LETTER OF NOTIFICATION

FOR THE

Morgan Transmission Line Separation Project

PUCO Case No. 20-0007-EL-BLN

Submitted to:

The Ohio Power Siting Board

Pursuant to O.A.C. 4906-06

Submitted by:

Duke Energy Ohio, Inc.

January 2021

TABLE OF CONTENTS

ATTACHMENTS

LETTER OF NOTIFICATION

This Letter of Notification has been prepared by Duke Energy Ohio, Inc., (hereafter "Duke Energy Ohio") in accordance with Ohio Administrative Code (O.A.C.) Section **4906-6-05** for the review of Accelerated Certificate Applications. The following sections correspond to the administrative code sections for the requirements of a Letter of Notification.

4906-06-05: ACCELERATED APPLICATION REQUIREMENTS

4906-6-05(B): General Information

4906-6-05(B)(1): Name, Reference Number, Brief Description, and Letter of Notification Requirement

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a Letter of Notification.

Name of Project:

Duke Energy Ohio Morgan Transmission Line Separation Project (Project)

2020 LTFR and PJM Reference:

FE-T9 pg 49 PJM s1236

Brief Description of the Project:

Duke Energy proposes to separate the F1689 and F5783 circuits and relocate the F5783 circuit to a new transmission corridor north of the existing double-circuit corridor, from the Morgan Substation, located in Whitewater Township within Hamilton County, Ohio. The relocation equipment includes seven (7) self-supporting engineered steel poles, along with approximately 1.14 miles (6,000 feet) of new transmission line conductor. The project also includes work on steel lattice towers to the east of the Morgan Substation. Vegetation clearing for the new right-of-way is scheduled for February 2021 – March 2021. Construction is scheduled for March 2021 – December 2021. This work will improve electric service reliability by providing an additional option for routing power in the event that other transmission lines are damaged or require routine maintenance.

Letter of Notification Requirement:

This Project qualifies as a Letter of Notification filing because it meets the requirements outlined in O.A.C. 4906-6-05, Appendix A, item (1)(b). Item (1)(b) allows the filing of a Letter of Notification for "*New construction, extension, or relocation of single or multiple circuit electric power transmission line(s) or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows: (b) Line(s) greater than 0.2 miles in length but not greater than two miles in length.*"

4906-6-05(B)(2): Need for the Project

If the proposed project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

The Morgan Transmission Line Separation Project will separate the F1689 and F5783 circuits from the existing double circuit corridor and by moving the F5783 circuit into its own transmission corridor. This change will improve electric service reliability by providing an additional option for routing power in the event that other transmission lines are damaged or require routine maintenance. Ultimately, the project aims to reduce power outages and restoration times for the service area. This project will also support a new Energy Operations Center that monitors, controls, and protects the entire electric grid in Southwest Ohio. This new facility will be fed by these circuits, making the reliability of these lines critical.

4906-6-05(B)(3): Location of the Project Relative to Existing or Proposed Lines

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

The location of the Project is depicted in Attachment A – Project Details. Figure 1 shows the general project vicinity depicted on a USGS quadrangle topographic map. Figure 2 depicts the planned transmission line location, compared to existing transmission lines in the Project vicinity and additional details depicted on an aerial imagery map.

4906-6-05(B)(4): Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

The relocation of F5783 was determined by a 2017 Route Selection Study. The Route Selection Study's objective was to select the best transmission line route using industry-accepted methodology with the goal of avoiding or minimizing adverse environmental and social impacts, to the extent practical, while considering technical and economic feasibility. The Route Selection Study involved the acquisition and evaluation of environmental, land use, cultural, and engineering data to develop several route segments that could be combined to create various route options for comparative analysis and ranking to meet the Project's objective within the Project Study area. Of four (4) proposed route options, a preferred route was selected that best balanced the feasibility of construction and long-term maintenance while minimizing ecological impacts and impacts to residences and landowners. The selected route was publicly announced in April 2017.

4906-6-05(B)(5): Public Information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

The Morgan Transmission Line Separation Project will be located within new easements and existing property owned by Duke Energy Ohio. Property owners within 500 feet of the substation and transmission line were notified via informational postcard, mailed on June 15, 2018, with with respect to the relocation and other upgrades to the circuit F5783 transmission line. The relocation of circuit F5783 was determined by the 2017 Route Selection Study involving the acquisition and evaluation of environmental, land use, cultural, and engineering data and also invited public input to help determine the best location for the project route. Further information on the ongoing status of this project and other Duke Energy Projects can be found at the following website: https://www.duke-energy.com/our-company/about-us/electric-transmission-projects.

4906-6-05(B)(6): Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction is planned to begin February 2021, pending approval of this Letter of Notification. The Project is anticipated to be completed and in-service by December 2021.

4906-6-05(B)(7): Area Map

The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Attachment A – Project Details depicts the general location of the Project. Figure 1 shows the general Project vicinity depicted on a USGS quadrangle topographic map. Figure 2 shows the planned transmission line location and additional details depicted on an aerial imagery map.

4906-6-05(B)(8): Property Owner List

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

The Morgan Transmission Line Separation Project is partially located on property owned by Duke Energy Ohio. It also crosses seven (7) additional property owners' land that had existing easements and/or require new easements. The installation of one (1) steel pole structure (Str. HL504) and one (1) span of conductor to relocate the F5783 transmission line from the Morgan Substation to the existing F9748 transmission line is located within the existing transmission line easement. Property owners have been notified as discussed

above. Existing easements have been negotiated and all were signed by December 4, 2020, for the following parcel numbers:

Parcel Number:	Parcel Number:
63001700031	63001400097
63001800052	63001400119
63001400123	

The Project will include an aerial crossing of Interstate 275 (I-275; State of Ohio property; Parcel 63001400093). Duke will coordinate with the Ohio Department of Transportation for this crossing and for the necessary lane closures or delays during active crossing activities. Activities will also occur within Duke's existing transmission line easements (Parcel 63001700014).

4906-6-05(B)(9): Technical Features of the Project

The applicant shall describe the following information regarding the technical features of the project:

The materials required for this Project include seven (7) self-supporting engineering steel poles, along with approximately 6,000 feet of new conductor. The Project also includes overhead work on steel lattice towers to the east of the Morgan Substation. General transmission line alignment and structure locations are provided in Attachment A – Project Details, Figure 2.

4906-6-05(B)(9)(a): Operating Characteristics

The applicant shall provide operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

Voltage:	138kV
Structure Type:	Seven (7) self-supporting engineered steel poles with approximate 8 ft. concrete foundations.
Conductors:	1.14 miles (6,000 feet) of conductor (954 kcmil ACSS 54x7 "CARDINAL")
Height:	110 feet to 180 feet
Static Wire:	Optical Ground Wire (AC99/669-27 OPGW)
Insulators:	138kV Glass insulators
ROW Land Requirements:	New easements for construction, operation and maintenance of the structures and transmission line have been obtained with regard to parcel numbers outlined in section 4906-6-05(B)(8).

4906-6-05(B)(9)(b): Electric and Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

There are no occupied residences or institutions within one hundred feet of the proposed lines in this Project. Therefore, this section is not applicable.

4906-6-05(B)(9)(c): Estimated Cost

The estimated capital cost of the project.

The approximate cost for the proposed Morgan Transmission Line Separation Project is approximately $6,000,000.

4906-6-05(B)(10): Social and Ecological Impacts

The applicant shall describe the social and ecological impacts of the project:

4906-6-05(B)(10)(a): Land Uses

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The Project is in Whitewater Township, Hamilton County, Ohio, approximately 23 miles northwest of Cincinnati. Whitewater Township, which covers 26.3 square miles, contains a population of 5,519 people based on the 2010 census data. The land use immediately surrounding the Project Area is predominantly agricultural, residential, commercial, industrial, and forested land uses.

4906-6-05(B)(10)(b): Agricultural Land

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

No agricultural lands exist within the new and existing Duke Energy Ohio easements.

4906-6-05(B)(10)(c): Archaeological or Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

The Ohio History Connection, Ohio's Historic Preservation Office (OHPO) online mapping system, was consulted to identify previously recorded cultural resources within 1.6 km (1 mi) of the Project Area (the Study Area). The OHPO records check indicates that thirty historic structures (see table of previously mapped historic structures) and three historic cemeteries (Minges Farm Cemetery-OGSID 4713, Owry/Oury-Kilby Cemetery-OGSID

4772, and Karr Cemetery-OGSID 4769) have been previously recorded in the Study Area. There are three recorded archaeological sites within the one-mile buffer (HA0348, HA0511, and HA0075). Three Phase I archaeological surveys completed by others were done within the Study Area (NADB 11223, 11247 and 14957). The NADB 11223 was an Archaeological Assessment of the Proposed Relocation of the Channel of the Dry Fork of the Whitewater River (No. 85-OH-157) in Whitewater Township, Hamilton County, Ohio. The NADB 11247 was a Literature Review and Reconnaissance Survey of the Proposed Texas Eastern Products Pipeline Company, Limited Partnership Pipeline in Whitewater and Miami Townships, Hamilton County, Ohio and Boone County, Kentucky. The NADB 14957 was a Phase I Cultural Resources Survey of Selected Portions of a Proposed Fiber-Optic Communications Corridor, Whitewater and Crosby Townships, Hamilton County, and Morgan Township, Butler County, Ohio. None of these resources are listed on the National Register of Historic Places (NRHP). None of these resources are located within the Project Area footprint.

It does not appear that a Federal Nexus, requiring further coordination with the OPHO, will occur for the Project, as there are likely no impacts to wetlands or streams that would require Federal permitting.

It does not appear that impacts to significant cultural resources will occur as a result of the Project. The minimal impacts associated with the Project do not warrant additional cultural resource surveys based on the proposed scope of work.

4906-6-05(B)(10)(d): Local, State, and Federal Requirements

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

As the Project is expected to disturb greater than one acre, a National Pollutant Discharge Elimination System (NPDES) Construction Site General Permit from the Ohio Environmental Protection Agency (Ohio EPA) for the relocation is required.

