Attachment F

Agency Coordination Letters

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
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Phone: (614) 265-6649
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September 5, 2017

Cori Jansing
Cardno
11121 Canal Road
Cincinnati, Ohio 45241

Re: 17-433; 3885-138kV East Provident Loop Project, Threatened and Endangered Species Consultation

Project: The proposed project involves the construction approximately 0.27 miles of new transmission line in association with the construction of the new East Provident Substation.

Location: The proposed project is in West Chester Township, Butler 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 records 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 rayed bean (*Villosa fabalis*), a state endangered and federally endangered 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, this project is not likely to impact these species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet fields and meadows. Due to the location, the type of work proposed, and the type of habitat present at the project site and within the vicinity of the project area, this project is not likely to impact this species.

The project is within the range of the cave salamander (*Eurycea lucifuga*), a state endangered species. Due to the location, the type of work proposed, and the type of habitat present at the project site and within the vicinity of the project area, this project is not likely to impact this 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.

The project is within the range of the Sloan's crayfish (*Orconectes sloanii*), a state threatened species. Due to the location, and that there is no in-water work proposed, this project is not likely to impact this species.

The project is within the range of the Kramer's cave beetle (*Pseudanophthalmus krameri*), a state endangered species, and the Ohio cave beetle (*Pseudanophthalmus ohioensis*), a state endangered species. These species are found only in caves. The Ohio Cave Protection Law, Section 1517.21

of the Ohio Revised Code, protects caves from impacts, in turn, protecting the habitat of these species. Therefore, the project is not likely to have an impact on these 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.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

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

From:	susan_zimmermann@fws.gov on behalf of Ohio, FW3
To:	Cori Jansing
Cc:	nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject:	Duke Energy, 3885 - 138kV East Provident Loop Project, West Chester Twp., Butler Co.
Date:	Wednesday, August 16, 2017 11:55:32 AM
Attachments:	Capture of Dan.PNG

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

TAILS# 03E15000-2017-TA-1692

Dear Ms. Jansing,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags =3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

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 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.

Due to the project type, size, and location, we do not anticipate adverse effects to any other 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 Service should be initiated to assess any potential impacts.

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 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,

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

Attachment G

Regulated Waters Delineation Report

Regulated Waters Delineation Report

3885 - 138kV East Provident Loop- Newbuild

Butler County, Ohio

August 11, 2017

Cardno
Shaping the Future

Document Information

Prepared for	Duke Energy
Client Contact	Amanda Sheehe
Project Name	3885 - 138kV East Provident Loop - Newbuild
Project Number	Cardno #J156720M58
Project Manager	Cori Jansing (Cardno)
Date	August 11, 2017

Prepared for:

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Prepared by:

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11121 Canal Road, Cincinnati, Ohio 45241

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Appendices

Tables

Figures

Acronyms

APA Administrative Procedure Act

BF Bank Full

CFR Code of Federal Regulations

CWA Clean Water Act

DBH Diameter at Breast Height

DP Data Point

EPA U.S. Environmental Protection Agency

ETR Endangered, Threatened, and Rare

FAC Facultative Plant

FACU Facultative Upland Plant

FACW Facultative Wetland Plant

FEMA Federal Emergency Management Agency

FIRM Insurance Rate Map

GIS Geographical Information SystemAcronyms, continued

MS4	Municipal Separate Storm Water Sewer Systems
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NWP	Nationwide Permit
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plant
OEPA	Ohio Environmental Protection Agency
ODNR	Ohio Department of Natural Resources
OHWM	Ordinary High Water Mark
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PLSS	Public Land Survey Section
PSS	Palustrine Shrub Scrub Wetland
RGP	Regional General Permit
SNE	Significant Nexus
SWANCC	Solid Waste Agency of Northern Cook County
TNW	Traditional Navigable Water
TOB	Top of Bank
UPL	Upland Plant
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WOTUS	Waters of the United States
WQC	Water Quality Certification

1 Introduction

Cardno was contracted to perform a water resource inventory, including wetlands and streams, which are located at the 3885 - 138kV East Provident Loop - Newbuild Study Area in Butler County, Ohio on July 5 and 12, 2017. Table 1-1 summarizes the location of the Study Area based on the Public Land Survey Section (PLSS) data.

Table 1-1 PLSS within the 3885 - East Provident Loop Study Area

Township	Range	Section
2N	2E	2

The total size of the Study Area was approximately 6.07 acres. The Study Area primarily consisted of commercial development, secondary growth deciduous forest, and scrub-shrub/maintained right-of-way (ROW).

This report identifies the jurisdictional status of the Study Area based on Cardno's best professional understanding and interpretation of the *Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory, 1987) and U.S. Army Corps of Engineers' (USACE) guidance documents and regulations. Jurisdictional determinations for other "waters of the U.S." were made based on definitions and guidance found in 33 CFR 328.3, USACE Regulatory Guidance Letters, and the wetland delineation manual. The USACE administers Section 404 of the Clean Water Act (CWA), which regulates the discharge of fill or dredged material into all "waters of the U.S.," and is the regulatory authority that must make the final determination as to the jurisdictional status of the Study Area.

2 Regulatory Definitions

2.1 Waters of the United States

"Waters of the U.S." are within the jurisdiction of the USACE under the CWA. "Waters of the U.S." is a broad term, which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the ordinary high water mark (OHWM). Also included are manmade water bodies such as quarries and ponds, which are no longer actively being mined or constructed and are connected to other "waters". Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites which involve more rigorous regulatory permitting requirements. A specific, detailed definition of "waters of the U.S." can be found in the Federal Register (33 CFR 328.3).

On January 9, 2001, the U.S. Supreme Court issued a decision, Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers (No. 99-1178). The decision reduced the regulation of isolated wetlands under Section 404 of the CWA, which assigned the USACE authority to issue permits for the discharge of dredge or fill material into "waters of the U.S.". Prior to the SWANCC decision, the USACE had adopted a regulatory definition of "waters of the U.S." that afforded federal protection for almost all of the nation's wetlands. The Supreme Court

decision interpreted that the USACE's jurisdiction was restricted to navigable waters, their tributaries, and wetlands that are adjacent to these navigable waterways and tributaries. The decision leaves the majority of "isolated" wetlands unregulated by the CWA. Therefore, most wetlands that are not adjacent to, or contiguous with, any other "waters of the U.S." via a surface drain such as a swale, ditch, or stream are considered isolated and thus no longer jurisdictional by the USACE.

On June 19, 2006, the U.S. Supreme Court issued decisions in regards to John A. Rapanos v. United States (No. 04-1034) and June Carabell v. United States (04-1384), et al. The plurality decision created two 'tests' for determining CWA jurisdiction: the permanent flow of water test (set out by Justice Scalia) and the "significant nexus" test (set out by Justice Kennedy). On June 5, 2007 the USACE and U.S. Environmental Protection Agency (EPA) issued joint guidance on how to interpret and apply the Court's ruling. According to this guidance, the USACE will assert jurisdiction over traditionally navigable waters, adjacent wetlands, and non-navigable tributaries of traditionally navigable waters that have "relatively permanent" flow, and wetlands that border these waters, regardless of whether or not they are separated by roads, berms, and similar barriers. In addition, the USACE will use a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the traditionally navigable water based on consideration of several factors.

In January 2015 an EPA sponsored publication, *Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence* (EPA, 2015), emphasized how streams, nontidal wetlands, and open waters in and outside of riparian areas and floodplains effect downstream waters such as rivers, lakes, estuaries, and oceans.

On May 27, 2015 the EPA released a statement that a new Clean Water Rule typically referred to as, "The Waters of the United States (WOTUS) Rule" was finalized and that it would "not create any new permitting requirements and maintains all previous exemptions and exclusions" (epa.gov). The rule would only protect waters that have historically been covered by the Clean Water Act. The intent was to clearly define:

- Jurisdictional limits of tributaries of navigable waterways;
- Set boundaries on covering nearby waters;
- Identify specific national water treasures by name (prairie potholes, etc.);
- Clearly define when a ditch is jurisdictional, and when it is not;
- Maintain status that waters within Municipal Separate Storm Water Sewer Systems (MS4) are not jurisdictional; and
- Reduce the use of case-specific analysis of waters.

Also on May 27, 2015 a publication, *Technical Support Document for the Clean Water Rule: Definition of Waters of the United States* (EPA, 2105), was released discussing in detail why the significant nexus (SNE) between one water and another is important. It specifically ties distances to the various types of waters mentioned within the Code of Federal Regulations [33 CFR 328.3(a)(1) through (a)(8)]. For example, the document states "Waters located within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas and waters located more than 1,500 feet and less than 4,000 feet from the lateral limit of an (a)(1) or (a)(3) water may still be determined to have a significant nexus on a case-specific basis under paragraph (a)(8) of the rule and, thus, be a "water of the United States" (EPA 2015).

