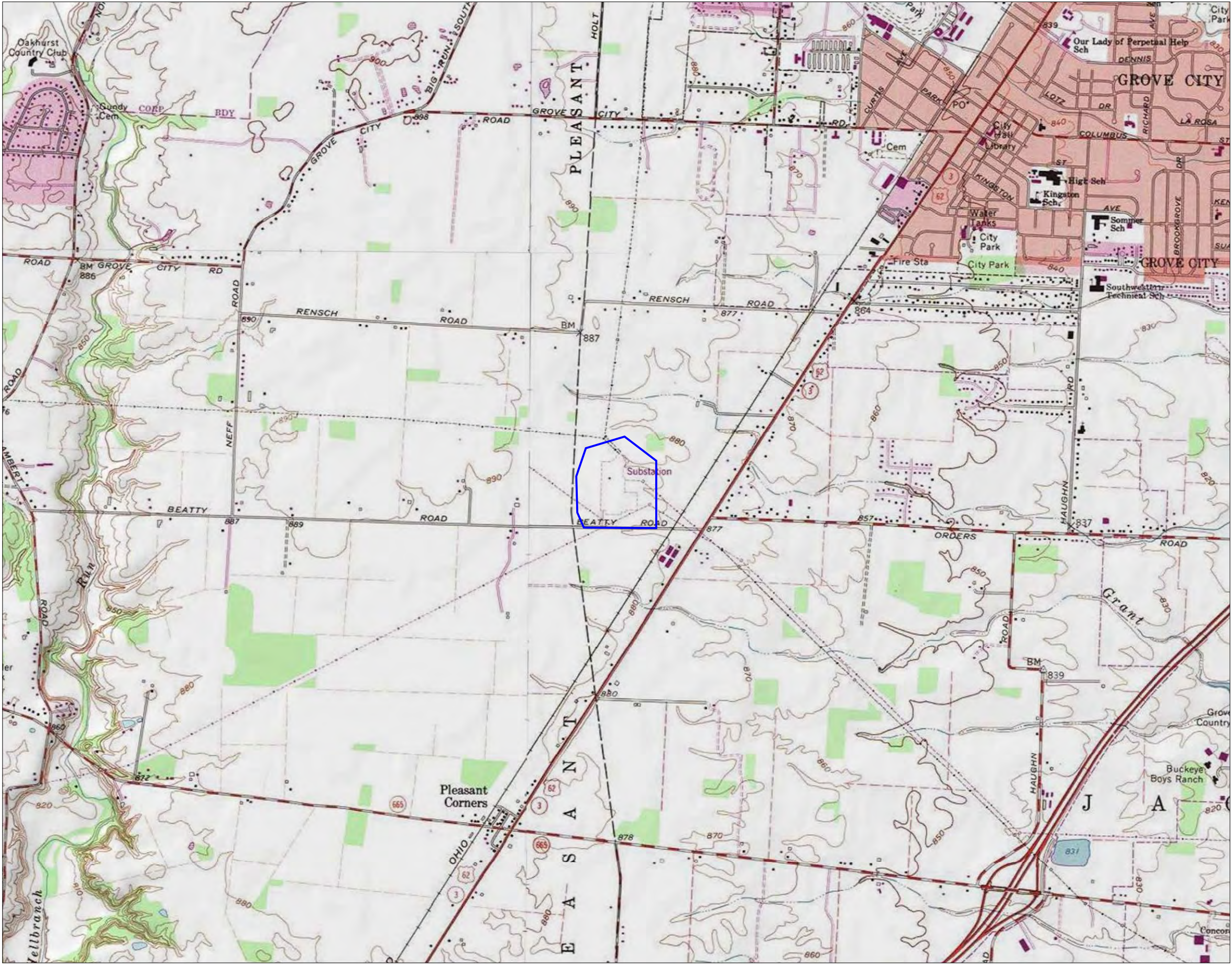
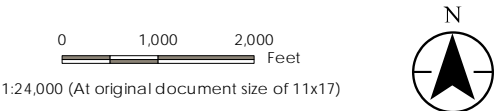


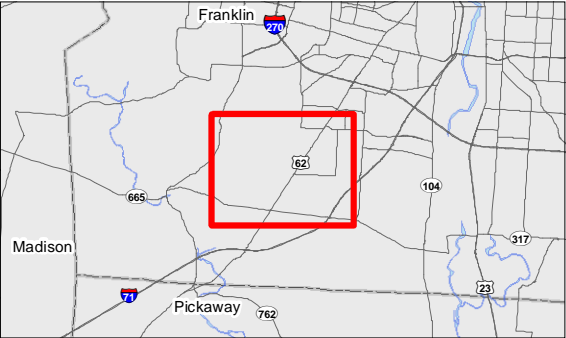
Figure No. 1
Title
Project Location Map

Client/Project
American Electric Power
Beatty Road Station Safety Fence Project

Project Location 193704259
Grove City Prepared by BT on 2016-02-22
Franklin County, Ohio Technical Review by CP on 2016-02-22
Independent Review by DG on 2016-02-24



Legend
Study Area



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, NADS
3. Background: USGS 7.5' Topographic Quadrangles





Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

February 24, 2016

Dan Godec
Stantec Consulting
11687 Lebanon Rd.
Cincinnati, OH 45241

Dear Mr. Godec,

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Beatty Rd. Station Safety Fence Installation project area, including a one mile radius, in Jackson Township, Franklin County, Ohio. We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Debbie Woischke".

Debbie Woischke
Ohio Natural Heritage Database Program



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate

Paul R. Baldrige, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

March 23, 2016

Jesse Binau
Stantec
11687 Lebanon Road
Cincinnati OH 45241-2012

Re: 16-147; Request for Environmental Review, Beatty Road Station

Project: The proposed project involves the construction of a new fence and access road surrounding the Beatty Road Station facility.