There is one (1) proposed structure (503) to be constructed within a regulatory floodway. A "No-Rise" Certification and a Special Flood Hazard Area Development Permit Application will be submitted to the Department of Planning and Development of Hamilton County for impacts and construction activities that will occur within the floodplain of Dry Fork Creek. Approval will be obtained by the Local Floodplain Administrator in Hamilton County.

The Project is not anticipated to impact the streams located within the Project Area; however, if the proposed access changes during construction and minor impacts are deemed necessary during construction activities, the stream crossings will be constructed within the regulatory limits outlined under the Nationwide Permits from the USACE and Ephemeral Stream Permit from Ohio EPA as impacts would be limited to less than 300 linear feet of impact to streams within the Project Area.

Current construction access plans are designed to fully avoid impacts to federal and state regulated water resources by accessing the proposed construction corridor through Ohio Department of Transportation (ODOT) Limited Access Right-of-Way (LA ROW) from Interstate-275 (I-275). Duke is currently in discussions with ODOT to gain permission to work with ODOT's LA ROW. These preferred access routes for the Project are in full avoidance of any streams and wetlands within the Project area. Any deviations from current access plans will attempt to stay full avoidance but utilizing clear span bridging of any necessary stream crossings and routing access around wetlands. At this time, no other local, state, or federal permit or other authorizations are required for the Project. However, proper water resource impact permits will be obtained if unavoidable stream and/or wetland impacts are determined necessary due to the change of proposed access route.

4906-6-05(B)(10)(e): Endangered, Threatened, and Rare Species Investigation

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Coordination with the U.S. Fish and Wildlife Service (USFWS) was initiated on January 23, 2019, in an effort to identify the Project's potential effect on any federally listed threatened or endangered species or critical habitat within a one-mile radius of the Study Area. A response from USFWS was received February 19, 2019, regarding RTE species located within the Study Area vicinity. The response from USFWS indicated three (3) federally listed endangered, threatened, or candidate species, or their habitats, could potentially exist within the Project site or vicinity. A copy of the USFWS response can be found in Attachment B – Rare, Threatened, and Endangered Species Correspondence and is summarized below.

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. It is recommended by USFWS that any clearing of trees should occur between October 1 and March 31 in order to avoid incidental take of these species. Tree clearing will occur within this seasonal clearing timeframe (February 2021 - March 2021, pending approval of this Letter of Notification), thus it is anticipated that there will be no adverse effect to these bat species.

Also, the proposed Project lies within the range of running buffalo clover (*Trifolium stoloniferum*), a federally listed endangered species. A known location of this plant occurs within 2 miles of the proposed Project Area. If suitable habitat is present within the project site, it is recommended by USFWS that surveys for this species be conducted by a trained

botanist in May or June when the plant is in flower. GAI did not note any suitable habitat during field review as noted in Section 4906-6-05(B)(10)(f). According to USFWS, due to the project type, size, and location, there are no anticipated adverse effects to any other federally endangered, threatened, proposed, or candidate species.

Additionally, a request was submitted to the ODNR Environmental Review Program on January 23, 2019, in an effort to identify the Project's potential effect on any state-listed threatened or endangered species or critical habitat within the vicinity of the Study Area. A response from ODNR – Division of Wildlife (DOW) was received on March 9, 2019.

The ODNR-DOW noted the presence of the state-endangered Indiana bat within the vicinity of the Project area and recommended the same seasonal tree clearing timeframe as the USFWS. ODNR-DOW also indicated that the Project is within the range of thirteen (13) state endangered and three (3) state threatened mussel species as well as five (5) state endangered and six (6) state threatened fish species and one (1) state threatened crayfish species. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not going to impact these species. ODNR-DOW also indicated that the Project is within range of one (1) state threatened reptile, one (1) state-endangered amphibian, and two (2) state endangered bird species. Due to the location, the type of habitat present at the Project site and within the vicinity of the Project area, and the type of work proposed, this Project is not likely to impact these species. This response can be found in Attachment B – Rare, Threatened, and Endangered Species Correspondence and is summarized below.

4906-6-05(B)(10)(f): Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

As a part of the investigation, GAI also conducted an investigation for areas of ecological concern. As a part of GAI's investigation, a request was submitted to the ODNR Natural Heritage Program on January 23, 2019, to research the presence of any unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forest, national wildlife refuges, or other protected areas within one mile of the Project area, using the ODNR Natural Heritage Database.

A response from the ODNR – Office of Real Estate was received on March 9, 2019, indicated that there are no unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, or other protected areas within one mile of the Project Area. These unique ecological sites can be found in Attachment B – Rare, Threatened, and Endangered Species Correspondence.

As a part of the field investigation and ecological assessment, GAI conducted a Regulated Waters Assessment of the Project Area. GAI's investigation included approximately 1.0-mile by 150-foot wide Study Area around the proposed centerline, access roads, and additional workspace areas. During the investigation, GAI identified four (4) likely jurisdictional regulated waters within the Project's Study Area and two (2) likely jurisdictional ponds are located adjacent to the study area to the north and to the south. No impacts to regulated waters or RTE habitat are anticipated by the Project. Results from GAI's field investigation can be found in Attachment C – Wetland Delineation and Stream Identification Report (WDSIR).

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) revealed that a portion of the Project Area lies within the 100-year floodplains and/or floodway of the Dry Fork Whitewater River. There is one (1) proposed structure to be constructed within a regulatory floodway.

4906-6-05(B)(10)(g): Other Information

Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

To the best of Duke Energy Ohio's knowledge, no unusual conditions exist that would result in environmental, social, health, or safety impacts. Construction and operation of the proposed Project will meet all applicable safety standards established by the Occupational Safety and Health Administration (OSHA) and will be in accordance with the requirements specified in the latest revision of the NESC, as adopted by the Public Utilities Commission of Ohio.

4906-6-07: SERVICE AND PUBLIC DISTRIBUTION OF ACCELERATED CERTIFICATE APPLICATIONS

Copies of this Letter of Notification have been sent to the appropriate public officials for Whitewater Township and Hamilton. Additional copies of this Letter of Notification will be made available at the Miami Township Branch Library. Information on how to request an electronic or paper copy of the Letter of Notification as well as additional information on the ongoing status of this project and other Duke Energy Projects can be found at the following website: https://www.duke-energy.com/Morgan.

4906-6-08: Public notice for letter of notification applications

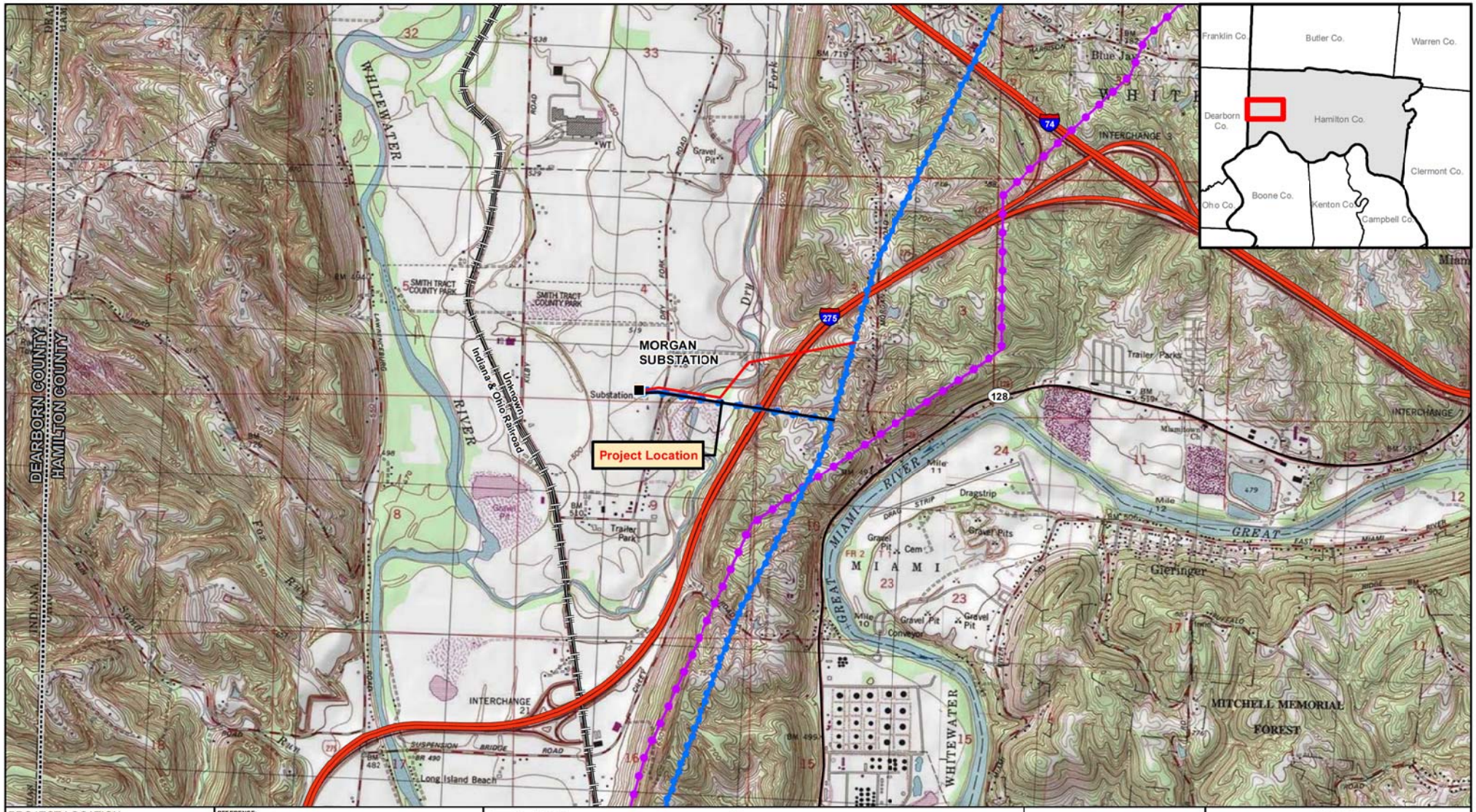
A newspaper notice will be provided in the Cincinnati Enquirer within 7 days of filing this application, consisting of no less than a fourth of a standard page. Similarly, proof of publication within 30 days of the date of publication will be provided.