On June 29, 2015 the new Clean Water Rule was entered into the Federal Register (40 CFR Parts 110, 112, 116, et al. Clean Water Rule: Definition of ‘‘waters of the United States’’; Final Rule). This report will refer to this rule as “June 29, 2015 WOTUS Rule”. This rule includes exact distances mentioned in the May 27, 2015 Technical Support Document as it relates to adjacent waters, including the following:

- Waters within 100 ft. of jurisdictional waters;
- Waters within the 100-year floodplain to a maximum of 1,500 feet from the ordinary high water mark (OHWM);
- Waters within the 100-year floodplain with a SNE to the Traditional Navigable Water (TNW); and
- Waters with a SNE within 4,000 ft. of jurisdictional waters.

On October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit (Court) issued a nationwide stay against the enforcement of the June 29, 2015 WOTUS Rule. The Court stated, “…we conclude that…Justice Kennedy’s opinion in *Rapanos* represents the best instruction on the permissible parameters of “waters of the United States” as used in the Clean Water Act, it is far from clear that the new Rule’s distance limitations are harmonious with the instruction.

Moreover, the Court stated that the rulemaking process by which the distance limitations were adopted is facially suspect. Petitioners contend the proposed rule that was published, on which interested persons were invited to comment, did not include any proposed distance limitations in its use of terms like “adjacent waters” and “significant nexus.” Consequently, petitioners contend, the Final Rule cannot be considered a “logical outgrowth” of the rule proposed, as required to satisfy the notice-and-comment requirements of the APA, 5 U.S.C. § 553. As a further consequence of this defect, petitioners contend, the record compiled by respondents is devoid of specific scientific support for the distance limitations that were included in the Final Rule. They contend the Rule is therefore not the product of reasoned decision-making and is vulnerable to attack as impermissibly “arbitrary or capricious” under the APA, 5 U.S.C. § 706(2).”

Until further notice, the June 29, 2015 WOTUS Rule is not in effect. Furthermore, this report does not attempt to include a professional opinion as it relates to the June 29, 2015 WOTUS Rule.

2.2 Waters of the State

“Waters of the State” are within the jurisdiction of the Ohio Environmental Protection Agency (OEPA). They are generally defined as surface and underground water bodies, which extend through or exist wholly in the State of Ohio, which includes, but is not limited to, streams and both isolated and non-isolated wetlands. Private ponds, or any pond, reservoir, or facility built for reduction of pollutants prior to discharge are not included in this definition. In addition to “waters of the U.S.”, OEPA also regulates and issues permits for isolated wetland impacts.

OEPA relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

2.3 Wetlands

Wetlands are a category of “waters of the U.S.” for which a specific identification methodology has been developed. As described in detail in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), wetland boundaries are delineated using three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. In addition to the criteria defined in the 1987 Manual, the procedures described in the *Regional Supplement to the Corps of Engineers*

Wetland Delineation Manual: Midwest Region (Environmental Laboratory, 2010) were used to evaluate the Study Area for the presence of wetlands.

2.3.1 Hydrophytic Vegetation

On June 1, 2012, the National Wetland Plant List (NWPL), formerly called the National List of Plant Species that Occur in Wetlands (Reed 1988), went into effect after being released by the U.S. Army Corps of Engineers (USACE) as part of an interagency effort with the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (Lichvar and Kartesz, 2009). The NWPL, along with the information implied by its wetland plant species status ratings, provides general botanical information about wetland plants and is used extensively in wetland delineation, restoration, and mitigation efforts. The NWPL consists of a comprehensive list of wetland plant species that occur within the United States along with their respective wetland indicator statuses by region. An indicator status reflects the likelihood that a particular plant species occurs in a wetland or upland (Lichvar et al. 2012). Definitions of the five indicator categories are presented below.

> **OBL** (Obligate Wetland Plants): almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.
>
> **FACW** (Facultative Wetland Plants): usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
>
> **FAC** (Facultative Plants): occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
>
> **FACU** (Facultative Upland Plants): usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
>
> **UPL** (Upland Plants): almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

According to the USACE's Midwest Regional Supplement, plants that are rated as FAC, FACW, or OBL are classified as wetland plant species. The percentage of dominant wetland species in each of the four vegetation strata (tree, shrub/sapling, herbaceous, and woody vine) in the sample area determines the hydrophytic (wetland) status of the plant community. Dominant species are chosen independently from each stratum of the community. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total.

For the purposes of determining dominant plant species, the four vegetation strata are defined. Trees consist of woody species 3 inches or greater in diameter at breast height (DBH). Shrubs and saplings are woody species that are over 1 meter in height and less than 3 inches DBH. Herbaceous species consist of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants less than 1 meter tall. Woody vines consist of vine species greater than 1 meter in height, such as wild grapes.

2.3.2 Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry, which are used to differentiate hydric from non-hydric soils.

In this report, soil colors are described using the Munsell notation system. This method of describing soil color consists of separate notations for hue, value, and chroma that are combined in that order to form the color designation. The hue notation of a color indicates its relation to red, yellow, green, blue, and purple; the value notation indicates its lightness, and the chroma notation indicates its strength or departure from a neutral of the same lightness.

The symbol for hue consists of a number from 1 to 10, followed by the letter abbreviation of the color. Within each letter range, the hue becomes more yellow and less red as the numbers increase. The notation for value consists of numbers from 0 for absolute black, to 10 for absolute white. The notation for chroma consists of numbers beginning with /0 for neutral grays and increasing at equal intervals. A soil described as 10YR 3/1 soil is more gray than a soil designated 10YR 3/6.

2.3.3 Wetland Hydrology

Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface (within the root zone) during the growing season. Wetland hydrology is present only seasonally in many cases, and is often inferred by indirect evidence. Hydrology is controlled by such factors as seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage. Primary indicators of hydrology are inundation, soil saturation in the upper 12 inches of the soil, watermarks, sediment deposits, and drainage patterns. Secondary indicators such as oxidized root channels in the upper 12 inches of the soil, water-stained leaves, local soil survey data, and the FAC-neutral vegetation test are sometimes used to identify hydrology. A primary indicator or two or more secondary indicators are required to establish a positive indication of hydrology.

2.3.4 Wetland Definition Summary

In general, an area must meet all three criteria to be classified as a wetland. In certain problem areas such as seasonal wetlands, which are not wet at all times, or in recently disturbed (atypical) situations, areas may be considered a wetland if only two criteria are met. In special situations, an area that meets the wetland definition may not be within the USACE's jurisdiction due to a specific regulatory exemption.

2.4 Streams, Rivers, Watercourses & Jurisdictional Ditches

With non-tidal waters, in the absence of adjacent wetlands, the extent of the USACE's jurisdiction is defined by the OHWM. USACE regulations define the term "ordinary high water mark" for purposes of the CWA lateral jurisdiction at 33 CFR 328.3(e), which states:

> The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Streams, rivers, watercourse, and ditches within the Study Area were evaluated using the above definition and documented. Waterways that did exhibit an OHWM were recorded and evaluated using the Ohio Environmental Protection Agency's Primary Headwater Habitat Evaluation (HHEI) or Qualitative Habitat Evaluation Index (QHEI) methodology. If applicable, the results of the HHEI and/or QHEI are presented in Section 3.2, Technical Descriptions and datasheets are provided in the Appendix B.

2.5 Endangered Species Act

Endangered, Threatened, and rare (ETR) species are protected at both the state and federal level (ORC 1531.25 and 50 CFR 17.11 through 17.12, respectively). The Ohio Revised Code defines "Take" as to harass, hunt, capture, or kill; or attempt to harass, hunt, capture, or kill.

The USFWS, under authority of the Endangered Species Act of 1973 (16 U.S. Code 1531), as amended, has the responsibility for federally listed species. The Ohio Department of Natural Resources (ODNR) has the responsibility for state listed species.

3 Background Information

3.1 Existing Maps

Several sources of information were consulted to identify potential wetlands and wetland soil units on the site. These include the USFWS's *National Wetland Inventory* (NWI), the USGS's *National Hydrography Dataset* (NHD), and the Natural Resources Conservation Service's (NRCS) *Soil Survey* for this county. These maps identify potential wetlands and wetland soil units on the site. The NHD maps are used to portray surface water. The NWI maps were prepared from high altitude photography and in most cases were not field checked. Because of this, wetlands are sometimes erroneously identified, missed, or misidentified. Additionally, the criteria used in identifying these wetlands were different from those currently used by the USACE. The county soil maps, on the other hand, were developed from actual field investigations. However, they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions. The resolution of the soil maps limits their accuracy as well. The mapping units are often generalized based on topography and many mapping units contain inclusions of other soil types for up to 15 percent of the area of the unit. The USACE does not accept the use of either of these maps to make wetland determinations.

3.1.1 National Wetland Inventory

No wetland features were identified on the NWI map (Figure 1) within the Survey Area.

3.1.2 National Hydrography Dataset

No surface waters were identified on the NHD dataset (Figure 1) within the Survey Area.

3.1.3 Soil Survey

The NRCS Soil Survey identified four soil series within Butler County located within the project Study Area (Figure 3). The following table identifies the soil unit symbol, soil unit name, and whether or not the soil type contains components that meet the hydric soil criteria.