Location: The proposed project is located in Grove City, Franklin County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no data at or within a one mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the purple cat's paw (*Epioblasma o. obliquata*), a state endangered and federally endangered mussel, the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the northern riffleshell (*Epioblasma torulosa rangiana*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel species, the rabbitsfoot (*Quadrula cylindrica cylindrica*), a state endangered and federal candidate mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federal endangered mussel, the long solid (*Fusconaia maculata maculata*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the pocketbook (*Lampsilis ovata*), a state endangered mussel, the washboard (*Megalonias nervosa*), a state endangered mussel, the elephant-ear (*Elliptio crassidens crassidens*), a state endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the pondhorn (*Unio merus tetralasmus*), a state threatened mussel, and the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the Scioto madtom (*Noturus trautmani*), a state endangered and federally endangered fish, the popeye shiner (*Notropis ariommus*), a state endangered fish, the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, the shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the tonguetied minnow (*Exoglossum laurae*), a state threatened fish, the paddlefish (*Polyodon spathula*) a state threatened fish, and the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact these or other aquatic species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Sjollema, Angela

From: Carter, Kim (Columbus)
Sent: Tuesday, March 22, 2016 8:50 PM
To: Sjollema, Angela; Kearns, Michelle
Subject: FW: AEP Beatty Road Station Fence Installation Project, Franklin Co. OH

Follow Up Flag: Follow up
Flag Status: Flagged

See below to update Eco report. Still waiting on ODNR.

Kim Carter

Senior Environmental Scientist
Stantec
Phone: (614) 643-4357
Cell: (614) 286-8056
Fax: (614) 486-4387
Kim.Carter@stantec.com



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From: Binau, Jesse
Sent: Tuesday, March 22, 2016 2:26 PM
To: Carter, Kim (Columbus)
Cc: Godec, Daniel
Subject: FW: AEP Beatty Road Station Fence Installation Project, Franklin Co. OH

Jesse Binau

Deputy Environmental Manager
Stantec
11687 Lebanon Road Cincinnati OH 45241-2012
Phone: (513) 619-6457
Cell: 513-312-1912
Jesse.Binau@stantec.com



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 Please consider the environment before printing this email.

From: susan_zimmermann@fws.gov [mailto:susan_zimmermann@fws.gov] On Behalf Of Ohio, FW3
Sent: Tuesday, March 22, 2016 1:13 PM
To: Binau, Jesse
Subject: AEP Beatty Road Station Fence Installation Project, Franklin Co. OH



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



Dear Mr. Binau,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and northern long-eared bats, we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA), between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson", is written over a light blue rectangular background.

Dan Everson

Field Supervisor

Appendix C Representative Photographs

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 1. View of Wetland 1. Photograph taken facing southwest.



Photograph 2. View of Wetland 2. Photograph taken facing northeast.

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 3. View of Wetland 3. Photograph taken facing north.



Photograph 4. View of Wetland 4. Photograph taken facing east.

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 5. View of Wetland 5. Photograph taken facing east.



Photograph 6. Representative upland photo. Photograph taken facing west.

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 7. Representative upland drainage feature. Photograph taken facing north.



Photograph 8. Representative upland drainage feature. Photograph taken facing west.

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 9. Representative view of agricultural habitat within the Project. Photograph taken facing west.



Photograph 10. Representative view of trees within the Project. Photograph taken facing southwest.

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 11. Representative view of Beatty Station within the Project. Photograph taken facing north.



Photograph 12. Representative view of industrial habitat on south side of the Project. Photograph taken facing south.

American Electric Power
Beatty Road Station Drainage Improvements
Franklin County, Ohio



Photograph 13. Representative view of open land habitat within the Project. Photograph taken facing west.



Photograph 14. Representative view of scrub/shrub habitat within the Project. Photograph taken facing northeast.

Appendix D Data Forms

D.1 WETLAND DETERMINATION DATA FORMS

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Energy Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollem		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 1
Landform: Depression	Local Relief: Concave			Sample Point: SP-NNAS-01
Slope (%): 0.5%	Latitude: 39.8626	Longitude: -83.119911	Datum: WGS-84	Community ID: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input checked="" type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Vegetation is regulary mowed.	

HYDROLOGY		
Wetland Hydrology Indicators (Check here if indicators are not present <input type="checkbox"/>):		
<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input checked="" type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D5 - FAC-Neutral Test

Field Observations: Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.) Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.) Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.)		Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks: Area recieves surface drainage from surrounding agricultural field		

SOILS											
Map Unit Name: Crosby silt loam, Southern Ohio till plains, 2 to 6% slopes											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	3	1	10YR	4/2	100	--	--	--	--	silt loam	
3	12	2	10YR	4/2	90	10YR	4/4	10	C	M	
12	20	3	10YR	4/2	80	10YR	4/6	20	C	M	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹	
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)	

Restrictive Layer (If Observed) Type: N/A	Depth: N/A	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:		

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 1**

Sample Point: **01**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	--Scirpus spp.	20	Y	FACW
2.	Echinochloa muricata	40	Y	OBL
3.	Apocynum cannabinum	10	N	FAC
4.	Schedonorus arundinaceus	15	N	FACU
5.	Symphotrichum pilosum	10	N	FACU
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		95		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: Assume Scirpus spp. Are FACW or wetter.

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>40</u>	x 1 =	<u>40</u>
FACW spp.	<u>20</u>	x 2 =	<u>40</u>
FAC spp.	<u>10</u>	x 3 =	<u>30</u>
FACU spp.	<u>25</u>	x 4 =	<u>100</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 95 (A) 210 (B)

Prevalence Index = B/A = 2.211

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☐ No Morphological Adaptations (Explain) *
☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Vegetation is disturbed by mowing.

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollem		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 1
Landform: Rise	Local Relief: Linear			Sample Point: SP-NNAS-02
Slope (%): 2%	Latitude: 39.862771	Longitude: -83.120046	Datum: WGS-84	Community ID: UPL
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Sample point located in tilled agricultural field.	

HYDROLOGY		
Wetland Hydrology Indicators (Check here if indicators are not present <input type="checkbox"/>):		
<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D5 - FAC-Neutral Test

Field Observations:		Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	
Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks: Sample point located in tilled agricultural field.		