Within seven days of filing this Letter of Notification, notice will be sent to each property owner affected by the Project, with a description of the project, a map showing the location and layout of the Project, the location of where accessible copies of this LON are available, and a statement including the assigned docket number that this LON is now

pending before the board. This letter will also describe how to participate and comment in the board's proceedings.

ATTACHMENT A

Project Details



PROJECT LOCATION

HAMILTON COUNTY, OH

REFERENCE:
TOPOGRAPHIC MAP:
- Esri's USA Topo Map. Accessed: 12/15/2020.

COUNTY BOUNDARY:
- Indiana Geological Survey's County Boundaries of Indiana, 6/21/2002.

INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.

RAILWAY:
- Ohio Department of Transportation's Railroads, 9/11/2018.

PROJECT DETAILS:
- Duke Energy.

- Interstate Highway
- State Highway
- Railway
- County Boundary
- Existing 138 kV Transmission Line
- Existing 345 kV Transmission Line
- Existing Facility
- Existing Transmission Line
- Planned Transmission Line

DUKE ENERGY.

gai consultants

0 1,000 2,000 Feet

1 in = 2,000 feet

FIGURE 1
PROJECT LOCATION

Ohio Power Siting Board Letter of Notification

Morgan 138 kV Transmission Line Circuit Separation

DRAWN BY: PPD DATE: 12/15/2020
CHECKED: TDB APPROVED: MRW

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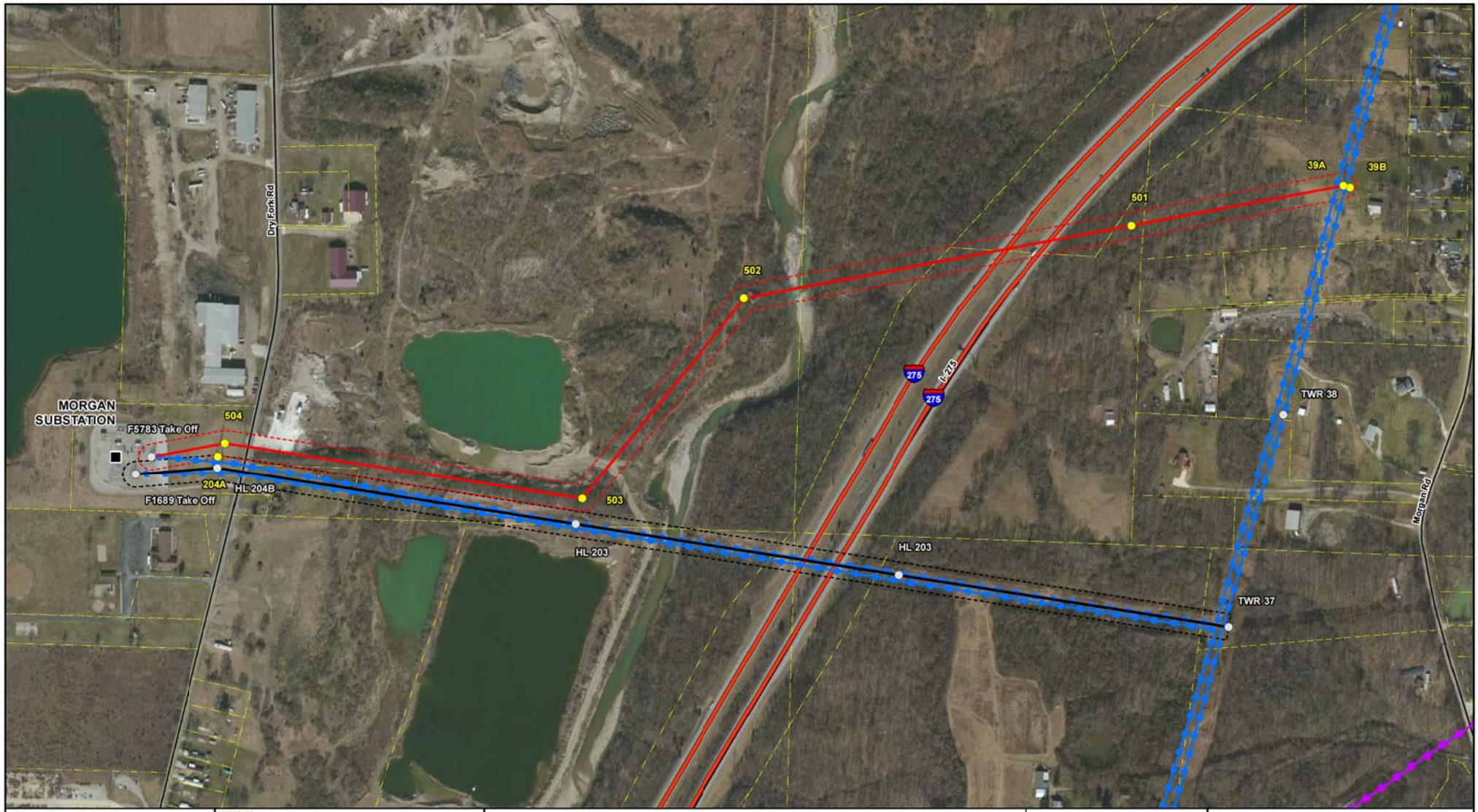

PROJECT LOCATION

HAMILTON COUNTY, OH

REFERENCE:
AERIAL PHOTOGRAPH:
- Esri's World Imagery, 2018, Accessed: 12/15/2020
INTERSTATE AND HIGHWAY:
- Esri's U.S. Major Roads, 5/10/2018.
LOCAL ROAD:
- Ohio Department of Transportation's Roads, 2018.
PARCEL BOUNDARY:
- Downloaded from Cincinnati Area Geographic Information System (CAGIS) FTP, 7/09/2019.
DELINEATED FEATURE:
- GAI Consultants
PROJECT DETAILS:
- Duke Energy

Interstate Highway
State Highway
Local Road
Existing Facility
Existing Structure
Proposed Structure
Existing Transmission Line
Planned Transmission Line
Approximate ROW - Existing
Approximate ROW - Proposed
Existing 138 kV Transmission Line
Existing 345 kV Transmission Line
Parcel Boundary

DUKE ENERGY.

gai consultants

0 175 350 Feet
1 in = 350 feet

FIGURE 2
PROJECT LAYOUT

Ohio Power Siting Board Letter of Notification

SHEET 1 of 1

Morgan 138 kV Transmission Line Circuit Separation

DRAWN BY: PPD DATE: 12/15/2020
CHECKED: TDB APPROVED: MRW

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ATTACHMENT B

Rare, Threatened, and Endangered Species Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

October 31, 2019

Tyler Rankin
GAI Consultants
1830 Airport Exchange Blvd, Suite 220
Erlanger, KY

TAILS# 03E15000-2019-TA-0652

Re: Duke Energy, Morgan 5783 Relocation Project, Hamilton County, Ohio

Dear Mr. Rankin,

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

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

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

The proposed project lies within the range of **running buffalo clover** (*Trifolium stoloniferum*), a federally listed endangered species. This plant can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance. If suitable habitat is present, we recommend that surveys for this species be conducted by a trained botanist in May or June when the plant is in flower. The survey must be coordinated with this office in advance.

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

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

Sincerely,

Patrice Ashfield
Ohio Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Ohio Department of Natural Resources
MIKE DeWINE, GOVERNOR MARY MERTZ, DIRECTOR

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

March 8, 2019

Tyler Rankin
GAI Consultants, Inc.
3720 Dressler Road NW
Canton, Ohio 44718

Re: 19-101; Environmental Review Request - Duke Energy Morgan 5783 Relocation Project

Project: The proposed Project involves the relocation of the separation and relocation of the F5783 existing transmission line from the existing F1689 line to newly acquired 100-foot wide right-of-away.

Location: The proposed project is located in Whitewater Township, Hamilton 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 the following records at or within a one-mile radius of the project area:

Pale umbrella-sedge (*Cyperus acuminatus*), P
Northern madtom (*Noturus stigmosus*), E
Sloan's crayfish (*Orconectes sloanii*), T

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. This information is provided to inform you of features present within your project area and vicinity.