Table 3-2 Soil Map Units within the 3885 – East Provident Loop Study Area

Symbol	Description	Hydric
	Butler County	
DaB	Dana silt loam, 2 to 6 percent slopes	No
FcA	Fincastle silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	No
Pa	Patton silty clay loam, 0 to 2 percent slopes	Yes
RvB2	Russel-Miamian silt loams, 2 to 6 percent slopes, moderately eroded	No

4 Methodology and Description

4.1 Regulated Waters Investigation

The delineation of regulated waters within the Study Area was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Environmental Laboratory, 2010) as required by current USACE policy.

Prior to the field work, the background information was reviewed to establish the probability and potential location of wetlands on the site. Next, a general reconnaissance of the Study Area was conducted to determine site conditions. The site was then walked with the specific intent of determining wetland boundaries. Data stations were established at locations within and near the wetland areas to document soil characteristics, evidence of hydrology and dominant vegetation. Note that no attempt was made to examine a full soil profile to confirm any soil series designations. However, when possible, soils were examined to a depth of at least 16 inches to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil survey for this county.

4.1.1 Site Photographs.

Photographs of the site are located in Appendix A. These photographs are the visual documentation of site conditions at the time of inspection. The photographs are intended to provide representative visual samples of any wetlands or other special features found on the site.

4.1.2 Delineation Data Sheets.

Where stations represent a wetland boundary point they are presented as paired data points (dp), one each documenting the wetland and upland sides of the wetland boundary. These forms are the written documentation of how representative sample stations met or did not meet each of the wetland criteria. For plant species included on the National Wetlands Plant List, nomenclature will follow their lead. For all other plants not listed in the NWPL, nomenclature will follow the USDA's Plants Database.

4.2 Technical Descriptions

Complete stream field data sheets from the site investigation are located in Appendix B wetland field data sheets are located in Appendix C. The 3885 - East Provident Loop Newbuild project initiates at the proposed East Provident Substation located north of Provident Drive (39.31430, -84.45795), and terminates south of Provident Drive (39.31245, -84.45778) as it enters the existing Duke Energy right-of-way (ROW). The area investigated included an approximated 0.27 mile long by 150 foot wide ROW (6.07 acres) study area. The Study Area was primarily commercial development, secondary growth deciduous forest, and scrub-shrub/maintained ROW.

4.2.1 Wetland and Stream Descriptions

Wetland 1 (0.38 acre within the Study Area)

Wetland 1 was a palustrine emergent/scrub-shrub wetland complex located in a depressional area adjacent to a roadway and commercial facilities associated with surface water drainage conveyance. Wetland 1 is hydraulically connected to Stream 1 (unnamed intermittent stream) and therefore should be considered a jurisdictional 'waters of the U.S.' under the current Rapanos guidance. The ORAM score for Wetland 1 was 22, categorizing the wetland as a Category 2 wetland, or moderate quality wetland.

Dominant Vegetation in the vicinity included Black Willow (*Salix nigra*, OBL), Gray Dogwood (*Cornus racemosa*, FAC), Flat-Top Goldentop (*Euthamia graminifolia*, FACW), Canadian Goldenrod (*Solidago canadensis*, FACU), Swamp Milkweed (*Asclepias incarnata*, OBL), Lesser Poverty Rush (*Juncus tenuis*, FAC), Annual Blue Grass (*Poa annua*, FACU), and Fuller's Teasel (*Dipsacus fullonum*, FACU). In addition, non-dominant vegetation observed included Callery pear (*Pyrus calleryana*, UPL), Curly Dock (*Rumex crispus*, FAC), Red Clover (*Trifolium pratense*, FACU), Giant Ironweed (*Vernonia gigantea*, FAC), and Blunt Broom Sedge (*Carex tribuloides,* OBL). The soil from 0-16" had a matrix soil color of 10YR 4/1 with concentrations in the matrix at 5%, and texture of Silty Clay Loam. The soil at the data point was mapped as Fincastle silt loam, and met the Depleted Matrix (F3) and Redox Depressions (F8) hydric soil criteria. Primary indicators of hydrology included Saturation (A3), and secondary indicators of hydrology observed included Saturation Visible on Aerial Imagery (C9) and Geomorphic Position (D2).

Wetland 2 (0.13 acre within the Project Study Area)

Wetland 2 was a palustine emergent wetland located in a depressional area that serves as a detention basin to an adjacent commercial facility. Wetland 2 is hydraulically connected to Stream 1 and therefore should be considered a jurisdictional 'waters of the State' under the current Rapanos guidance. The ORAM score for Wetland 22, categorizing it as a Category 2, or moderate quality wetland.

Dominant vegetation within Wetland 2 included Dark-Green Bulrush (*Scirpus atrovirens,* OBL), and Lesser Poverty Rush (FAC). In addition, non-dominant vegetation observed included Swamp Milkweed (OBL), Common Fox Sedge (*Carex vulpinoidea,* FACW), Curly Dock (FAC), Red Clover (FACU), Giant Ironweed (FAC), Blunt Broom Sedge (OBL), Annual Blue Grass (FACU), Hybrid Cattail (*Typha X glauca*, OBL), and Lamp Rush (*Juncus effusus,* OBL). The soil from 0-18" had a matrix soil color of 10YR 4/2 with concentrations in the matrix at 10%, and a texture of Silty Clay

Loam. The soil at the data point was mapped as Fincastle silt loam, and met the Depleted Matrix (F3), and Redox Depressions (F8) hydric soil criteria. Primary indicators of hydrology included Saturation (A3), and secondary indicators of hydrology observed included Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and the FAC-Neutral Test (D5).

Stream 1 (Unnamed) (420 Linear Feet within the Study Area)

Stream 1 was an unnamed intermittent stream that flowed north through the eastern portion of the project study area. This stream was at base flow conditions at the time of the stream survey. The dominant substrates were cobble, gravel, silt, and sand. The Ordinary High Water Mark (OHWM) width was eight (8) to ten (10) feet and depth was one and a half feet. The maximum pool depth observed was three (3) inches. Stream 1 flows into Mill Creek, a tributary to the Ohio River, a traditional navigable water (TNW). Due to this connection, this stream should be considered a jurisdictional water of the United States. The HHEI score for Stream 1 was 45, categorizing the stream as a Modified Class II PHWH and "*any impacts are less unlikely to high quality resources.*"

4.3 Endangered, Threatened and Rare Species

The potential for listed species known to occur within Butler County were evaluated based on the habitat observed within the Study Area. In addition, high quality natural communities and significant natural habitat areas were documented if encountered. A walking survey of the Study Area was performed in which all observed Endangered, Threatened and Rare (ETR) species or specific known special habitats were noted. Table 1 summarizes the results of ETR species as they relate to the habitat observed within the Study Area are included with this report (Appendix D).

4.3.1 Bat Roost Habitat

The Indiana Bat (*Myotis sodalis*, federally endangered) and Northern Long-eared Bat (*Myotis septentrionalis*, federally threatened) are protected under the Endangered Species Act, which is overseen by the USFWS. Typical guidance from USFWS regarding potential bat roost trees is avoidance of cutting trees from April until October. The Study Area was assessed for potential bat roosting habitat with respect to any indicated clearing activities. Potential bat roost trees include dead or dying trees (including live shagbark hickories) with at least 10-percent exfoliating bark, a diameter at breast height (DBH) of at least 3 inches, and solar exposure for maternity roost trees (the tree is on a wooded edge or in a canopy gap).

Based on our field inspection and our best professional judgment, approximately 0.5 acres of the Study Area consisted of secondary growth forest located outside of the actively maintained right-of-way (ROW). Average diameter at breast height (DBH) for these canopy species was approximately ten to twelve inches. Understory vegetation was domidated by dense Amur honeysuckle (*Lonicera maackii*), Autumn Olive (*Elaeagnus umbellata*), Black Willow (*Salix nigra*), and Gray Dogwood (*Cornus racemosa*). Canopy species include Pin Oak (*Quercus palustris*), Eastern Cottonwood (*Populus deltoides*), Common Hackberry (*Celtis occidentalis*), Eastern Black Walnut (*Juglans nigra*), and American Sycamore (*Platanus occidentalis*). We do not recommend recommend any further survey options for this site.

The USFWS recommends all tree clearing activities should occur between October 1 to March 31. A Federal Nexus requiring further coordination with the USFWS may be required, as there will potentially be impacts to identified wetlands. The USFWS is the regulatory authority that makes the final determination as to the status of the Indiana bat within the Study Area. If requested, a letter based on the results and discussion can be generated and submitted to the USFWS for concurrence based on the level of documentation preferred.

5 Jurisdictional Analysis

5.1 U.S. Army Corps of Engineers

The USACE has authority over the discharge of fill or dredged material into "waters of the U.S.". This includes authority over any filling, mechanical land clearing, or construction activities that occur within the boundaries of any "waters of the U.S.". A permit must be obtained from the USACE before any of these activities occur. Permits can be divided into two general categories: Individual Permits and Nationwide Permits.

Individual Permits are required for projects that do not fall into one of the specific Nationwide Permits (NWP) or are deemed to have significant environmental impacts. These permits are much more difficult to obtain and receive a much higher level of regulatory agency and public scrutiny and may require several months to more than a year for processing.