SOILS											
Map Unit Name: Crosby silt loam, Southern Ohio till plains, 2 to 6% slopes											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	4	1	10YR 4/2	100		--	--	--	--	--	silt loam
4	20	2	10YR 4/2	90	10YR	4/4	10	C	M		silt loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils¹	
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)	

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A	Depth: N/A	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Sample point located in tilled agricultural field.		

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 1**

Sample Point: **02**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Bromus inermis</i>	10	Y	FACU
2.	<i>Schedonorus arundinaceus</i>	5	Y	FACU
3.	<i>Trifolium repens</i>	5	Y	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		20		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>0</u>	x 2 =	<u>0</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>20</u>	x 4 =	<u>80</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 20 (A) 80 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Rapid Test for Hydrophytic Vegetation |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Dominance Test is > 50% |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Sample point located in tilled agricultural field.

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollema		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 2
Landform: Depression	Local Relief: Concave			Sample Point: SP-NNAS-03
Slope (%): 0.5%	Latitude: 39.86	Longitude: -83.120224	Datum: WGS-84	Community ID: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> <input checked="" type="checkbox"/> A1 - Surface Water <input checked="" type="checkbox"/> A2 - High Water Table <input checked="" type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input checked="" type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D5 - FAC-Neutral Test
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Field Observations:

Surface Water Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: 2 (in.)	Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: 4 (in.)	
Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: surface (in.)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Crosby silt loam, Southern Ohio till plains, 2 to 6% slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	6	1	10YR	4/3	100	--	--	--	--	--	silt loam
6	20	2	10YR	5/2	50	10YR	5/6	20	C	M	silty clay loam
6	20	2	10YR	5/3	30	--	--	--	--	--	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A	Depth: N/A	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Remarks: **Soils are starting to show indications of hydric soil. Area has been previously disturbed by excavation. Most likely was used as borrow pit for gravel road and station. Fill material observed below 6-8 inches.**

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 2**

Sample Point: **03** SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Carex vulpinoidea</i>	20	Y	FACW
2.	<i>Apocynum cannabinum</i>	20	Y	FAC
3.	<i>Epilobium coloratum</i>	10	N	OBL
4.	<i>Typha latifolia</i>	15	Y	OBL
5.	<i>Scirpus app.</i>	5	N	FACW
6.	<i>Solidago gigantea</i>	15	Y	FACW
7.	<i>Sambucus nigra</i>	10	N	FACW
8.	<i>Persicaria pensylvanica</i>	5	N	FACW
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>25</u>	x 1 =	<u>25</u>
FACW spp.	<u>55</u>	x 2 =	<u>110</u>
FAC spp.	<u>20</u>	x 3 =	<u>60</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 100 (A) 195 (B)

Prevalence Index = B/A = 1.950

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollem		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 2
Landform: Rise	Local Relief: Linear			Sample Point: SP-NNAS-04
Slope (%): 1%	Latitude: 39.86176	Longitude: -83.120255	Datum: WGS-84	Community ID: UPL
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:	

HYDROLOGY		
Wetland Hydrology Indicators (Check here if indicators are not present <input checked="" type="checkbox"/>):		
<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D5 - FAC-Neutral Test

Field Observations:		Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Surface Water Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: 0-1 (in.) snow melt	
Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks: Snow melt on surface, causing pooling of surface water, wet muddy soils at surface. This is not used as an indicator.		

SOILS											
Map Unit Name: Crosby silt loam, Southern Ohio till plains, 2 to 6% slopes											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	3	1	10YR	4/2	100	--	--	--	--	--	silt loam
3	16	2	10YR	5/3	50	10YR	4/4	10	C	M	silty clay loam
3	16	2	10YR	5/2	40	--	--	--	--	--	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input checked="" type="checkbox"/>):		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

Restrictive Layer (If Observed) Type: clay/gravel Depth: 16"	Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks:	

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 2**

Sample Point: **04**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Bromus inermis</i>	5	Y	FACU
2.	<i>Schedonorus arundinaceus</i>	15	Y	FACU
3.	<i>Trifolium repens</i>	5	Y	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		25		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>0</u>	x 2 =	<u>0</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>25</u>	x 4 =	<u>100</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 25 (A) 100 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollesma		State: Ohio
Soil Unit: Ko	NW1/WW1 Classification: none			Wetland ID: Wetland 3
Landform: Depression	Local Relief: Concave			Sample Point: SP-NNAS-05
Slope (%): 1%	Latitude: 39.86	Longitude: -83.119896	Datum: WGS-84	Community ID: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input checked="" type="checkbox"/> , Soil <input checked="" type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks: **Vegetation is occaisoinally mowed and soils are most likely affected by agricultural tilling.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input checked="" type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input checked="" type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input checked="" type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D5 - FAC-Neutral Test
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Field Observations:

Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water Table Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: 20 (in.)	
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: Kokomo silty clay loam, 0 to 2 percent slopes

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)	%	Color (Moist)		%	Type	Location	
0	14	1	10YR 3/1	95	10YR 3/4	5	C	PL	loam	
14	20	2	10YR 2/1	98	10YR 3/4	2	C	PL	clay	
--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):

<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input checked="" type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	Indicators for Problematic Soils¹ <input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)
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Restrictive Layer (If Observed)	Type:	Depth:	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:			

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 3**

Sample Point: **05**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Typha latifolia</i>	50	Y	OBL
2.	<i>Epilobium coloratum</i>	20	Y	OBL
3.	<i>Apocynum cannabinum</i>	5	N	FAC
4.	<i>Solidago altissima</i>	15	N	FACU
5.	<i>Carex spp.</i>	5	N	FACW
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		95		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **Assume Carex spp is FACW or wetter.**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	70	x 1 =	70
FACW spp.	5	x 2 =	10
FAC spp.	5	x 3 =	15
FACU spp.	15	x 4 =	60
UPL spp.	0	x 5 =	0

Total **95** (A) **155** (B)

Prevalence Index = B/A = **1.632**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollem		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 3
Landform: Rise	Local Relief: Linear			Sample Point: SP-NNAS-06
Slope (%): 1%	Latitude: 39.860849	Longitude: -83.119924	Datum: WGS-84	Community ID: UPL
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input checked="" type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Vegetation is occaisoinally mowed.	