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.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added

to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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 vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. 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 no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the sheepnose (*Plethobasus cyphyus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the ebonyshell (*Fusconaia ebena*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the butterfly (*Ellipsaria lineolata*), a state endangered mussel, the washboard (*Megalonaias nervosa*), a state endangered mussel, the elephant-ear (*Elliptio crassidens crassidens*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the monkeyface (*Quadrula metanevra*), a state endangered mussel, the wartyback (*Quadrula nodulata*), a state endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, and the threehorn wartyback (*Obliquaria reflexa*), 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 shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the shoal chub (*Macrhybopsis hyostoma*), a state endangered fish, the shovelnose sturgeon (*Scaphirhynchus platorynchus*), a state endangered fish, the lake sturgeon (*Acipenser fulvescens*), a state endangered fish, the northern madtom (*Noturus stigmosus*), a state endangered fish, the bigeye shiner (*Notropis boops*) a state threatened fish, the mountain madtom (*Noturus eleutherus*), a state threatened fish, the river darter (*Percina shumardi*) a state threatened fish, the channel darter (*Percina copelandi*), a state threatened fish, the blue sucker (*Cycleptus elongatus*),

a state threatened fish, and the paddlefish (*Polyodon spathula*) a state threatened fish. 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 meadows and other wetlands. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, 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 habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the lark sparrow (*Chondestes grammacus*), a state endangered bird. This sparrow nests in grassland habitats with scattered shrub layers, disturbed open areas, as well as patches of bare soil. In the Oak Openings area west of Toledo, lark sparrows occupy open grass and shrubby fields along sandy beach ridges. These summer residents normally migrate out of Ohio shortly after their young fledge or leave the nest. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

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

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 Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

John Kessler
Environmental Services Administrator

ATTACHMENT C

Wetland Delineation and
Stream Identification Report (WDSIR)

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Wetland Delineation and Stream Identification Report

Duke Energy
Morgan 5783 Relocation Project
Hamilton County, Ohio

GAI Project Number: D181119.00

Duke Energy Project Numbers: DOH1645

October 2019

DUKE ENERGY®

Wetland Delineation and Stream Identification Report

Duke Energy
Morgan 5783 Relocation Project
Hamilton County, Ohio

GAI Project Number: D181119.00
Duke Energy Project Numbers: DOH1645

October 2019

Prepared for:
Duke Energy
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Table of Contents

1.0 Introduction

Duke Energy (Duke) Duke Energy proposes to separate the F1689 and F5786 circuits and relocate the F5786 circuit to a new transmission corridor north of the existing double-circuit corridor, from the Morgan Substation, as a part of the 5783 Relocation Project (Project) located in Whitewater Township, Hamilton County, Ohio. The Project will consist of approximately 1.0-mile of new 138 kV transmission line on new and existing Duke Energy right-of-way (ROW) spanning five (5) new overhead support structures. The project will also include the separation of the F5786 line from existing two structures (HL 203 and TWR 37) in the existing ROW of the F1689/F5783 line **(Figure 1, Project Vicinity)**.

GAI Consultants, Inc. (GAI), on behalf of Duke Energy, conducted wetland delineations and stream investigations of the Project study areas on December 11, 2018 and August 6, 2019. GAI identified approximate boundaries of wetlands and waterbodies located within the vicinity of a 27.63-acre study area that includes the existing and proposed transmission line right-of-way (ROW), equipment storage areas, and proposed access roads. This report describes the methods and results of the environmental field survey within the Project study areas.

2.0 Methods

The study area was investigated for the presence of wetlands and streams on December 11, 2018 and August 6, 2019. Wetland delineations were conducted in accordance with the 1987 United States Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (USACE, 2012). Wetlands were classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al, 1979). Classification of the indicator status of vegetation is based on *The National Wetland Plant List:* 2014 Update of Wetland Ratings (Lichvar, et al, 2014).

The growing season in the Project area is generally between March and November in Hamilton County, Ohio (United States Department of Agriculture, Natural Resource Conservation [USDA-NRCS], 2014). Field observations were supplemented with an intensive review of United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, USDA-NRCS soils mapping, historical aerial photography (Google Earth), and local landscape topography/morphology to provide a determination of wetlands present within the study area. Professional judgment was used to determine whether hydrophytic vegetation and hydric soils existed within the identified wetlands if onsite data was ambiguous.

Each wetland and waterbody feature was given a unique map designation and each boundary flag location was recorded using a Trimble GEO XH model global positioning system mapping grade unit with the capability of sub-meter accuracy. Judgmental upland and wetland soil test pits were taken within the study area at the discretion of the delineator to confirm the presence or absence of wetlands in areas with exhibiting wetland indicators. Wetland boundaries, stream banks and/or centerlines were mapped in relation to existing Project data supplied by Duke and various environmental and cadastral background data in Geographical Information Systems (GIS).

3.0 Regulatory Discussion

3.1 Waters of the United States

"Waters of the U.S." are within the jurisdiction of the USACE under the Clean Water Act (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 waterbodies 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).

The USACE will assert jurisdiction over traditionally navigable waters (TNWs), adjacent wetlands, and non-navigable tributaries of TNWs 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.

3.2 Waters of the State

"Waters of the State" are within the jurisdiction of the Ohio EPA (OEPA) Division of Surface Water. They are generally defined as streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and other bodies or accumulation of water, surface and underground, natural or artificial, regardless of the depth of the strata in which underground water is located, that are situated wholly or partly within or border upon this state or are within its jurisdiction. In addition to "Waters of the U.S.," the OEPA also regulates and issues permits for isolated wetland impacts. The State relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

The 401 Water Quality Certification for Nationwide Permit Eligibility Web Map (2017 Reissuance) was used to determine stream eligibility coverage under the 401 Water Quality Certification (WQC) for the 2017 Nationwide Permits (NWPs). Furthermore, the map was used to identify any ineligible areas that may require a CWA Section 401 individual permit from the OEPA should stream impacts occur within the Project area (OEPA, 2017) **(Figure 3, Stream Eligibility)**.

4.0 Results

Project study area topography primarily consists of rural residential, mature upland forest, and commercial and light industrial land uses within the Kentucky Bluegrass Major Land Resource Area (MLRA; USDA-NRCS, 2006). Land use within and adjacent to the study area consists primarily of disturbed transmission line ROW, upland forest, rural residential areas, riparian corridor, commercial, and industrial land uses.

The Project study area crosses the following 12-digit United Stated Geological Survey Hydrologic Unit Code (HUC) watersheds **(Figure 1, Project Vicinity)**:

Lee Creek-Dry Fork Whitewater Creek (HUC 050800030809)
Jameson Creek-Whitewater River (HUC 050800030810)
Jordan Creek-Great Miami River (HUC 050800020906)

The USFWS's NWI was reviewed for potential wetland locations. The NWI maps were prepared from high altitude photography and in most cases, were not field verified. As a result, wetlands are sometimes erroneously identified, missed, or misidentified within this data set. The presence of an NWI

wetland does not necessarily constitute the presence of a wetland meeting USACE criteria. The NWI map of the area (**Figure 2, Resource Location, Sheet Index**) identified two NWI feature crossed by the study area. The NWI classifications crossed by the study area are both Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded (R2UBH).

One likely jurisdictional wetland Palustrine Emergent (PEM) wetland totaling 0.013 acres, was identified within the Project Study Area. Additionally, two (2) likely jurisdictional waterbodies totaling 17.71 acres were identified adjacent to the project study area, to the north and south and were documented for reference. The location of the identified wetlands and waterbodies can be found in **Figure 2, Resource Location**.

As regulated by Ohio Administrative Code (OAC) rules 3745-1-50 through 3745-1-54, wetlands were also evaluated using the Ohio Rapid Assessment Method (ORAM) to determine the appropriate wetland category. Any wetland score that fell within a gray zone between categories was scored one of two ways. Either the wetland was assigned to the higher of the two categories or it was assessed using a non-rapid method to determine its quality (Mack, 2001). The category assigned to a particular wetland determines the requirement, if any, for additional levels of protection administered by the OEPA.

To evaluate potential streams within the study area, GAI reviewed existing United States Geological Survey (USGS) topographic maps, aerial photography, National Hydrography Dataset (NHD) stream data, and site contour data. Eleven (11) likely jurisdictional streams totaling 1,727 feet (865 feet Perennial [two individuals], 264 feet Individual [three individuals], and 598 feet Ephemeral [six individuals]), were identified within the study area. Locations of the identified streams can be found in **Figure 2, Resource Location**.

As regulated by OAC Chapter 3745-1-17 and Section 401 WQC, streams with proposed permanent and/or temporary impacts were also assessed according to OEPA guidance using either the Headwater Habitat Evaluation Index (HHEI) for watersheds less than one square mile in size, or the Qualitative Habitat Evaluation Index (QHEI) for watersheds between one and 20 square miles in size.

All stream segments within the Project Study Area are located in an ineligible area for coverage under the 401 WQC for NWPs (**Figure 3, Stream Eligibility**). No identified streams within the study area were identified as USACE Section 10 navigable.

In addition to the jurisdictional streams identified, all roadside ditches and other surface drainages within the study area were also evaluated for consideration as jurisdictional Waters of the U.S. with respect to the Clean Water Act Rule [40 CFR 230.3(3)(iii)]. Jurisdictional ditches must meet the definition of tributary, have an OHWM, and flow directly or indirectly through another water to a TNW. Likely jurisdictional ditches include: ditches with perennial flow; ditches with intermittent flow that drain wetlands; or ditches, regardless of flow, that are excavated in or relocate a tributary. Jurisdictional wetlands may be present within, or connected to another jurisdictional Waters of the U.S. in regard to significant nexus analysis through, non-jurisdictional ditches or surface drainages. Multiple roadside ditches and swales were observed throughout the study area, however, none of the roadside ditches or other drainages would be considered jurisdictional or likely jurisdictional within the study area. These features were excavated in upland soils to convey upland drainage and had no defined bed and bank or flow regime to constitute a Waters of the U.S. designation. Locations of these non-jurisdictional features can be found in **Figure 2, Resource Location**.

The identified wetlands/waterbodies and streams are summarized in **Tables 1** and **2**, respectively. Color photographs of each feature accompany these tables. Wetland data forms and upland data forms

corresponding with the identified wetlands are provided in **Appendices A and B**, respectively. OEPA ORAM forms can be found in **Appendix C**. Soil map units within the study area are provided in **Appendix D** and **Figure 2, Resource Location**.

5.0 Conclusions

Wetland delineations and stream investigations of the Duke Energy Morgan 5783 Relocation Project were conducted on December 11, 2018 and August 6, 2019 within a 27.63-acre study area that includes the existing transmission line ROW, proposed equipment storage areas, and proposed access roads. Eleven (11) likely jurisdictional streams and one (1) likely jurisdictional wetland were identified within the project study area.

All statements in this document pertaining to the jurisdictional status of wetlands and streams and open waters with regard to USACE and state regulations represent the opinion of GAI and are based on present USACE guidance. The jurisdictional status of these features may be confirmed a USACE Jurisdictional Determination and/or by state agencies.

6.0 References

Cowardin, D. M., V. Carter, F. C. Golet, and E. T. La Roe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. United States Department of the Interior, Fish and Wildlife Service. Publication No. FWS/OBS-79/31. Washington, D.C.