Nationwide Permits (NWP) have been developed for projects that meet specific criteria and are deemed to have minimal impact on the aquatic environment. There are currently 52 Nationwide Permits for qualifying activities with 31 Nationwide Permit General Conditions that must be satisfied in order to receive NWP consideration from the USACE.

5.2 Ohio Environmental Protection Agency

The OEPA is responsible for issuing Clean Water Act (CWA) Section 401 permits known as Water Quality Certifications (WQC) for all impacts to "waters of the State of Ohio." This includes authority over any dredging, filling, mechanical land clearing, impoundments or construction activities that occur within the boundaries of any "waters of the State," including those isolated waters not otherwise regulated by the USACE.

The OEPA issues Section 401 WQC in conjunction with the USACE' Section 404 permits. A §401 Water Quality Certification must be received before the USACE can issue any §404 Department of the Army Permit. The OEPA must issue Individual §401 WQC for all Individual §404 Permits.

Water quality certification may be granted, without notification to the OEPA, if the project falls under the NWP limitations described above. In order to qualify for this granted certification, all prior-authorized and *de minimis* Ohio State Certification General Limitations and Conditions as published by the OEPA must be satisfied.

The OEPA also requires notification for all impacts to isolated wetlands, which includes a permit application and mitigation plan pursuant to Section 6111 of Ohio Revised Code (ORC).

6 Summary and Conclusion

6.1 Summary

Cardno inspected the 3885 – East Provident Substation Study Area on July 5 and July 12, 2017.

6.1.1 Wetlands and Waterways

One stream, one emergent wetland, and one emergent/scrub-shrub wetland complex were identified within the Study Area.

Table 6-1 Features Identified within the 3885 - East Provident Loop Study Area

Feature Name	USGS/ NWI Identified	Feature Class	Regulatory Status[1]	Riffles /Pools	Dimensions (ft)		Substrate	QHEI/ HHEI/ ORAM Score	Linear Footage (LF)	Acreage (AC)
					Width	Depth				
Wetland 1	No	PEM/PSS	Jurisdictional	N/A	N/A	N/A	N/A	22	N/A	0.38
Wetland 2	No	PEM	Jurisdictional	N/A	N/A	N/A	N/A	22	N/A	0.13
Stream 1	No	Intermittent	Jurisdictional	Yes	8-10	1.5	G – Sa – Si -C	45	420	0.09
Totals			Streams		Intermittent		Jurisdictional	420 LF		0.09
			Wetlands		PEM			---		0.38
					PSS			---		0.13
			Waterbodies Total				**Jurisdictional**	**420 LF**		**0.60**

[1] Regulatory Status is based on our "professional judgment" on experience, however the USACE makes the final determination.

6.1.2 Endangered, Threatened, and Rare Species

Several sources of information were consulted to further define the potential habitat of listed species that occur within the county of the Study Area. Table 1 in Appendix D, contains a list of the ETR species known to occur within Butler County and their potential to occur within the Study Area based on their habitat requirements and observations during the field survey (Appendix D).

6.1.3 Indiana Bat and Northern Long-eared Bat Roost Habitat

The entire Study Area was walked to identify potential Indiana Bat and Northern Long-eared Bat roost trees. Based on our field inspection and our best professional judgment, suitable bat roost habitat was not observed within the Study Area.

In the event tree clearing activity becomes a work priority within the Study Area, it is recommended that a field inspection be performed within the clearing limits to ensure that potential bat habitat has not developed. The USFWS is the regulatory authority that makes the final determination as to the status of the Indiana Bat and Northern Long-eared Bat in the Study Area.

6.2 Conclusion

A permit must be obtained from the USACE and the OEPA prior to any filling, dredging, or mechanical land clearing that occurs within the boundaries of any 'waters of the U.S.' or 'waters of the State'.

While this report represents our best professional judgment based on our knowledge and experience, it is important to note that the Huntington District of the U.S. Army Corps of Engineers

has final discretionary authority over all jurisdictional determinations of 'waters of the U.S.' including wetlands under Section 404 of the CWA in this region. It is therefore, recommended that a copy of this report be furnished to the Huntington District of the U.S. Army Corps of Engineers to confirm the results of our findings.

7 References

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers' Wetland Delineation Manual*, Technical Report Y-87-1, U.S. Waterways Experiment Station, Vicksburg, MS.

Environmental Laboratory. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region*, ERDC/EL TR-10-16, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Gleason, H.A. and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. 2nd Edition. The New York Botanical Garden. Bronx, NY.

Lichvar, R.W. 2013. The National Wetland Plant List: 2013 Wetland Ratings. Phytoneuron 2013-49: 1-241. Published July 17, 2013. ISSN 2153 733X.

Lichvar, R.W., and John T. Kartesz. 2009. *North American Digital Flora: National Wetland Plant List, version 2.4.0* (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Lichvar, R., Melvin, N.C., Butterwick, M.L. and Kirchner, W.N. 2012. *National Wetland Plant List Indicator Rating Definitions.* ERDC/CRREL TN-12-1. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. http://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-Indicator-Rating-Definitions.pdf

Reed, P. B., Jr. 1988. National List of Plant Species that Occur in Wetlands: 1988. Washington, DC: U.S. Fish and Wildlife Service.

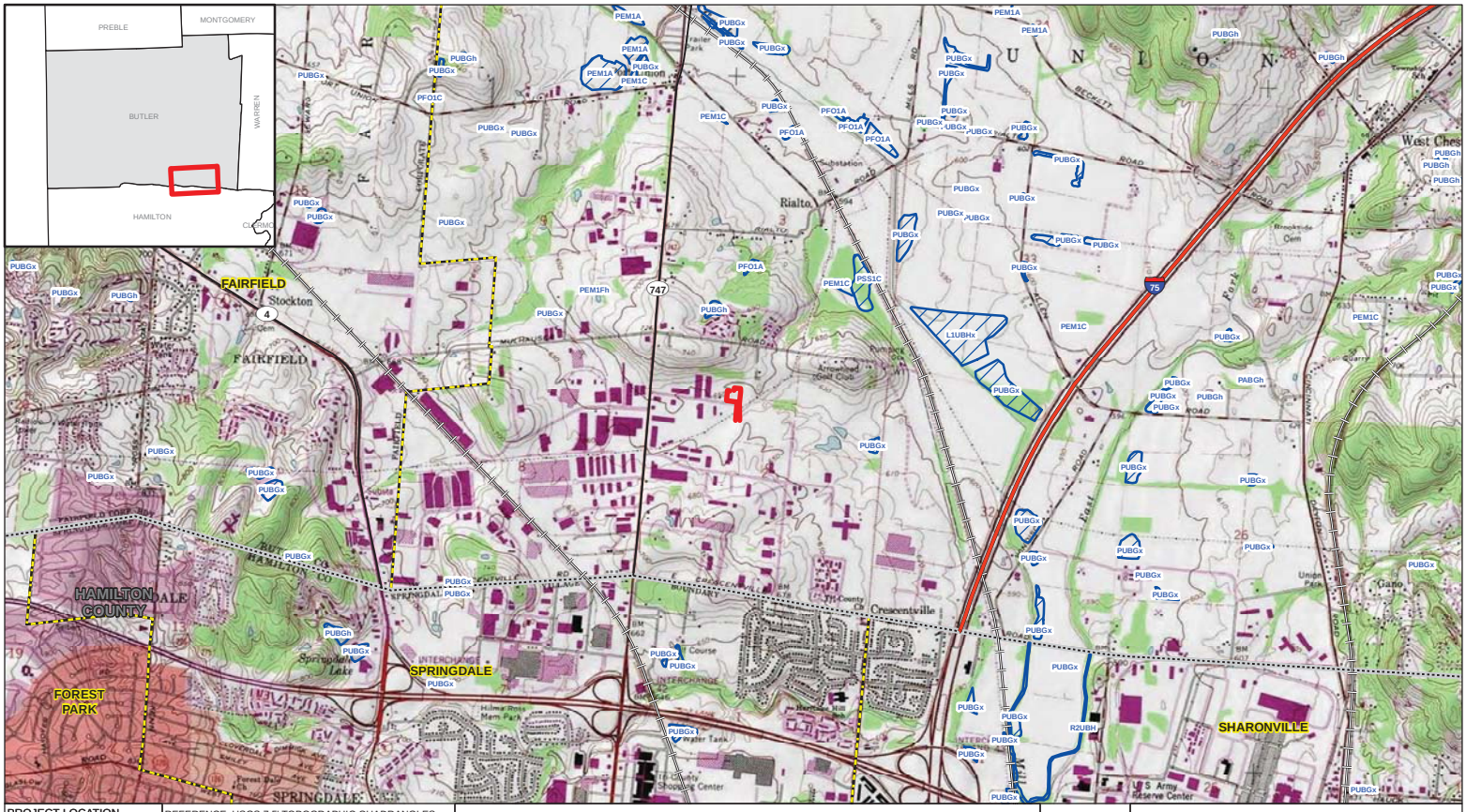
United States Department of Agriculture, Natural Resource Conservation Service (NRCS). Web Soil Survey. Soil Survey of Butler County, OH.