HYDROLOGY		
Wetland Hydrology Indicators (Check here if indicators are not present <input checked="" type="checkbox"/>):		
<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D5 - FAC-Neutral Test

Field Observations: Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.) Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.) Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.)		Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	N/A
Remarks:	

SOILS	
Map Unit Name: Crosby silt loam, Southern Ohio till plain, 2 to 6 percent slopes	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	3	1	10YR	3/1	100	--	--	--	--	--	loam
3	13	2	10YR	3/1	60	10YR	3/3	5	C	M	loam
3	13	2	10YR	4/1	30	10YR	4/4	5	C	M	loam
13	20	3	10YR	3/1	70	10YR	3/2	2	C	M	clay
13	20	3	10YR	2/1	28	--	--	--	--	--	clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹	
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input checked="" type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)	

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type:	Depth:	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:			

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 3**

Sample Point: **06**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Dipsacus fullonum</i>	25	Y	FACU
2.	<i>Daucus carota</i>	10	N	UPL
3.	<i>Solidago altissima</i>	15	N	FACU
4.	<i>Setaria faberi</i>	10	N	FACU
5.	<i>Epilobium coloratum</i>	5	N	FACW
6.	<i>Oenothera biennis</i>	5	N	FACU
7.	<i>Symphyotrichum pilosum</i>	30	Y	FACU
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>5</u>	x 2 =	<u>10</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>85</u>	x 4 =	<u>340</u>
UPL spp.	<u>10</u>	x 5 =	<u>50</u>

Total 100 (A) 400 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollesma		State: Ohio
Soil Unit: Ko	NW1/WW1 Classification: none			Wetland ID: Wetland 4
Landform: Depression	Local Relief: Concave			Sample Point: SP-NNAS-07
Slope (%): 0.5%	Latitude: 39.861028	Longitude: -83.116765	Datum: WGS-84	Community ID: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:	

HYDROLOGY	
Wetland Hydrology Indicators (Check here if indicators are not present <input type="checkbox"/>):	
<u>Primary:</u> <input checked="" type="checkbox"/> A1 - Surface Water <input checked="" type="checkbox"/> A2 - High Water Table <input checked="" type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)
<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input checked="" type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D5 - FAC-Neutral Test	

Field Observations:		Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Surface Water Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: 0-1 (in.)	
Water Table Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: 5 (in.)	
Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth: surface (in.)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	N/A
Remarks:	

SOILS	
Map Unit Name: Kokomo silt clay loam, 0 to 2 percent slopes	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	20	1	10YR	5/2	85	10YR	5/6	15	C	M	silt loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type:	Depth:	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:			

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 4**

Sample Point: **07**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **5**

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **0**

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Typha latifolia</i>	10	N	OBL
2.	<i>Typha angustifolia</i>	15	N	OBL
3.	<i>Echinochloa muricata</i>	40	Y	OBL
4.	<i>Panicum virgatum</i>	25	Y	FAC
5.	<i>Carex spp.</i>	5	N	FACW
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

Total Cover = **95**

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

Total Cover = **0**

Remarks: **Assume Carex spp. is FACW or wetter.**
Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	65	x 1 =	65
FACW spp.	10	x 2 =	20
FAC spp.	25	x 3 =	75
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0

Total **100** (A) **160** (B)

Prevalence Index = B/A = **1.600**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollesma		State: Ohio
Soil Unit: Ko	NW1/WW1 Classification: none			Wetland ID: Wetland 4
Landform: Rise	Local Relief: Linear			Sample Point: SP-NNAS-08
Slope (%): 1%	Latitude: 39.860945	Longitude: -83.116689	Datum: WGS-84	Community ID: UPL
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

Primary:

- ☒ A1 - Surface Water
- ☒ A2 - High Water Table
- ☒ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ D9 - Gauge or Well Data
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☒ B10 - Drainage Patterns
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☒ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)
Saturation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

SOILS

Map Unit Name: **Kokomo silt clay loam, 0 to 2 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	6	1	10YR	4/2	100	--	--	--	--	--	loam
6	16	2	10YR	4/2	75	10YR	4/6	5	C	M	loam
6	16	2	10YR	4/1	20	--	--	--	--	--	loam
16	20	3	10YR	4/2	75	10YR	5/6	25	C	M	loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):

- ☐ A1 - Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat

- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☒ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils¹

- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type:	Depth:	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Remarks:

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 4**

Sample Point: **08**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	<i>Lonicera maackii</i>	20	Y	UPL
2.	<i>Prunus serotina</i>	10	N	FACU
3.	<i>Cornus amomum</i>	20	Y	FACW
4.	<i>Juniperus virginiana</i>	10	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		60		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Bromus inermis</i>	20	Y	FACU
2.	<i>Solidago altissima</i>	10	N	FACU
3.	<i>Setaria faberi</i>	10	N	FACU
4.	<i>Schedonorus arundinaceus</i>	20	Y	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		60		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **Sample point is edge of harvested agricultural field.**
Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **25%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	20	x 2 =	40
FAC spp.	0	x 3 =	0
FACU spp.	80	x 4 =	320
UPL spp.	20	x 5 =	100

Total **120** (A) **460** (B)

Prevalence Index = B/A = **3.833**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollem		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 5
Landform: Depression	Local Relief: Concave			Sample Point: SP-NNAS-09
Slope (%): 0.5%	Latitude: 39.86095	Longitude: -83.116689	Datum: WGS-84	Community ID: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input checked="" type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input checked="" type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS	
Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Substation created depressional area for POTENTIALLY ISOLATED WETLAND.	