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Mack, John J. 2001. Ohio Rapid Assessment Methods for Wetlands Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.

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United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2017. *Field Office Technical Guide, WETS Climatic Data.* Available at http://efotg.sc.egov.usda.gov/treemenuFS.aspx. Accessed October 2019.

United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2006. *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific.* U.S. Department of Agriculture Handbook, 296.

United States Fish and Wildlife Service. 2015. National Wetlands Inventory for Ohio GIS Polygon Shapefiles. Available from http://www.fws.gov/wetlands/Data/State-Downloads.html. Accessed October 2019.

TABLE 1
Wetlands and Open Waters Identified Within the Project Study Area

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Table 1
Wetlands and Open Waters Identified Within the Project Study Area

Feature Designation[1]	Latitude[2]	Longitude[2]	Cowardin Classification[3]	NWI Wetland Classification[4]	Open Ended[5]	Approximate Size (acres)[5]	Within a FEMA Designated Floodplain[6]	"Waters of the U.S."[7]	ORAM Score/ Category
Wetland A	39.203911	-84.760661	PEM	N/A	No	0.013	No	Yes	16.5
Open Water-001	39.206139	-84.769039	PUB	Yes	Yes	0.00	Yes	Yes	N/A
Open Water-002	39.203190	-84.768648	PUB	No	Yes	0.00	Yes	Yes	N/A
Total Wetland Acreage within Study Area						**0.013**			

Notes:

1 GAI map designation.

2 Decimal degrees; Coordinates provided in NAD 83.

3 Palustrine system wetlands were classified as emergent (PEM).

4 National Wetlands Inventory (NWI) wetland as mapped by the United States Fish and Wildlife Service.

5 Extent of wetland within study area. Wetland may extend beyond these limits if noted as open ended. An acreage of zero indicates a wetland was delineated but existed entirely outside the study area.

6 Wetlands residing within the limits of a Federal Emergency Management Agency (FEMA) designated 100-year floodplain or floodway.

7 Waters of the United States (U.S.) include the following: All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: which are or could be used by interstate or foreign travelers for recreational or other purposes, from which fish or shellfish are or could be taken and sold in interstate or foreign commerce, or which are used or could be used for industrial purpose by industries in interstate commerce (33 CFR 328 and Supplementary Information).

WETLAND AND OPEN WATER PHOTOGRAPHS

Wetland and Open Water Photographs

Photograph 1. Open Water 001 – PUB, north of study area. (December 11, 2018)

Photograph 2. Open Water 002 - PUB, south of study area. (December 11, 2018)

Photograph 3. Wetland A – PEM. Facing Northwest. (August 6, 2019)

Photograph 4. Wetland A – PEM. Facing Northeast. (August 6, 2019)

TABLE 2
Streams Identified Within the Project Study Area

Table 2.

Streams Identified Within the Project Study Area

Feature Designation[1]	Latitude[2]	Longitude[2]	Name	Type	OHWM Width (feet)	OHWM Depth (feet)	BFW (feet)	BFD (feet)	TOB Width (feet)	TOB Depth (feet)	Length Within Study Area[3] (feet)	Ohio or Federal Special Listing[4,5,6,7]	Open Ended	OEPA Stream Eligibility
Stream-001	39.205111	-84.769717	UNT to Dry Fork Creek	Perennial	12	.5	13	1.5	15	2.5	285	N	Y	Ineligible
Stream-002	39.207300	-84.764968	Dry Fork Creek	Perennial	100	1.5	125	4	135	10	580	WWH[8]	Y	Ineligible
Stream-003	39.207996	-84.759848	UNT to Dry Fork Creek	Ephemeral	6	.25	7	.5	8	1.75	255	N	Y	Ineligible
Stream-004	39.208142	-84.759947	UNT to Dry Fork Creek	Ephemeral	4	.5	4.5	1	5	1.5	171	N	Y	Ineligible
Stream-005	39.209370	-84.763919	UNT to Dry Fork Creek	Intermittent	8	.5	10	.75	12	1	24	N	Y	Ineligible
Stream-006	39.208968	-84.764031	UNT to Dry Fork Creek	Ephemeral	1	.25	2	.5	3	1	21	N	Y	Ineligible
Stream-007	39.207288	-84.764486	UNT to Dry Fork Creek	Ephemeral	2	.25	4	.5	6	1	65	N	Y	Ineligible
Stream-008	39.207353	-84.763923	UNT to Dry Fork Creek	Intermittent	10	.75	12	1.5	15	2.5	185	N	Y	Ineligible
Stream-009	39.204512	-84.758774	UNT to Great Miami River	Ephemeral	1.5	.5	2	1	4	2	24	N	Y	Ineligible
Stream-010	39.203923	-84.758868	UNT to Great Miami River	Intermittent	1.5	.5	3	1	6	2	55	N	Y	Ineligible
Stream-011	39.204134	-84.761027	UNT to Great Miami River	Ephemeral	1	.25	2	.5	3	1	62	N	Y	Ineligible
Total Stream Length (feet) within Study Area											**1,727 feet**			

Notes:

[1]GAI map designation.

[2]Decimal degrees; Coordinates provided in NAD 83.

[3]Extent of stream or open water within study area. Stream or open water may extend beyond these limits if noted as open ended.

[4]USACE Navigable Streams in Ohio Listing (Section 10 Waters) Huntington District.

[5]OEPA Aquatic Life Use Designation of Exceptional Warmwater Habitat (EWH), Cold Water Habitat (CWH), Warmwater Habitat (WWH), Seasonal Salmonid Habitat (SSH), or any equivalent per OAC 3745-1-17.

[6]OEPA Antidegradation Category of Superior High Quality Water, Outstanding National Resource Water, or Outstanding State Water.

[7]ODNR Listing of State Wild and Scenic Rivers.

[8] Stream Designated as WWH per OAC 3745-1-17

STREAM PHOTOGRAPHS

Stream Photographs

Photograph 1. Stream 001, looking upstream (north). (December 11, 2018)

Photograph 2. Stream 001, looking downstream (south). (December 11, 2018)

Photograph 3. Stream 002 (Dry Fork Creek), looking upstream (northeast). (December 11, 2018)

Photograph 4. Stream 002 (Dry Fork Creek), looking downstream (south). (December 11, 2018)

Photograph 5. Stream 003, looking upstream (northeast). (December 11, 2018)

Photograph 6. Stream 003, looking downstream (southwest). (December 11, 2018)

Photograph 7. Stream 004, looking upstream (northeast). (December 11, 2018)

Photograph 8. Stream 004, looking downstream (south). (December 11, 2018)

Photograph 9. Stream 005, looking downstream (west). (August 6, 2019)

Photograph 10. Stream 005, looking upstream (east). (August 6, 2019)

Photograph 11. Stream 006, looking upstream (east). (August 6, 2019)

Photograph 12. Stream 006, looking downstream (west). (August 6, 2019)

Photograph 13. Stream 007, looking upstream (east). (August 6, 2019)

Photograph 14. Stream 007, looking downstream (west). (August 6, 2019)

Photograph 15. Stream 008, looking upstream (east). (August 6, 2019)

Photograph 16. Stream 008, looking downstream (west). (August 6, 2019)

Photograph 17. Stream 009, looking upstream (northwest). (August 6, 2019)

Photograph 18. Stream 009, looking downstream (southeast). (August 6, 2019)

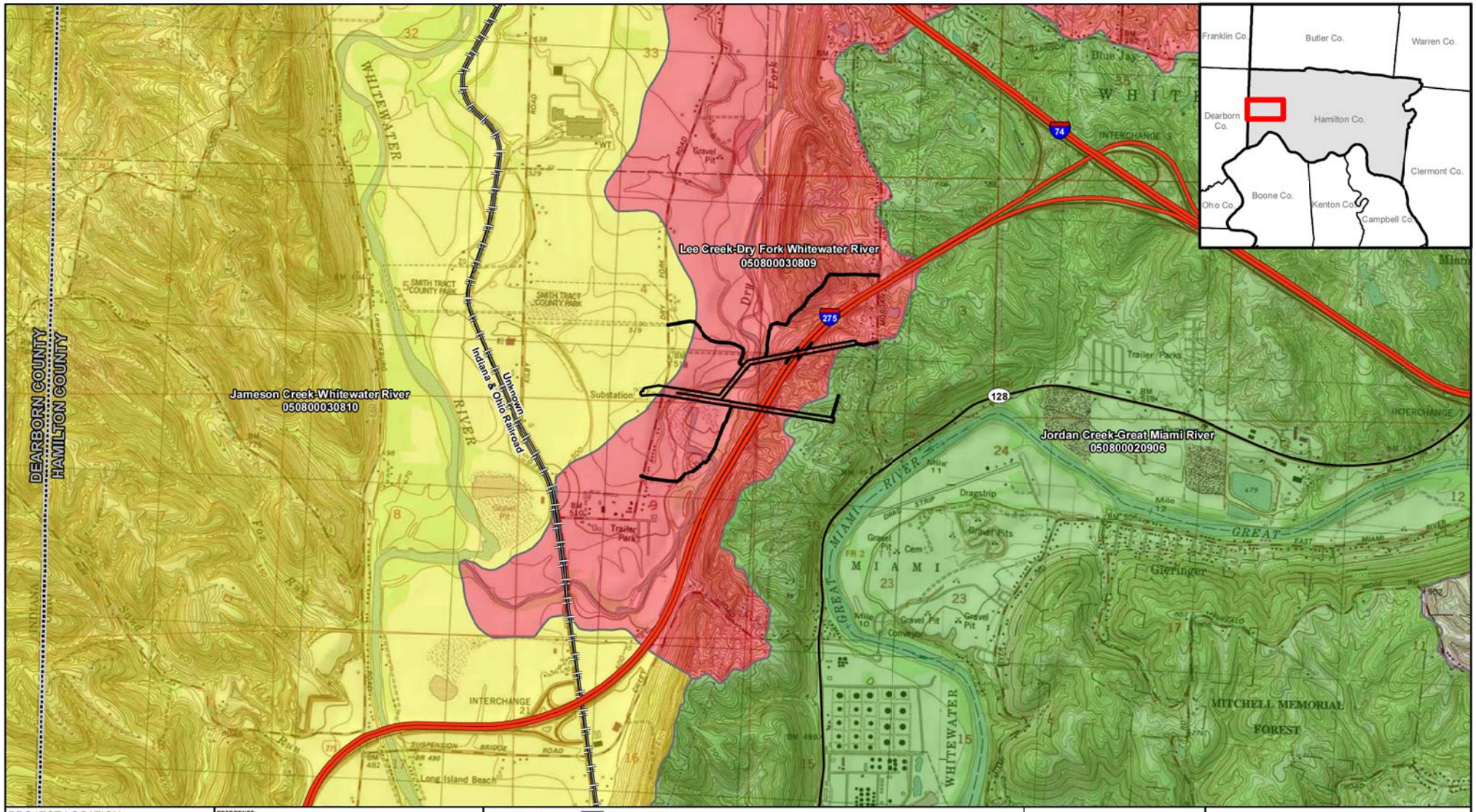
Photograph 19. Stream 010, looking upstream (west). (August 6, 2019)