United States Environmental Protection Agency (EPA). 2015. Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence (http://www.epa.gov/cleanwaterrule)

United States Environmental Protection Agency (EPA). 2015. Technical Support Document for the Clean Water Rule: Definition of Waters of the United States (http://www.epa.gov/cleanwaterrule)

DUKE ENERGY
3885 - 138kV East Provident Loop

FIGURES



PROJECT LOCATION

WARREN COUNTY, OH

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: MONROE AND LEBANON, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.

N

0 1,000 2,000 Feet

- Project Centerline
- NWI Wetland
- Interstate
- State Highway
- US Highway
- Railroad
- County Boundary
- Municipal Boundary

DUKE ENERGY

Cardno

FIGURE 1

REGULATED WATERS DELINEATION REPORT
3885 – 138kV EAST PROVIDENT LOOP
DUKE ENERGY
PROJECT VICINITY MAP

DRAWN BY: COD DATE: 8/11/2017
CHECKED: CJ APPROVED: JT

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FRESHWATER WETLAND CLASSIFICATION

P—PALUSTRINE

- **RB ROCK BOTTOM**
  1) Bedrock
  2) Rubble
- **UB UNCONSOLIDATED BOTTOM**
  1) Cobble/Gravel
  2) Sand
  3) Mud
  4) Organic
- **AB AQUATIC BED**
  1) Algal
  2) Aquatic Moss
  3) Rooted Vascular
  4) Floating Vascular
  5) UNK Submergent
  6) UNK Surface
- **US UNCONSOLIDATED SHORE**
  1) Cobble/Gravel
  2) Sand
  3) Mud
  4) Organic
  5) Vegetated
- **ML MOSS-LICHEN**
  1) Mosses
  2) Lichen
- **EM EMERGENT**
  1) Persistent
  2) Nonpersistent
- **SS SHRUB SCRUB**
  1) Broad Leaf Decid.
  2) Needle Leaf Decid.
  3) Broad Leav Evergr.
  4) Needle Leaf Evergr.
  5) Dead
  6) Deciduous
  7) Evergreen
- **FO FORESTED**
  1) Broad Leaf Decid.
  2) Needle Leaf Decid.
  3) Broad Leav Evergr.
  4) Needle Leaf Evergr.
  5) Dead
  6) Deciduous
  7) Evergreen
- **OW OPEN WATER**
  Unknown Bottom

R—RIVERINE

1 TIDAL

- **RB ROCK BOTTOM**
  1 Bedrock
  2 Rubble
- **UB UNCONSOLIDATED BOTTOM**
  1 Cobble/Gravel
  2 Sand
  3 Mud
  4 Organic
- **AB AQUATIC BED**
  1 Algal
  2 Aquatic Moss
  3 Rooted Vascular
  4 Floating Vascular
  5 UNK Submergent
  6 UNK Surface
- **US UNCONSOLIDATED SHORE**
  1 Cobble/Gravel
  2 Sand
  3 Mud
  4 Organic
  5 Vegetated
- **SB STREAMBED ***
  1 Bedrock
  2 Rubble
  3 Cobble-Gravel
  4 Sand
  5 Mud
  6 Organic
  7 Vegetated
- **EM EMERGENT ****
  1 Persistent
  2 Non-persistent
- **RS ROCKY SHORE**
  1 Bedrock
  2 Rubble
- **OW OPEN WATER**
  Unknown Bottom

2 LOWER PERENNIAL

3 UPPER PERENNIAL

4 INTERMITTENT

5 UNKNOWN PERENNIAL

MODIFYING TERMS

In order to more adequately describe wetland and aquatic habitats water regime, water chemistry, soil of special modifiers may be applied.

WATER REGIME		*WATER CHEMISTRY*		*SOIL*	*SPECIAL MODIFIERS*
NON-TIDAL		INLAND SALINITY	pH MODIFIERS FOR FRESHWATER		
A Temporarily Flooded	J Intermittently Flooded	7 Hypersaline	a Acid	g Organic	b Beaver
B Saturated	K Artificially Flooded	8 Eusaline	t Circumneutral	n Mineral	d Partially Drained/Ditched
C Seasonally Flooded	W Intermittently Flooded/ Temporary	9 Mixosaline	i Alkaline		f Farmed
D Seasonally Flooded/ Well-Drained	Y Saturated/Semipermanent/ Seasonal	0 Fresh			h Diked/Impounded
E Seasonally Flooded/Saturated	Z Intermittently Exposed/ Permanent				r Artificial Substrate
F Semipermanently Flooded	U Unknown				s Spoil
G Intermittently Exposed					x Excavated
H Permanently Flooded					

Dominance types must be added by users.

Classification of wetland and deepwater habitats of the U.S. Cowardin et. al. 1979 as modified for national wetland inventory mapping conventions.

Figure 2: NWI KEY
REGULATED WATERS DELINEATION REPORT
3885 – 138kV EAST PROVIDENT LOOP
DUKE ENERGY
BUTLER COUNTY, OHIO

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Shaping the Future
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Project No.
J156720M58

Date Created: 8/11/2017 Date Revised: 8/11/2017 File Path: \\cardno.corp\Global\US\Shared\CJFNProjects\Projects\15\156\156720M_DukeEnergy9193\M58_SOW21_EastProvidentSubstation138KVLoop\GIS\MXD\Delineation\20170811_D2_M58_NWI_KeY.mxd Saved By:: cori.jansing
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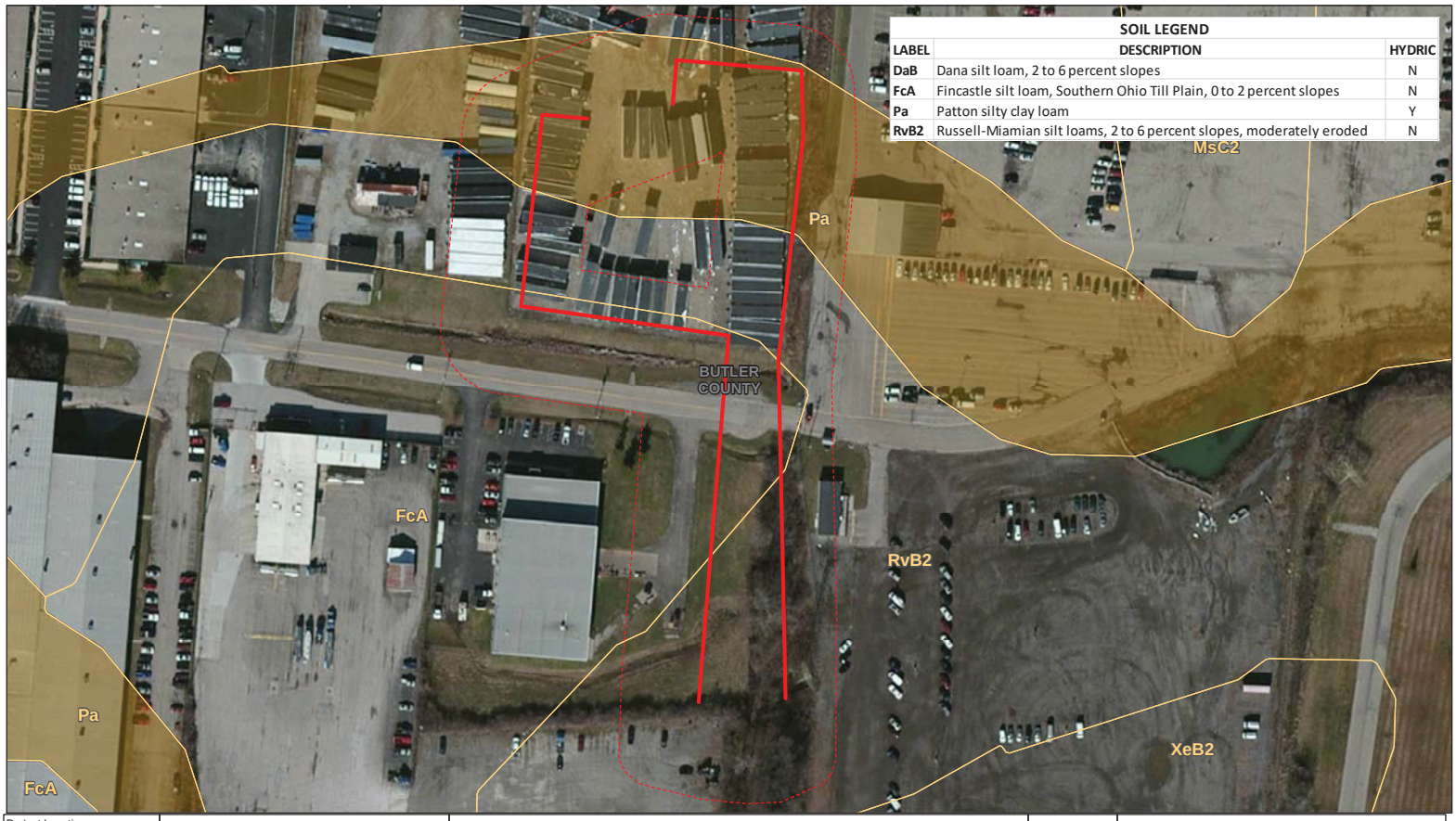