HYDROLOGY	
Wetland Hydrology Indicators (Check here if indicators are not present <input type="checkbox"/>):	
<u>Primary:</u> <input checked="" type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input checked="" type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)
<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D5 - FAC-Neutral Test	

Field Observations: Surface Water Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Depth: 0-1 (in.) Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.) Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: 0 (in.)		Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks: Area formed due to construction of substation		

SOILS											
Map Unit Name: Crosby silt loam, Southern Ohio till plain, 2 to 6 percent slopes											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	3	1	10YR	5/2	90	10YR	4/3	10	C	M	clay loam
3	10	2	10YR	5/2	90	10YR	4/4	10	C	M	clay loam
10	14	3	10YR	5/2	60	10YR	5/4	40	C	M	clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

Restrictive Layer (If Observed) Type: CLAY Depth: 14"	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:	

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 5**

Sample Point: **09**

SP-NNAS-

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Packera glabella</i>	20	Y	FACW
2.	<i>Panicum virgatum</i>	5	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		25		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>20</u>	x 2 =	<u>40</u>
FAC spp.	<u>5</u>	x 3 =	<u>15</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 25 (A) 55 (B)

Prevalence Index = B/A = 2.200

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Beatty Road Station Project		Stantec Project #: 193704259		Date: 02/23/16
Applicant: American Electric Power				County: Franklin
Investigator #1: Nathan Noland		Investigator #2: Angela Sjollem		State: Ohio
Soil Unit: CrB	NW1/WW1 Classification: none			Wetland ID: Wetland 5
Landform: Rise	Local Relief: Linear			Sample Point: SP-NNAS-10
Slope (%): 1%	Latitude: 39.86068	Longitude: -83.118145	Datum: WGS-84	Community ID: UPL
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: n/a
Are Vegetation <input checked="" type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present?		Township: n/a
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Range: n/a Dir: n/a

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks: **vegetation is regularly mowed**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u>	<u>Secondary:</u>
<input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> D9 - Gauge or Well Data <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> C2 - Dry-Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input checked="" type="checkbox"/> D5 - FAC-Neutral Test	

Field Observations:

Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	
Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth: 0 (in.)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Crosby silt loam, Southern Ohio till plain, 2 to 6 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)		%	Type		
0	3	1	10YR	4/2	100	--	--	--	--	--	loam
3	10	2	10YR	5/2	90	10YR	4/3	10	C	M	clay loam
10	14	3	10YR	5/2	75	10YR	5/6	25	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral <input type="checkbox"/> S3 - 5 cm Mucky Peat or Peat	<input type="checkbox"/> S4 - Sandy Gleyed Matrix <input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> F1 - Loamy Muck Mineral <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> A16 - Coast Prairie Redox <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> F12 - Iron-Manganese Masses <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: CLAY	Depth: 14"	Hydric Soil Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
---	-------------------	--

Remarks:

Project/Site: **Beatty Road Station Project**

Wetland ID: **Wetland 5**

Sample Point: **SP-NNA**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Schedonorus arundinaceus</i>	60	Y	FACU
2.	<i>Poa pratensis</i>	30	Y	FAC
3.	<i>Lolium perenne</i>	10	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	30	x 3 =	90
FACU spp.	70	x 4 =	280
UPL spp.	0	x 5 =	0

Total **100** (A) **370** (B)

Prevalence Index = B/A = **3.700**

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Rapid Test for Hydrophytic Vegetation |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Dominance Test is > 50% |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Prevalence Index is ≤ 3.0 * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Morphological Adaptations (Explain) * |
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

D.2 ORAM DATA FORMS

WNNAS-01

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

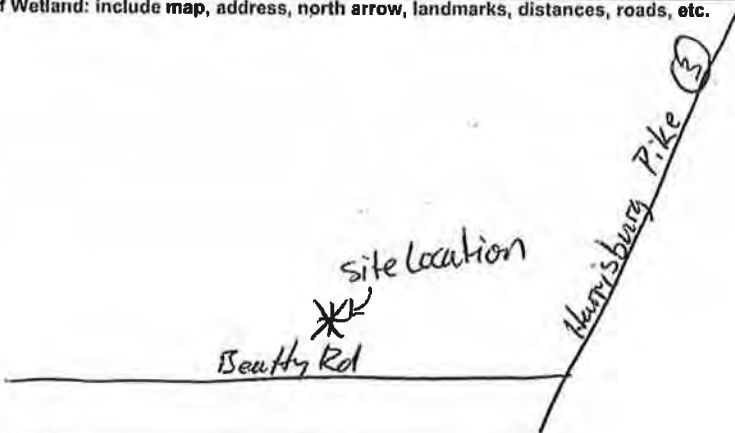
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Nathan Noland		
Date:	2/23/2016		
Affiliation:	Stantec Consulting Services, Inc.		
Address:	11687 Lebanon Rd. Cincinnati, OH 45241		
Phone Number:	513-842-8200		
e-mail address:	nathan.noland@stantec.com		
Name of Wetland:	W-NNAS-01 Wetland 1		
Vegetation Community(ies):	PEM		
HGM Class(es):	Depression		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	39.862629, -83.119911		
USGS Quad Name	West Columbus		
County	Franklin		
Township	N/A		
Section and Subsection	N/A		
Hydrologic Unit Code	05060001		
Site Visit	N/A		
National Wetland Inventory Map	none		
Ohio Wetland Inventory Map	none		
Soil Survey	C+B; Crosby silt loam, Southern Ohio till Plain 2 to 6 % slopes		
Delineation report/map	See Jurisdictional Delineation Report		

Name of Wetland: W-NNAS-01 Wetland 1	
Wetland Size (acres, hectares): 0.16 acre	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
See Jurisdictional Waters Report	
Final score :	17.5
Category:	1

Scoring Boundary Worksheet

W-NNAS-01

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		✓
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Wetland 1

Narrative Rating

W-WNAS-01

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

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8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

W-NNAS-01

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: <u>W-NNAS-01 Wetland 1</u>	Rater(s): <u>N. Nolans</u>	Date: <u>2/23/16</u>
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1	1
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Metric 1. Wetland Area (size).

- max 6 pts. subtotal
- Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (8 pts)
 - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
 - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
 - ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - ☐ <0.1 acres (0.04ha) (0 pts)

1	2
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Metric 2. Upland buffers and surrounding land use.

- max 14 pts. subtotal
- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
 - ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

6.5	8.5
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Metric 3. Hydrology.