Photograph 20. Stream 010, looking downstream (east). (August 6, 2019)

Photograph 21. Stream 011, looking upstream (southwest). (August 6, 2019)

Photograph 22. Stream 011, looking downstream (northeast). (August 6, 2019)

FIGURES



PROJECT LOCATION

HAMILTON COUNTY, OH

REFERENCE:
TOPOGRAPHIC MAP:
- Esri's USA Topo Map, Accessed: 12/15/2020.

COUNTY BOUNDARY:
- Indiana Geological Survey's County Boundaries of Indiana, 6/21/2002.

INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.

RAILWAY:
- Ohio Department of Transportation's Railroads, 9/11/2018.

12-DIGIT WATERSHED:
- United States Geological Survey's 12-Digit Hydrologic Units, 6/06/2018.

PROJECT DETAILS:
- Duke Energy.

Interstate Highway
State Highway
Railway
County Boundary
Study Area
Jameson Creek-Whitewater River
Jordan Creek-Great Miami River
Lee Creek-Dry Fork Whitewater River

DUKE ENERGY.

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0 1,000 2,000 Feet
1 in = 2,000 feet

FIGURE 1
PROJECT VICINITY

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/15/2020
CHECKED: TDB APPROVED: MRW

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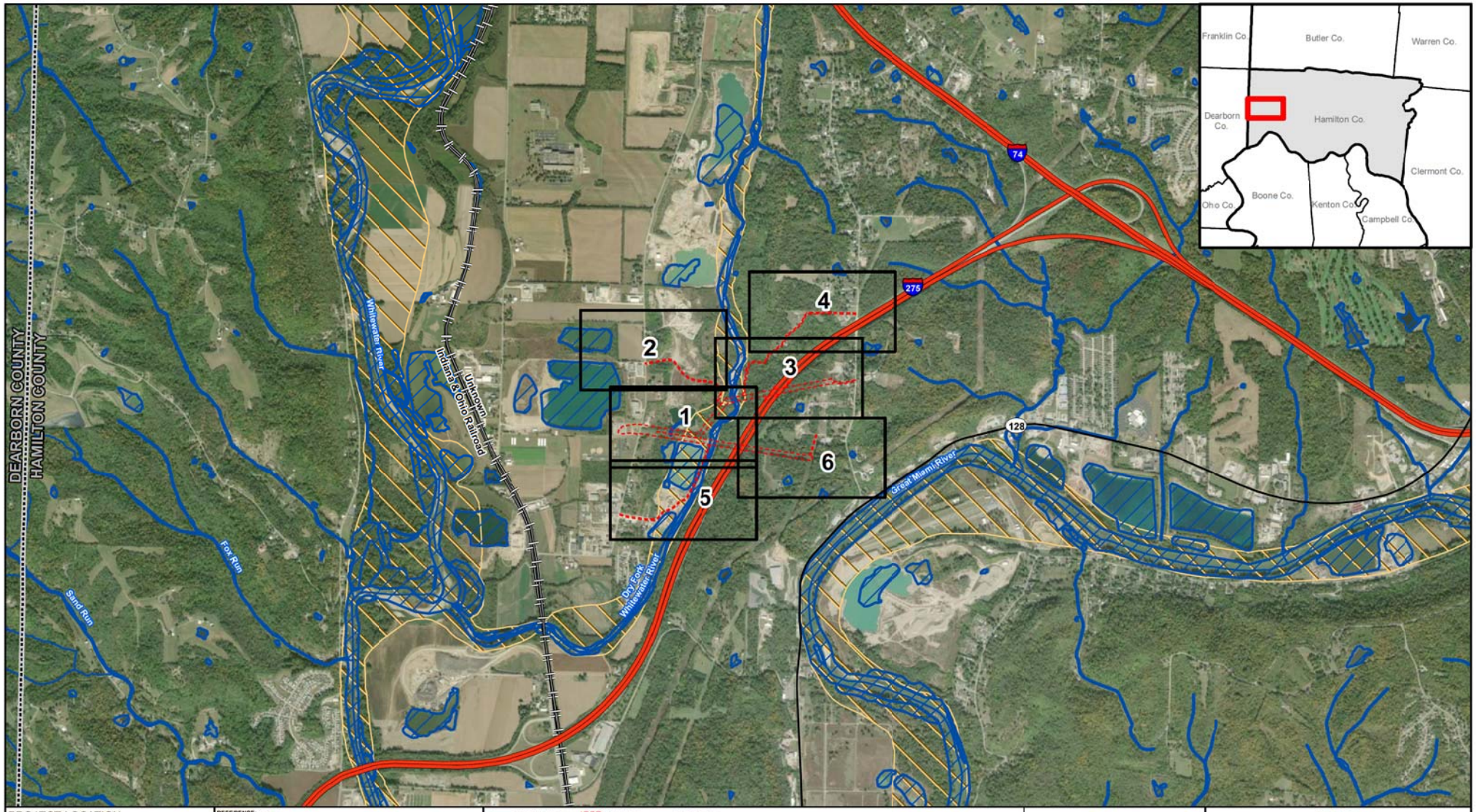

PROJECT LOCATION

HAMILTON COUNTY, OH

REFERENCE:
AERIAL PHOTOGRAPH
- ESRI's World Imagery, Accessed: 12/17/2020.

COUNTY BOUNDARY
- Indiana Geological Survey's County Boundaries of Indiana, 6/21/2002.

INTERSTATE AND HIGHWAY
- ESRI's USA Major Roads, 05/10/2018.

NHD FLOWLINE
- U.S. Geological Survey's National Hydrography Dataset, 2018.

NWI WETLAND
- United States Fish and Wildlife Service's National Wetland Inventory, 10/15/2018.

FLOODPLAIN AND FLOODWAY
- FEMA's Floodplains and Flood Hazard Zones, 2018.

PROJECT DETAILS:
- Duke Energy.

Interstate Highway
State Highway
Railway
County Boundary
Study Area
Sheet Index
NHD Flowline
NWI Wetland
100-Year Floodplain
Floodway

DUKE ENERGY.

gai consultants

0 1,000 2,000 Feet
1 in = 2,000 feet

FIGURE 2
RESOURCE LOCATION

SHEET INDEX

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/17/2020
CHECKED: TDB APPROVED: MRW

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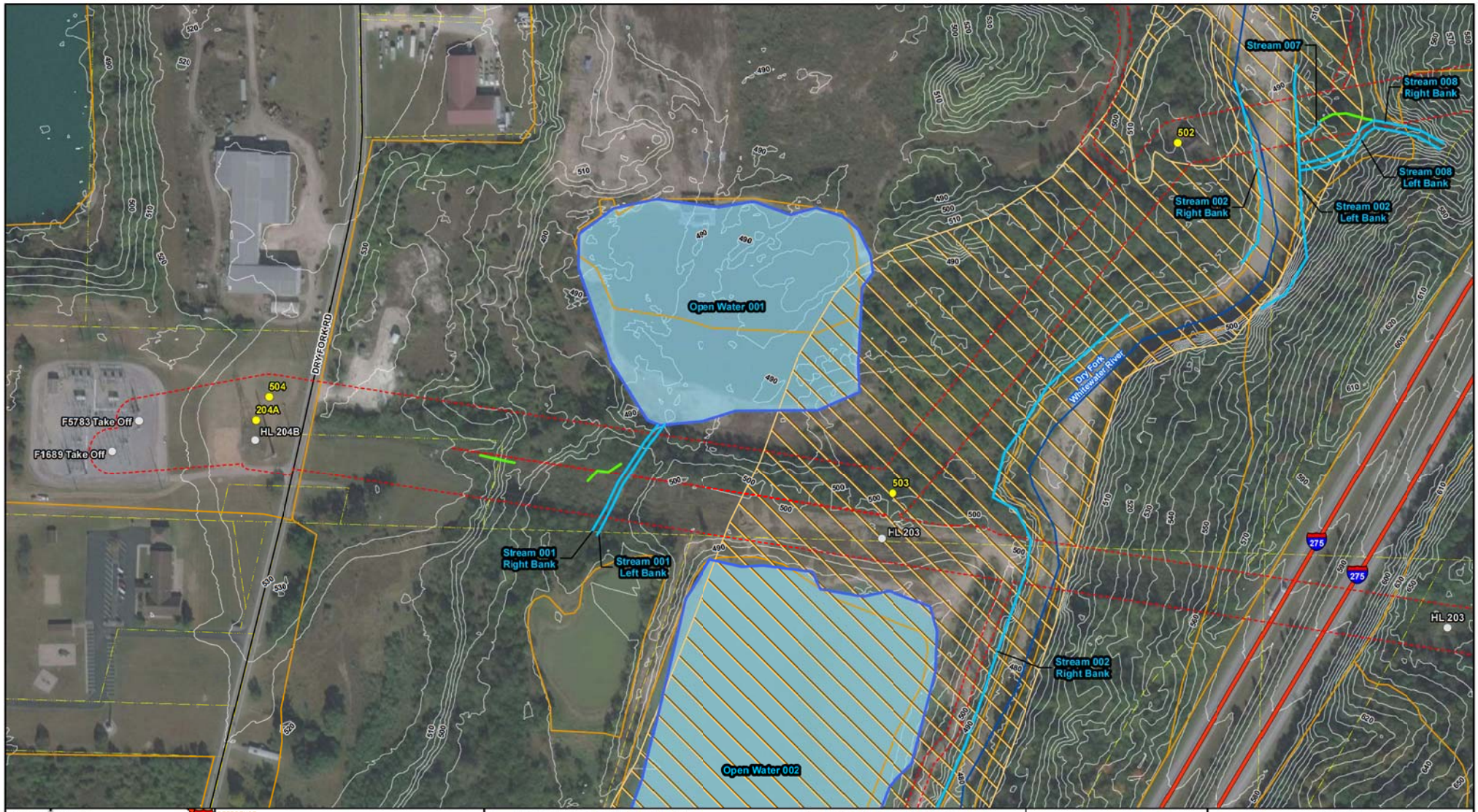
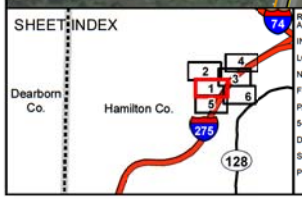