Project Location

REFERENCE:
ESRI WORLD IMAGERY, OBTAINED THROUGH ESRI WORLD IMAGERY MICROSOFT CORPORATION, ACCESSED 01/2017

N

0 50 100 200 Feet

Interstate
150ft Corridor
US Highway
State Highway
Railroad
County Boundary
Municipal Boundary
Project Centerline
Soil Unit
Soil Unit - Hydric

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FIGURE:
REGULATED WATERS DELINEATION REPORT
3885 – 138kV EAST PROVIDENT LOOP
DUKE ENERGY
SOIL SURVEY

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CHECKED: CJ APPROVED: JT

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SHEET INDEX

REFERENCE:
ESRI WORLD IMAGERY, OBTAINED THROUGH ESRI WORLD IMAGERY MICROSOFT CORPORATION, ACCESSED 01/2017

N

0 50 100 Feet

- 150ft Corridor
- Identified Feature
- Proposed Structure
- Existing Culvert
- Parcels
- Interstate
- State Highway
- US Highway
- Railroad
- Local Road
- Local Road
- Road Centerline
- Fiber Roll
- Proposed Access
- Temp Construction Matting
- Fence Line
- Project Centerline
- NWI Wetland
- NHD Flowline
- 100 yr and Floodway
- Soil Unit
- Soil Unit - HYDRIC
- Municipal Boundary
- Existing Contour
- Delineated Stream
- Delineated Wetland

DUKE ENERGY.

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FIGURE: 4
WETLAND DELINEATION
3885 – 138kV EAST PROVIDENT LOOP
DUKE ENERGY
WETLAND DELINEATION MAP

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DUKE ENERGY
3885 - 138kV East Provident Loop

APPENDIX

A

SITE PHOTOGRAPHS

Photo 1: Overview of Wetland 1, facing west.

Photo 2: Overview of Wetland 1, facing east.

Photo 3: Overview of Wetland 2, facing south.

Photo 4: Overview of Wetland 2, facing west.

Project Number:
J156720M58

Site Photographs

Duke Energy — East Provident Loop
Union Township, Butler County, Ohio
Waters of the United States Delineation

Cardno
Shaping the Future

Photo 5: View of Stream 1, facing south upstream.

Photo 6: View of Stream 1, facing north downstream.

Photo 7: Overview of new Duke ROW facing north.

Photo 8: View of the proposed East Provident Substation location, facing north.

DUKE ENERGY
3885 - 138kV East Provident Loop

APPENDIX

B

OHIO EPA PRIMARY HEADWATER
HABITAT EVALUATION FORMS

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 45

SITE NAME/LOCATION: Duke Energy 3885 - 38kV East Provident Loop Newbuild

SITE NUMBER: S01 RIVER BASIN: Mill Creek DRAINAGE AREA (mi²): 3.57

LENGTH OF STREAM REACH (ft): 420 LAT.: 39.313200 LONG.: -84.4574 RIVER CODE: RIVER MILE:

DATE: 8/7/2017 SCORER: Amy Cameron COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS ☐ None / Natural Channel ☐ Recovered ☑ Recovering ☐ Recent or No Recovery

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 PTS]		☑ SILT [3 PTS]	25
☐ BOULDER (>256 mm) [16 PTS]		☐ LEAF PACK/WOODY DEBRIS [3 PTS]	
☐ BEDROCK [16 PTS]		☐ FINE DETRITUS [3 PTS]	
☐ COBBLE (65-256 mm) [12 PTS]	5	☐ CLAY or HARDPAN [0 PTS]	
☑ GRAVEL (2-64 mm) [9 PTS]	50	☐ MUCK [0 PTS]	
☐ SAND (<2 mm) [6 PTS]	20	☐ ARTIFICIAL [3 PTS]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedroc: 5 (A)

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 6

(B)

TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40

10

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 ft)* evaluation reach at the tim evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ >30 centimeters [20 PTS]	☑ >5 cm - 10 cm [15 PTS]
☐ >22.5 - 30 cm [30 PTS]	☐ ≤5 cm [5 PTS]
☐ >10 - 22.5 cm [25 PTS]	☐ NO WATER OR MOIST CHANNEL [0 PTS]

COMMENTS

MAXIMUM POOL DEPTH (centimeters): 7

Pool Depth Max = 30

15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

☐ >4.0 meters (>13') [30 PTS]	☐ >1.0 m - 1.5 m (>3' 3" - 4' 8") [15 PTS]
☐ >3.0 m - 4.0 m (>9' 7" - 13') [25 PTS]	☐ ≤1.0 m (≤3' 3") [5 PTS]
☑ >1.5 m - 3.0 m (>4' 8" - 9' 7") [20 PTS]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters): 3.0

Bankfull Width Max = 30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH	L	R	FLOODPLAIN QUALITY (Most Predominant Within Bank)	L	R	
☐ Wide >10 m	☐	☐	Mature Forest, Wetland	☐	☐	☐ Conservation Tillage
☐ Moderate 5 - 10 m	☐	☐	☑ Immature Forest, Shrub or Old Field	☐	☐	☑ Urban or Industrial
☑ Narrow <5 m	☑	☑	☐ Residential, Park, New Field	☐	☐	☐ Open Pasure, Row Crop
☐ None	☐	☐	☐ Fenced Pasture	☐	☐	☐ Mining or Construction

Comments

FLOW REGIME (*At Time of Evaluation*) (Check *ONLY* one box):

☑ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☐ Dry channel, no water (Ephemeral)

Comments

SINUOSITY (Number of bends per 61m (200ft) of channel) (Check *ONLY* one box):

☐ None	☑ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5ft/100ft) ☐ Flat to Moderate ☑ Moderate (2ft/100ft) ☐ Moderate to Severe ☐ Severe (10ft/100ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): S01

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Mill Creek Distance from Evaluated Stream 3.14 miles

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Glendale NRCS Soil Map Page: N/A NRCS Soil Map Stream Order 1

County: Butler Township/City: West Chester Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipition: 7/5/2017 Quantity: 0.06"

Photographer Information: upstream and downstream

Elevated Turbidity? (Y/N): N Canopy (% open): 10

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number N/A

Field Measures: Temp (°C) N/A Dissolved Oxygen (mg/l) N/A pH (S.U.) N/A Conductivity (µmhos/cm) N/A

Is the sampling reach representative of the stream? (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts _____

BIOTIC EVAULATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual)

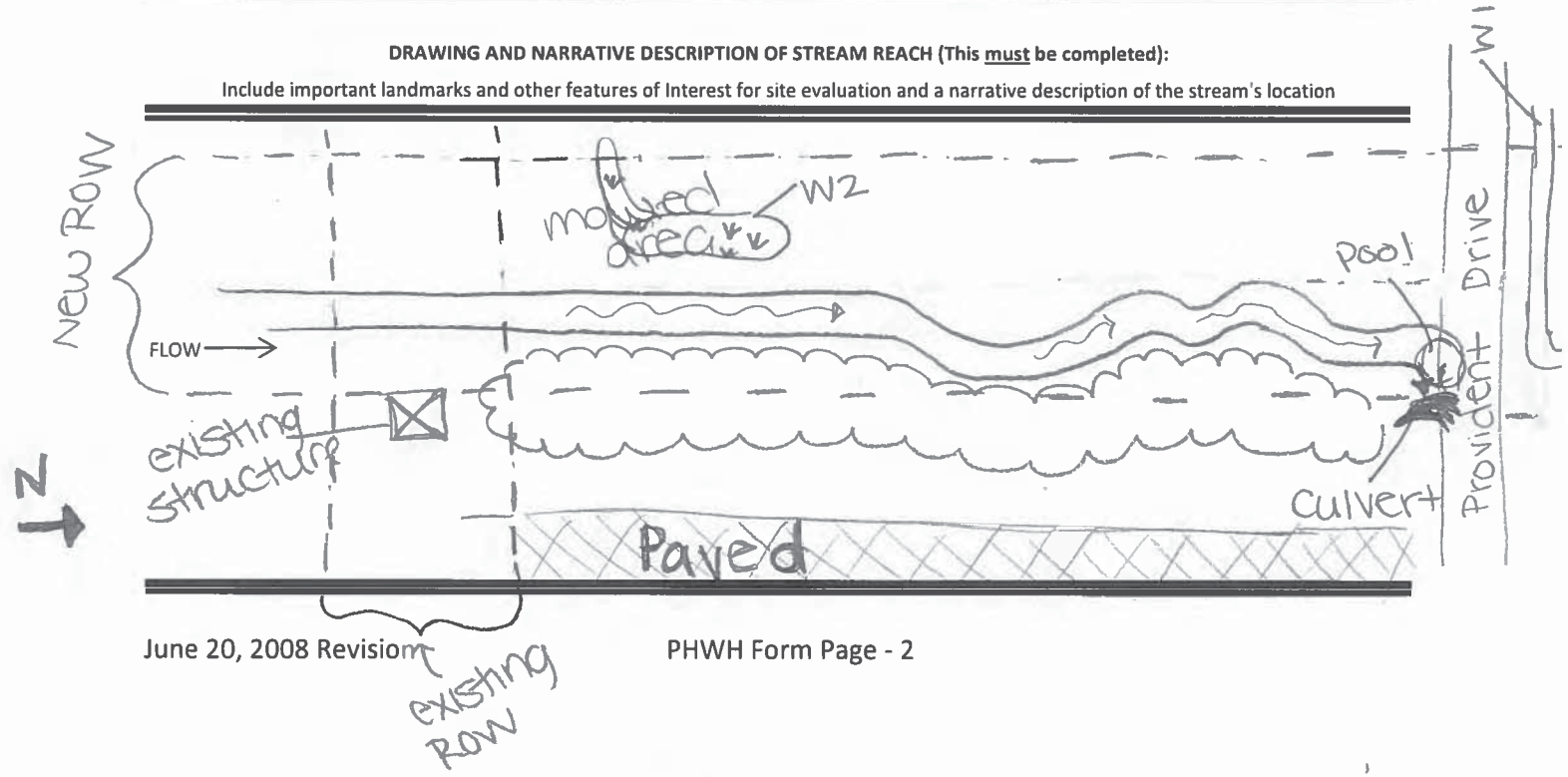
Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location