- max 30 pts. subtotal
- 3a. Sources of Water. Score all that apply.
- ☐ High pH groundwater (5)
 - ☐ Other groundwater (3)
 - ☒ Precipitation (1)
 - ☐ Seasonal/intermittent surface water (3)
 - ☐ Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- ☐ 100 year floodplain (1)
 - ☒ Between stream/lake and other human use (1)
 - ☐ Part of wetland/upland (e.g. forest), complex (1)
 - ☐ Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3)
 - ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
 - ☒ <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- ☐ Semi- to permanently inundated/saturated (4)
 - ☐ Regularly inundated/saturated (3)
 - ☒ Seasonally inundated (2)
 - ☒ Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- | | | |
|--|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> None or none apparent (12) <input type="checkbox"/> Recovered (7) <input checked="" type="checkbox"/> Recovering (3) <input checked="" type="checkbox"/> Recent or no recovery (1) | <p>Check all disturbances observed</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> ditch <input checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <ul style="list-style-type: none"> <input type="checkbox"/> point source (nonstormwater) <input checked="" type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |
|--|---|---|

5	13.5
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Metric 4. Habitat Alteration and Development.

- max 20 pts. subtotal
- 4a. Substrate disturbance. Score one or double check and average.
- ☐ None or none apparent (4)
 - ☐ Recovered (3)
 - ☒ Recovering (2)
 - ☐ Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7)
 - ☐ Very good (6)
 - ☐ Good (5)
 - ☐ Moderately good (4)
 - ☐ Fair (3)
 - ☐ Poor to fair (2)
 - ☒ Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- | | | |
|---|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> None or none apparent (9) <input type="checkbox"/> Recovered (6) <input checked="" type="checkbox"/> Recovering (3) <input checked="" type="checkbox"/> Recent or no recovery (1) | <p>Check all disturbances observed</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input checked="" type="checkbox"/> nutrient enrichment |
|---|--|--|

13.5

subtotal this page

Site: <u>W-NNAS-01 Wetland 1</u>	Rater(s): <u>N. Noland</u>	Date: <u>2/23/16</u>
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13.5

subtotal this page

0

13.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4

17.5

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

17.5

GRAND TOTAL(max 100 pts)

ORAM Summary Worksheet Wetland 1

W-NNAS-01

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
Quantitative Rating	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	6.5	
	Metric 4. Habitat	5	
Metric 5. Special Wetland Communities	0		
Metric 6. Plant communities, interspersion, microtopography	4		
TOTAL SCORE	17.5	Category based on score breakpoints 1	

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

W-NNAS-01

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

W-NNAS-02

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

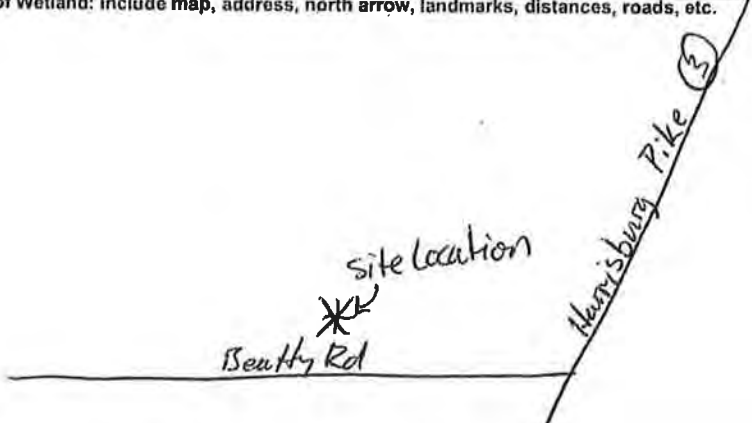
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Nathan Noland		
Date:	2/23/2016		
Affiliation:	Stantec Consulting Services, Inc.		
Address:	11687 Lebanon Rd. Cincinnati, OH 45241		
Phone Number:	513-842-8200		
e-mail address:	nathan.noland@stantec.com		
Name of Wetland:	W-NNAS-02	Wetland 2	
Vegetation Community(ies):	PEM		
HGM Class(es):	Depression		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
			
Lat/Long or UTM Coordinate	39.861984, -83.120224		
USGS Quad Name	West Columbus		
County	Franklin		
Township	N/A		
Section and Subsection	N/A		
Hydrologic Unit Code	05060001		
Site Visit	N/A		
National Wetland Inventory Map	none		
Ohio Wetland Inventory Map	none		
Soil Survey	CRS; Crosby silt loam, Southern Ohio till plain, 2-6% slopes		
Delineation report/map	See Jurisdictional Delineation Report		

Name of Wetland: W-NNAS-02 Wetland 2	
Wetland Size (acres, hectares): 1.15 ac	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
<p>See Jurisdictional Waters Report</p>	
Final score : 25	Category: 1

Scoring Boundary Worksheet

W-NAAS-02

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		✓
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

W-NNAS-02

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: <u>W-NNAS-02 Wetland 2</u>	Rater(s): <u>N. Noland</u>	Date: <u>2/23/16</u>
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2

2

Metric 1. Wetland Area (size).

max 6 pts subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

2

1

3

Metric 2. Upland buffers and surrounding land use.

max 14 pts subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

0

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

1

9

12

Metric 3. Hydrology.

max 30 pts subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

1

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.9in) (3)
- ☒ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

1

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

3

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input checked="" type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input checked="" type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

7

19

Metric 4. Habitat Alteration and Development.

max 20 pts subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

2

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

2

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input checked="" type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

19

subtotal this page

Site: <u>W-NNAS-02 Wetland 2</u>	Rater(s): <u>N. Noland</u>	Date: <u>2/23/16</u>
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19

subtotal this page

0	19
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Praires (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6	25
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max 20 pts

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

25

GRAND TOTAL(max 100 pts)

ORAM Summary Worksheet

Wetland 2

W-MVAS-02

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	6	
	TOTAL SCORE	25	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

W-NNAS-01

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> NO If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc. and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM. A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