SHEET INDEX



REFERENCE:
AERIAL PHOTOGRAPH:
- ESRI's World Imagery, Accessed: 12/17/2020.
INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.
LOCAL ROAD:
- Ohio Department of Transportation's Roads, 2018.
NHD FLOWLINE:
- U.S. Geological Survey's National Hydrography Dataset, 2018.
FLOODPLAIN AND FLOODWAY:
- FEMA's Floodplains and Flood Hazard Zones, 2018.
PARCELS:
- Cincinnati Area Geographic Information System (CAGIS), 01/04/2019.
5-FOOT CONTOUR:
- Ohio Geographically Referenced Information Program (OGRIP), 2007.
DELINEATED FEATURE AND SWPPP CONTROL:
- GAI Consultants.
SOIL TYPE BOUNDARY:
- United States Department of Agriculture's SSURGO, I/01/2018.
PROJECT DETAILS:
- Duke Energy.

Interstate Highway
State Highway
Local Road
Existing Structure
Proposed Structure
Existing Culvert End
Wetland Data Point
Upland Data Point
Fence
Surface Drainage
Delineated Stream
Delineated Wetland - PEM
Delineated Open Water
Study Area
NHD Flowline
100-Year Floodplain
Floodway
Soil Type Boundary
Parcel Boundary
5-Foot Contour

DUKE ENERGY.

gai consultants

0 100 200 Feet
1 in = 200 feet

FIGURE 2
RESOURCE LOCATION

SHEET 1 of 6

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD
CHECKED: TDB
DATE: 12/17/2020
APPROVED: MRW

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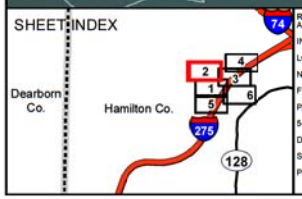
SHEET INDEX



REFERENCE:
AERIAL PHOTOGRAPH:
- ESRI's World Imagery, Accessed: 12/17/2020.
INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.
LOCAL ROAD:
- Ohio Department of Transportation's Roads, 2018.
NHD FLOWLINE:
- U.S. Geological Survey's National Hydrography Dataset, 2018.
FLOODPLAIN AND FLOODWAY:
- FEMA's Floodplains and Flood Hazard Zones, 2018.
PARCELS:
- Cincinnati Area Geographic Information System (CAGIS), 01/04/2019.
5-FOOT CONTOUR:
- Ohio Geographically Referenced Information Program (OGRIP), 2007.
DELINEATED FEATURE AND SWPPP CONTROL:
- GAI Consultants.
SOIL TYPE BOUNDARY:
- United States Department of Agriculture's SSURGO, I/01/2018.
PROJECT DETAILS:
- Duke Energy.

- Interstate Highway
- State Highway
- Local Road
- Existing Structure
- Proposed Structure
- Existing Culvert End
- Wetland Data Point
- Upland Data Point
- Fence
- Surface Drainage
- Delineated Stream
- Delineated Wetland - PEM
- Delineated Open Water
- Study Area
- NHD Flowline
- 100-Year Floodplain
- Floodway
- Soil Type Boundary
- Parcel Boundary
- 5-Foot Contour

DUKE ENERGY.

gai consultants

0 100 200 Feet

1 in = 200 feet

FIGURE 2
RESOURCE LOCATION

SHEET 2 of 6

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/17/2020
CHECKED: TDB APPROVED: MRW

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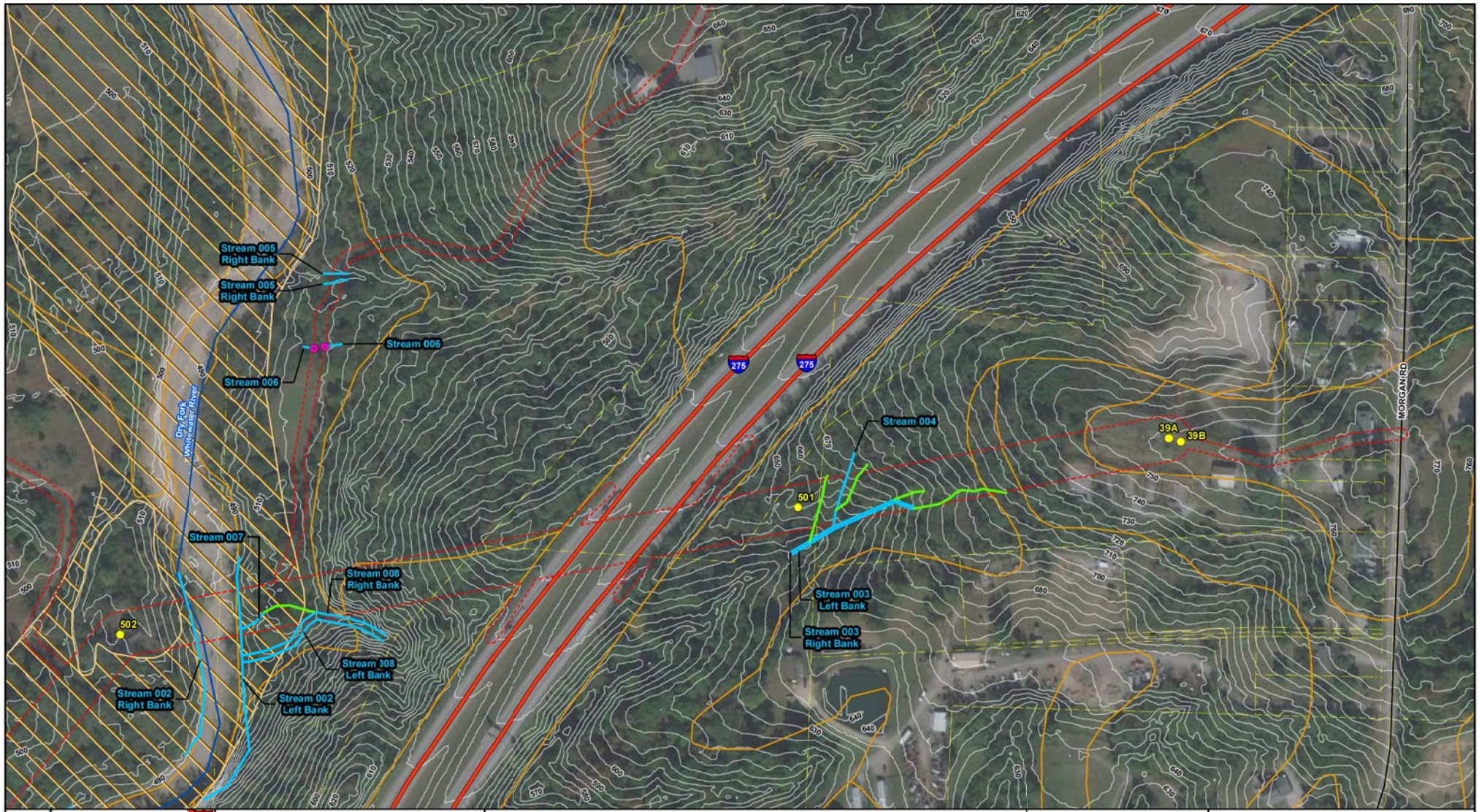