DUKE ENERGY
3885 - 138kV East Provident Loop

APPENDIX

C

OHIO RAPID ASSESSMENT METHOD 5.0 FORM AND USACE WETLAND DELINEATION DATA SHEETS

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Duke Energy 3885 38kV - East Provident Loop Newbuild | City/County: Union Twp/Butler County | Sampling Date: 7/12/2017

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP01

Investigator(s): Cori Jansing & Amy Cameron | Section, Township, Range: 2,2N,2E

Landform (hillslope, terrace, etc.): Slough | Local relief (concave, convex, none): concave

Slope (%): 0-2% | Lat: 39.3134 | Long: -84.4577 | Datum: NAD83 UTM16N

Soil Map Unit Name: Fincastle silt loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *No vegetation*			UPL
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Salix nigra*	30%	Yes	OBL
2. *Cornus racemosa*	20%	Yes	FAC
3. *Pyrus calleryana*	5%	No	UPL
4.			
5.			
	55%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Euthamia graminifolia*	5%	No	FACW
2. *Solidago canadensis*	5%	No	FACU
3. *Asclepias incarnata*	5%	No	OBL
4. *Rumex crispus*	2%	No	FAC
5. *Trifolium pratense*	2%	No	FACU
6. *Vernonia gigantea*	2%	No	FAC
7. *Carex tribuloides*	2%	No	OBL
8. *Juncus tenuis*	5%	No	FAC
9. *Poa annua*	10%	No	FACU
10. *Dipsacus fullonum*	5%	No	FACU
11. *Typha X glauca*	50%	Yes	OBL
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	93%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *No vegetation*			UPL
2.			
	= Total Cover		

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:	A/B
That Are OBL, FACW, or FAC:			
OBL species	87%	x1 =	0.87
FACW species	5%	x2 =	0.1
FAC species	29%	x3 =	0.87
FACU species	22%	x4 =	0.88
UPL species	5%	x5 =	0.25
Column Totals:	1.48 (A)		2.97 (B)

Prevalence Index = B/A = 2.01

Hydrophytic Vegetation Indicators:

- ____ 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 4/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	0"
Water Table Present?	Yes ___ No X	Depth (inches):	>16"
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	3"

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Duke Energy 3885 138kV - East Provident Loop Newbuild | City/County: Union Twp/Butler County | Sampling Date: 7/12/2017

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP 2

Investigator(s): Cori Jansing & Amy Cameron | Section, Township, Range: S2 T2N R2E

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): concave

Slope (%): 0-2% | Lat: 39.3135 | Long: -84.4577 | Datum: NAD83 UTM16N

Soil Map Unit Name: Fincastle silt loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *No vegetation*			UPL
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *No vegetation*			UPL
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Trifolium repens*	30%	Yes	FACU
2. *Carex lurida*	5%	No	OBL
3. *Erigeron annuus*	3%	No	FACU
4. *Melilotus officinalis*	80%	Yes	FACU
5. *Daucus carota*	5%	No	UPL
6. *Desmodium canadense*	10%	No	FACU
7. *Dipsacus fullonum*	5%	No	FACU
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	138%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *No vegetation*			UPL
2.			
		= Total Cover	

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:	
			A/B
OBL species	5%	x1 =	0.05
FACW species		x2 =	
FAC species		x3 =	
FACU species	128%	x4 =	5.12
UPL species	5%	x5 =	0.25
Column Totals:	1.38 (A)		5.42 (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5"	10YR 4/3	100					Silty Clay Loam	
5-10"	10YR 5/3	95	10YR 5/8	5			Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 10"

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	0"
Water Table Present?	Yes ___ No X	Depth (inches):	>16"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	0"

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Duke Energy 3885 138kV - East Provident Loop Newbuild | City/County: Union Twp/Butler County | Sampling Date: 7/5/2017

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP03

Investigator(s): Cori Jansing & Amy Cameron | Section, Township, Range: 2,2N,2E

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): 0-2% | Lat: 39.3127 | Long: -84.4576 | Datum: NAD83 UTM16N

Soil Map Unit Name: Russell-Miamian silt loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *No vegetation*			UPL
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *No vegetation*			UPL
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Asclepias incarnata*	10%	No	OBL
2. *Scirpus atrovirens*	80%	Yes	OBL
3. *Carex vulpinoidea*	20%	No	FACW
4. *Rumex crispus*	5%	No	FAC
5. *Trifolium pratense*	5%	No	FACU
6. *Vernonia gigantea*	15%	No	FAC
7. *Carex tribuloides*	5%	No	OBL
8. *Juncus tenuis*	30%	Yes	FAC
9. *Poa annua*	10%	No	FACU
10. *Typha X glauca*	5%	No	OBL
11. *Juncus effusus*	2%	No	OBL
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	187%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *No vegetation*			UPL
2.			
		= Total Cover	

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:	A/B
That Are OBL, FACW, or FAC:			
OBL species	102%	x1 =	1.02
FACW species	20%	x2 =	0.4
FAC species	50%	x3 =	1.5
FACU species	15%	x4 =	0.6
UPL species		x5 =	
Column Totals:	1.87 (A)		3.52 (B)

Prevalence Index = B/A = 1.88

Hydrophytic Vegetation Indicators:

- ____ 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- ____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 4/2	90	10YR 5/6	10	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	N/A
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Duke Energy 3885 138kV - East Provident Loop Newbuild | City/County: Union Twp/Butler County | Sampling Date: 7/5/2017

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP04

Investigator(s): Cori Jansing & Amy Cameron | Section, Township, Range: 2,2N,2E

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): none

Slope (%): 0-2% | Lat: 39.3128 | Long: -84.3128 | Datum: NAD83 UTM16N

Soil Map Unit Name: Russell-Miamian silt loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *No vegetation*			UPL
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Pyrus calleryana*	10%	Yes	UPL
2. *Salix nigra*	5%	Yes	OBL
3.			
4.			
5.			
	15%	= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Cichorium intybus*	10%	No	FACU
2. *Allium canadense*	5%	No	FACU
3. *Trifolium pratense*	20%	Yes	FACU
4. *Melothria pendula*	3%	No	FAC
5. *Convolvulus equitans*	5%	No	FACU
6. *Apocynum androsaemifolium*	5%	No	UPL
7. *Chamaecrista fasciculata*	60%	Yes	FACU
8. *Vernonia gigantea*	10%	No	FAC
9. *Melilotus officinalis*	5%	No	FACU
10. *Daucus carota*	5%	No	UPL
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	128%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis riparia*	5%	Yes	FACW
2.			
	5%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	A/B
OBL species	5%	x1 =	0.05
FACW species	5%	x2 =	0.1
FAC species	13%	x3 =	0.39
FACU species	105%	x4 =	4.2
UPL species	20%	x5 =	1
Column Totals:	1.48 (A)		5.74 (B)

Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation
____ 2-Dominance Test is >50%
____ 3-Prevalence Index is ≤3.0[1]
____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 4/2	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	N/A
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	N/A

Wetland Hydrology Present? **Yes** ___ **No** X

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

Remarks:

ORAM v 5.0 Field Form Quantitative Rating

Site: 3885 East Provident Loop - Wetland 1	Rater(s): Cori Jansing	Date: July 5, 2017

Project: Duke Energy - 3885 East Provident Loop J156720M58

2	2
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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

3	5
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)
- [x] 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)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9	14
max 30 pts.	subtotal

Metric 3. Hydrology

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

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] 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)
- [x] <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)
- [x] 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)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

[x]	ditch	[ ]	point source (nonstormwater)
[ ]	tile	[ ]	filling/grading
[ ]	dike	[x]	road bed/RR track
[ ]	weir	[ ]	dredging
[x]	stormwater input	[ ]	other

8	22
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)
- [x] 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)
- [x] 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)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

[x]	mowing	[ ]	shrub/sapling removal
[ ]	grazing	[ ]	herbaceous/aquatic bed removal
[ ]	clearcutting	[x]	sedimentation
[ ]	selective cutting	[ ]	dredging
[ ]	woody debris removal	[ ]	farming
[ ]	toxic pollutants	[X]	nutrient enrichment

22
subtotal this page

ORAM v 5.0 Field Form Quantitative Rating

Site:	3885 East Provident Loop - Wetland 1	Rater(s):	Cori Jansing	Date:	July 5, 2017

0

subtotal this page

Site:	Duke Energy - 3885 East Provident Loop J156720M58

0	0

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)
x	Not Applicable (0)

0	0

max 20 pts subtotal

Metric 6. Plant communities, interspersion, microtopograhy.