W-NNAS-03

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

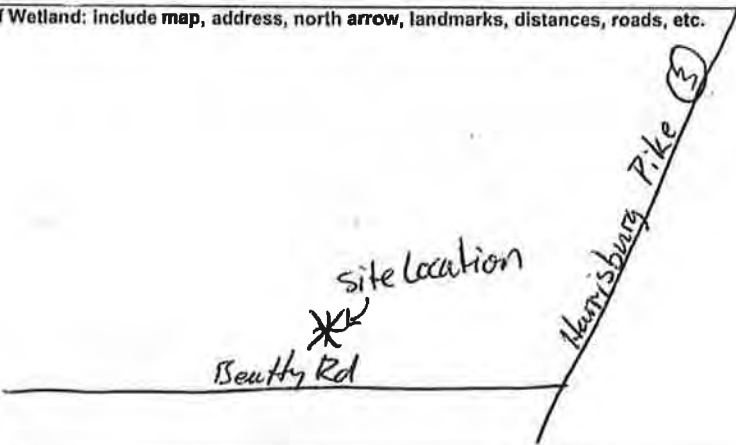
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Nathan Noland		
Date:	2/23/2016		
Affiliation:	Stantec Consulting Services, Inc.		
Address:	11687 Lebanon Rd. Cincinnati, OH 45241		
Phone Number:	513-842-8200		
e-mail address:	nathan.noland@stantec.com		
Name of Wetland:	W-NNAS-03	Wetland 3	
Vegetation Community(ies):	PEM		
HGM Class(es):	Depression		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
			
Lat/Long or UTM Coordinate	39.860742 -83.119896		
USGS Quad Name	West Columbus		
County	Franklin		
Township	N/A		
Section and Subsection	N/A		
Hydrologic Unit Code	05060001		
Site Visit	N/A		
National Wetland Inventory Map	none		
Ohio Wetland Inventory Map	none		
Soil Survey	Ko; Kokomo silty clay loam, 0-2% slopes		
Delineation report/map	See Jurisdictional Delineation Report		

Name of Wetland: <u>W-NNAS-03 Wetland 3</u>	
Wetland Size (acres, hectares): <u>0.03ac</u>	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
See Jurisdictional Waters Report	
Final score : <u>1a</u>	Category: <u>1</u>

Scoring Boundary Worksheet

W-NNAS-03

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		✓
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

Wetland 3

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INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

Wetland 3

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8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Wetland 3

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Table 1. Characteristic plant species.

Invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glauca</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha x glauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serotina</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: W-NNAS-03 Wetland 3 Rater(s): A. Spollena Date: 2/23/16

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

2	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	10
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☒ tile
- ☐ dike
- ☐ weir
- ☒ stormwater input

- ☒ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	17
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☒ farming
- ☐ nutrient enrichment

17
subtotal this page

Site: W-NNAS-03 Wetland 3 Rater(s): A. Spillena Date: 2/23/16

17

subtotal this page

0 17

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☒ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 19

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19 GRAND TOTAL(max 100 pts)

ORAM Summary Worksheet

Wetland 3

W-NNAS-03

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	2	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	2	
	TOTAL SCORE	19	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

W-NNAS-03

Choices	Circle one	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/>	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc. and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate</i> OR <i>superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category			
Choose one	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3

End of Ohio Rapid Assessment Method for Wetlands.

W-ANAS-04

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

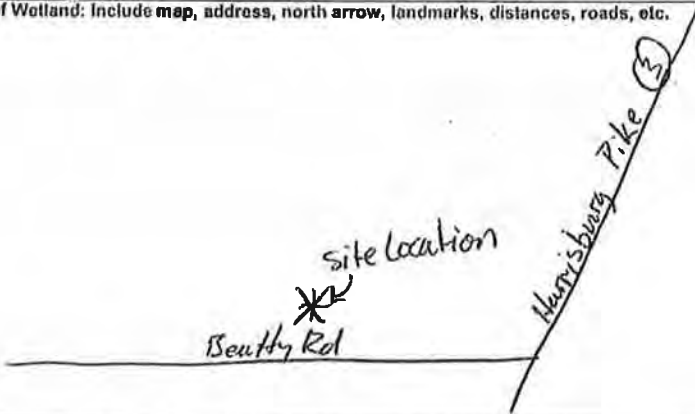
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Nathan Noland
Date:	2/23/2016
Affiliation:	Stantec Consulting Services, Inc.
Address:	11687 Lebanon Rd. Cincinnati, OH 45241
Phone Number:	513-842-8200
e-mail address:	nathan.noland@stantec.com
Name of Wetland:	W-NNAS-04 Wetland 4
Vegetation Community(ies):	PEM
HGM Class(es):	Depression
Location of Wetland: Include map, address, north arrow, landmarks, distances, roads, etc.	
	
Lat/Long or UTM Coordinate	39.861028, -83.116765
USGS Quad Name	West Columbus
County	Franklin
Township	N/A
Section and Subsection	N/A
Hydrologic Unit Code	05060001
Site Visit	N/A
National Wetland Inventory Map	none
Ohio Wetland Inventory Map	none
Soil Survey	Ko; Kokomo silty clay loam, 0 to 2% slopes
Delineation report/map	See Jurisdictional Delineation Report

Name of Wetland: W-NNAS-04 Wetland 4	
Wetland Size (acres, hectares): 0.12 ac	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
See Jurisdictional Waters Report	
Final score :	27.5
Category:	2

Wetland 4

Scoring Boundary Worksheet

W-NWAS-04

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		✓
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Wetland 4

Narrative Rating

W-UNAS04

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

Wetland 4

W-NAS-04

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Wetland 4

W-NNAS-04

Table 1. Characteristic plant species.

Invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glauca</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sierilis</i>	<i>Carex oligosperma</i>	<i>Cnidium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha x glauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthis mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnonthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: W-NNAS-04 Wetland 4 Rater(s): N. Noland Date: 2/23/16

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
 - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
 - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
 - ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - ☐ <0.1 acres (0.04ha) (0 pts)

1	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
 - ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11	13
max 30 pts.	subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
- ☐ High pH groundwater (5)
 - ☐ Other groundwater (3)
 - ☒ Precipitation (1)
 - ☐ Seasonal/Intermittent surface water (3)
 - ☐ Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- ☒ 100 year floodplain (1)
 - ☒ Between stream/lake and other human use (1)
 - ☐ Part of wetland/upland (e.g. forest), complex (1)
 - ☐ Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3)
 - ☒ 0.4 to 0.7m (15.7 to 27.6in) (2)
 - ☐ <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- ☐ Semi- to permanently inundated/saturated (4)
 - ☒ Regularly inundated/saturated (3)
 - ☐ Seasonally inundated (2)
 - ☐ Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- ☐ None or none apparent (12)
 - ☒ Recovered (7)
 - ☒ Recovering (3)
 - ☐ Recent or no recovery (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input checked="" type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input checked="" type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input checked="" type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other

8.5	21.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double check and average.
- ☐ None or none apparent (4)
 - ☒ Recovered (3)
 - ☒ Recovering (2)
 - ☐ Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7)
 - ☐ Very good (6)
 - ☐ Good (5)
 - ☒ Moderately good (4)
 - ☐ Fair (3)
 - ☐ Poor to fair (2)
 - ☐ Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- ☐ None or none apparent (9)
 - ☐ Recovered (8)
 - ☒ Recovering (3)
 - ☐ Recent or no recovery (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input checked="" type="checkbox"/> herbaceous/aquatic bed removal
<input checked="" type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> selective cutting	<input checked="" type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input checked="" type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input checked="" type="checkbox"/> nutrient enrichment

21.5
subtotal this page

Site: <u>W-NNAS-04</u> Wetland 4	Rater(s): <u>N. Noland</u>	Date: <u>2/23/16</u>
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21.5
subtotal first page

0	21.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6	27.5
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6ln)
- ☐ Standing dead >25cm (10ln) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

27.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 4

W-NNAS-04

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	8.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	6	
	TOTAL SCORE	27.5	Category based on score breakpoints 1 or 2 gray zone

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

W-PNAS-04

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc. and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

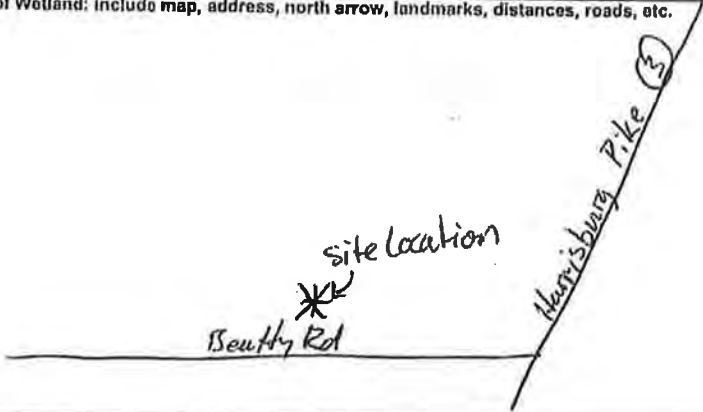
The investigator is ***STRONGLY URGED*** to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is ***VERY IMPORTANT*** to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name:	Nathan Noland		
Date:	2/23/2016		
Affiliation:	Stantec Consulting Services, Inc.		
Address:	11687 Lebanon Rd. Cincinnati, OH 45241		
Phone Number:	513-842-8200		
e-mail address:	nathan.noland@stantec.com		
Name of Wetland:	W-NNAS-05 Wetland 5		
Vegetation Community(ies):	PEM		
HGM Class(es):	Depression		
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	38.860758, -83.118209		
USGS Quad Name	West Columbus		
County	Franklin		
Township	N/A		
Section and Subsection	N/A		
Hydrologic Unit Code	05060001		
Site Visit	N/A		
National Wetland Inventory Map	none		
Ohio Wetland Inventory Map	none		
Soil Survey	CrB; Crosby silt loam, Southern Ohio till plain 2-6% slopes		
Delineation report/map	See Jurisdictional Delineation Report		

Name of Wetland: W-NNAS-05 Wetland 5	
Wetland Size (acres, hectares): 0.05 ac	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
<p>See Jurisdictional Waters Report</p>	
Final score: 16.5	Category: 1

Scoring Boundary Worksheet

Wetland 5

W-NA-05

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	✓	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	✓	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	✓	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	✓	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		✓
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	✓	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

W-NNAS-05

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnapp>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

Wetland 5

W-NNAS-01

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the graminaceous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Wetland 5

W-NNAS-05

Table 1. Characteristic plant species.

Invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Caecilia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha x glauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus micronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serotina</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glauca</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland 5

ORAM v. 5.0 Field Form Quantitative Rating

W-UNAS-05

Site: W-UNAS-05 Wetland 5 Rater(s): W. Noland Date: 2/23/16

0	0
max 6 pts	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

3	3
max 14 pts	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7	10
max 30 pts	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☐ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.8in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

point source (nonstormwater)

- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☒ other

For. lity construction

3.5	13.5
max 20 pts	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☒ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

13.5
subtotal this page

last revised 1 February 2001 jjm

Site: W-NNAS-05 Wetland 5 Rater(s): N. Nolan Date: 2/23/16

13.5
subtotal first page

0 13.5
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 16.5
max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

16.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet Wetland 5

W-NNAS-05

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <u>NO</u>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <u>NO</u>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <u>NO</u>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <u>NO</u>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <u>NO</u>	If yes, Category 1.
	Question 6. Bogs	YES <u>NO</u>	If yes, Category 3.
	Question 7. Fens	YES <u>NO</u>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <u>NO</u>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands -- Unrestricted with native plants	YES <u>NO</u>	If yes, Category 3
Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.	
Question 10. Oak Openings	YES <u>NO</u>	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <u>NO</u>	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, Interspersion, microtopography	3	
	TOTAL SCORE	16.5	Category based on score breakpoints 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland 5

W-NNAS-05

Choices	Circle one	NO	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score <i>less than</i> the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score <i>greater than</i> the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc. and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

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in

Case No(s). 16-0549-EL-BNR

Summary: Notice - Request for Expedited Treatment: In the Matter of the Construction Notice for the Beatty Road Station Drainage Improvements electronically filed by Mr. Hector Garcia on behalf of AEP Ohio Transmission Company