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

0	Aquatic bed
1	Emergent
1	Shrub
0	Forest
0	Mudflats
0	Open water
0	Other

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

	High (5)
	Moderately high (4)
	Moderate (3)
	Moderately low (2)
x	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)
x	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.

0	Vegetated hummocks/tussocks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breading 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 no always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
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

22	Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

ORAM v 5.0 Field Form Quantitative Rating

Site: 3885 East Provident Loop	Rater(s): Amy Cameron	Date: July 12, 2017

Project: Wetland 2

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) (2 pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

3	4
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)
- [x] 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)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	14
max 30 pts.	subtotal

Metric 3. Hydrology

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

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] 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)
- [x] <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)
- [x] 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)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

[x]	ditch	[ ]	point source (nonstormwater)
[ ]	tile	[ ]	filling/grading
[ ]	dike	[ ]	road bed/RR track
[ ]	weir	[ ]	dredging
[x]	stormwater input	[ ]	other

7.5	22
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)
- [x] Recovered (3)
- [x] 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)
- [x] 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)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

[x]	mowing	[ ]	shrub/sapling removal
[ ]	grazing	[ ]	herbaceous/aquatic bed removal
[ ]	clearcutting	[ ]	sedimentation
[ ]	selective cutting	[ ]	dredging
[ ]	woody debris removal	[ ]	farming
[ ]	toxic pollutants	[X]	nutrient enrichment

22
subtotal this page

ORAM v 5.0 Field Form Quantitative Rating

Site:	3885 East Provident Loop	Rater(s):	Amy Cameron	Date:	July 12, 2017

0

subtotal this page

Site: Wetland 2

0	0

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)
x	Not Applicable (0)

0	0

max 20 pts subtotal

Metric 6. Plant communities, interspersion, microtopograhy.

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

0	Aquatic bed
1	Emergent
0	Shrub
0	Forest
0	Mudflats
0	Open water
0	Other

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

	High (5)
	Moderately high (4)
	Moderate (3)
	Moderately low (2)
	Low (1)
x	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)
x	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummocks/tussocks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breading 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
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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 no always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
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

22	Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

DUKE ENERGY
3885 - 138kV East Provident Loop

APPENDIX

D

ENDANGERED, THREATENED, AND RARE SPECIES

SPECIES	COMMON NAME	STATE STATUS[1]	FEDERAL STATUS[2]	HABITAT[3]	BREEDING PERIOD[3]	PROBABILITY OF OCCURENCE[4]
Butler County						
MAMMAL						
Myotis sodalis	Indiana Bat	SE	LE	Wooded and Semi wooded areas, mainly along streams. Maternity colonies are around hollow trees.	August-October	Low
BIRD						
Bartramia longicauda	Upland Sandpiper	E	---	Native grassland, shortgrass areas, mudflats and wetland environments, some cropland.	Mid July-August	Low
Ixobrychus exilis	Least Bittern	T	---	Freshwater or brackish marshes with tall emergent vegetation.	Mid-late May	Low
Nycticorax nycticorax	Black-crowned Night-heron	T	---	Thick vegetation along streams, lakes, and wetlands.	April-May	Low
Porzana Carolina	Sora Rail	SC	---	Freshwater marshes in vegetation near the water's edge.	May-early June	Low
FISH						
Exoglossum laurae	Tonguetied Millow	T	---	Rocky pools and runs of creeks and small to medium rivers, often near vegetation or other cover.	Late April-May	Low
INVERTEBRATE						
Gomphus externus	Plains Clubtail	E	---	Found near large, slow, muddy streams and rivers.	May-Late July	Low
Ladona deplanata	Blue Corporal	E	---	Woodland edges near ponds and slow-moving streams.	March-May	Low
Orconectes sloanii	Sloan's Crayfish	T	---	Freshwater lakes and streams, under rocks and logs.	August-October	Low
REPTILE						
Clonophis kirtlandii	Kirtland's Snake	ST	---	Prairie fens, wet meadows, wet prairies and associated open and wooded wetlands	February-March, May, August-September	Low
AMPHIBIAN						
Eurycea lucifuga	Cave Salamander	E	---	In and around caves, seeps, springs, and small forested limestone creeks associated with groundwater. Rock crevices or under rocks, logs, or other debris.	December-February	Low
PLANT						
Arabis pycnocarpa var. adpressipilis	Southern Hairy Rock Cress	P	---	Variable habitat from part-shade, open woods to sunny, open prairie.	n/a	Low
Arabis pycnocarpa va. Pycnocarpa	Western Hairy Rock Cress	X	---	Meadows, meadow slopes, juniper hills, pastures, rocky outcrops, roadsides.	n/a	Low
Cyperus acuminatus	Pale Umbrella-sedge	P	---	Open, wet, sandy habitats. Sores, seepages and fields.	n/a	Low
Bromus kalmia	Prairie Brome	P	---	Open upland woodlands, mesic to dry-mesic prairie, and grassy fens.	n/a	Low
Carex mesochorea	Midland Sedge	T	---	Well-drained openings and clearings, oak woods and borders, fields.	n/a	Low

Carex tmida	Timid Sedge	T	---	Wet/marshy areas, sedge meadows, forests, and prairies.	n/a	Low
Echinodorus berteroi	Burhead	P	---	Muddy shores and shallow water of lakes, ponds, slow-moving streams, and ditches. Also in swamp woods and river bottoms.	n/a	Low
Ribes missouriense	Missouri Gooseberry	ST	---	Mesic to dry open woodlands, savannas, woodland borders, thickets, power line clearances and small meadows and wooded areas, abandoned fields, and partially shaded fence rows.	n/a	Low
Salix caroliniana	Carolina Willow	P	---	Wetland areas such as streams, swamps, marshes and retention ponds.	n/a	Low
Silene nivea	Snowy Campion	E	---	Forested river valley.	n/a	Low
Viburnum molle	Soft-leaved Arrow-wood	T	---	Dry, rocky woods, grassland, shores of rivers or lakes.	n/a	Low

1. STATE STATUS - X = extirpated, E = endangered, T = threatened, R = rare, SSC = special concern, WL = watch list, SG = significant, ** = no status but rarity warrants concern
Ohio Department of Natural Resources, Division of Wildlife Website - http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf (March 2016).

2. FEDERAL STATUS - E = endangered, T = threatened, R = rare, LELT = different listing for specific ranges or species, PE = proposed endangered , PT = proposed threatened, e/sa – appearance similar to a listed endanger species, **= not listed
United States Fish and Wildlife Service, County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species - http://www.fws.gov/midwest/endangered/lists/ohio-cty.html (January 2017).

3. Habitats and Breeding Periods described by:
   a. NatureServe: An online encyclopedia of life [web application].2000. Version 1.1 Arlington, Virginia, USA: Association for Biodiversity information. Available: http://www.natureserve.org/ (Accessed January 6, 2017).
   b. United States Fish and Wildlife Service Rayed Bean Fact Sheet - http://www.fws.gov/midwest/endangered/clams/rayedbean/RayedBeanFactSheet.html (January 6, 2017).
   c. United States Fish and Wildlife Service Indiana Bat Fact Sheet - http://www.fws.gov/midwest/endangered/mammals/inba/index.html (January 6, 2017).
   d. United States Fish and Wildlife Service Northern Long-eared Bat Fact Sheet - http://www.fws.gov/midwest/endangered/mammals/nleb/index.html (January 6, 2017).
   e. United States Fish and Wildlife Service Eastern Massasauga Fact Sheet - http://www.fws.gov/midwest/endangered/mammals/inba/index.html (January 6, 2017).
   f. United States Fish and Wildlife Service Running buffalo clover Fact Sheet - http://www.fws.gov/midwest/endangered/mammals/nleb/index.html (January 6, 2017).

4. Likelihood of occurrence: None, Low, Moderate, or High based on best available data and selective field observations.

Summary: Application Letter of Notification for the Duke Energy Ohio 3885 - 138kv East Provident Loop Newbuild electronically filed by Ms. Emily Olive on behalf of Duke Energy Ohio and Spiller, Amy B. Ms. and Kingery, Jeanne W. Ms.