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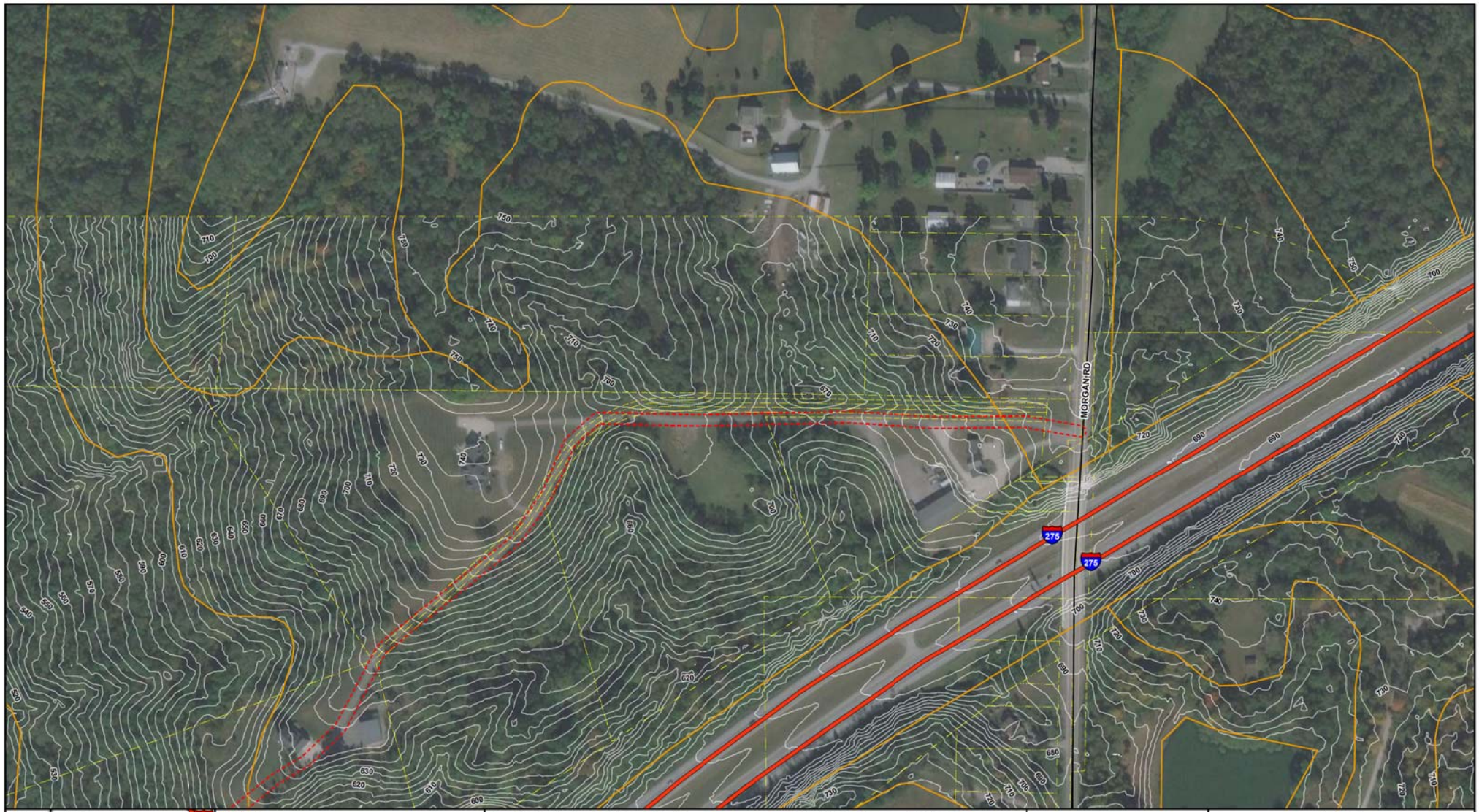
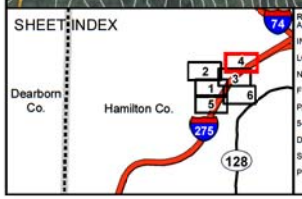


SHEET INDEX



REFERENCE:
AERIAL PHOTOGRAPH:
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INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.
LOCAL ROAD:
- Ohio Department of Transportation's Roads, 2018.
NHD FLOWLINE:
- U.S. Geological Survey's National Hydrography Dataset, 2018.
FLOODPLAIN AND FLOODWAY:
- FEMA's Floodplains and Flood Hazard Zones, 2018.
PARCELS:
- Cincinnati Area Geographic Information System (CAGIS), 01/04/2019.
5-FOOT CONTOUR:
- Ohio Geographically Referenced Information Program (OGRIP), 2007.
DELINEATED FEATURE AND SWPPP CONTROL:
- GAI Consultants.
SOIL TYPE BOUNDARY:
- United States Department of Agriculture's SSURGO, I/01/2018.
PROJECT DETAILS:
- Duke Energy.

- Interstate Highway
- State Highway
- Local Road
- Existing Structure
- Proposed Structure
- Existing Culvert End
- Wetland Data Point
- Upland Data Point
- Fence
- Surface Drainage
- Delineated Stream
- Delineated Wetland - PEM
- Delineated Open Water
- Study Area
- NHD Flowline
- 100-Year Floodplain
- Floodway
- Soil Type Boundary
- Parcel Boundary
- 5-Foot Contour

DUKE ENERGY.

gai consultants

0 100 200 Feet

1 in = 200 feet

FIGURE 2
RESOURCE LOCATION

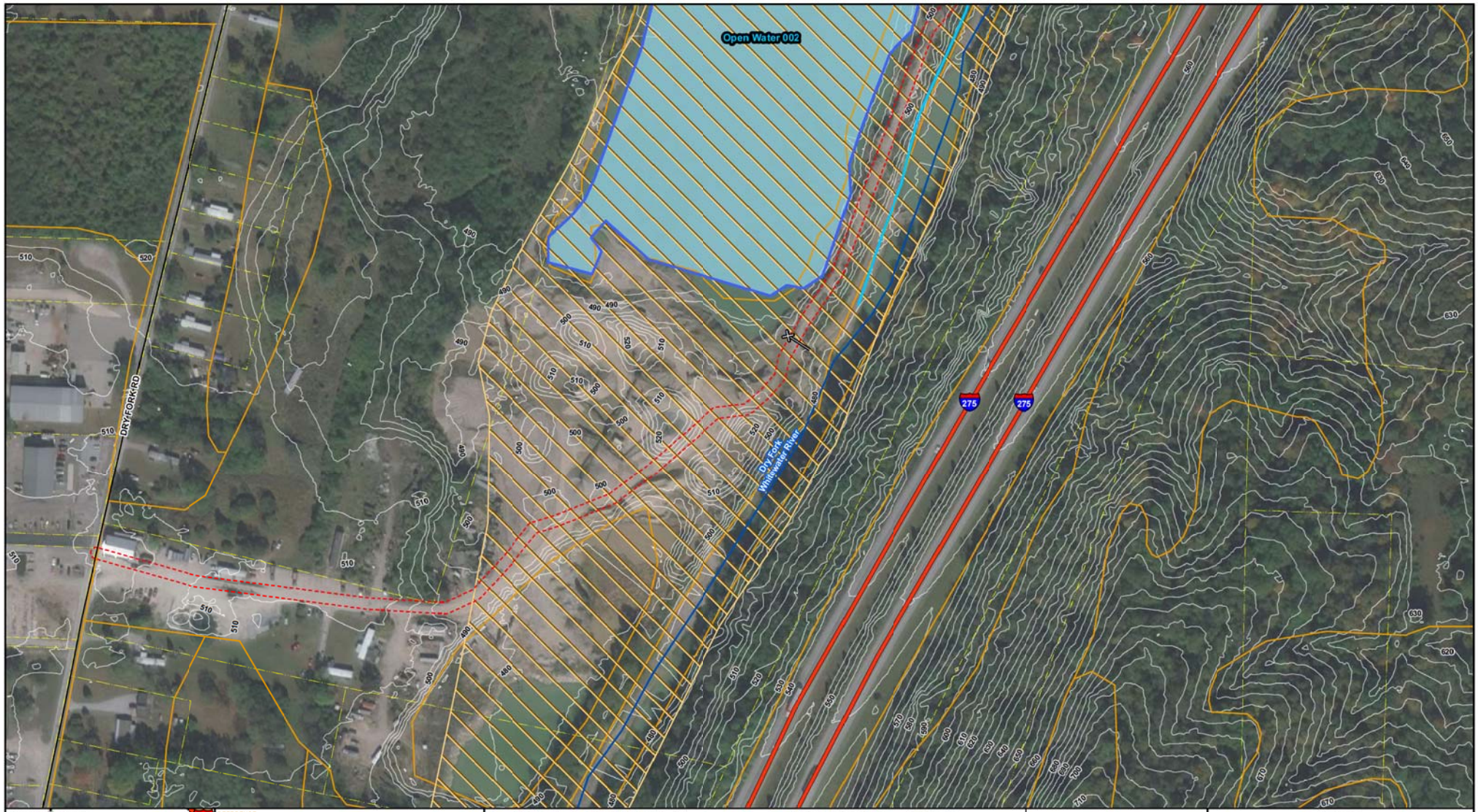
SHEET 4 of 6

Wetland Delineation and Stream Identification Report

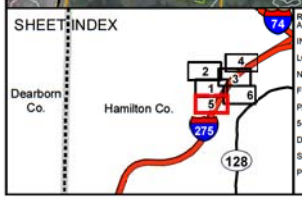
Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/17/2020
CHECKED: TDB APPROVED: MRW

G:\D181119.00 - GIS\MXD\WDSIR\D181119_00_Morgan_WDSIR_FIG2_Sheets_2020_12_10.mxd



SHEET INDEX



REFERENCE:
AERIAL PHOTOGRAPH:
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INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.
LOCAL ROAD:
- Ohio Department of Transportation's Roads, 2018.
NHD FLOWLINE:
- U.S. Geological Survey's National Hydrography Dataset, 2018.
FLOODPLAIN AND FLOODWAY:
- FEMA's Floodplains and Flood Hazard Zones, 2018.
PARCELS:
- Cincinnati Area Geographic Information System (CAGIS), 01/04/2019.
5-FOOT CONTOUR:
- Ohio Geographically Referenced Information Program (OGRIP), 2007.
DELINEATED FEATURE AND SWPPP CONTROL:
- GAI Consultants.
SOIL TYPE BOUNDARY:
- United States Department of Agriculture's SSURGO, I/01/2018.
PROJECT DETAILS:
- Duke Energy.

- Interstate Highway
- State Highway
- Local Road
- Existing Structure
- Proposed Structure
- Existing Culvert End
- Wetland Data Point
- Upland Data Point
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- Delineated Open Water
- Study Area
- NHD Flowline
- 100-Year Floodplain
- Floodway
- Soil Type Boundary
- Parcel Boundary
- 5-Foot Contour

DUKE ENERGY.

gai consultants

0 100 200 Feet

1 in = 200 feet

FIGURE 2
RESOURCE LOCATION

SHEET 5 of 6

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/17/2020
CHECKED: TDB APPROVED: MRW

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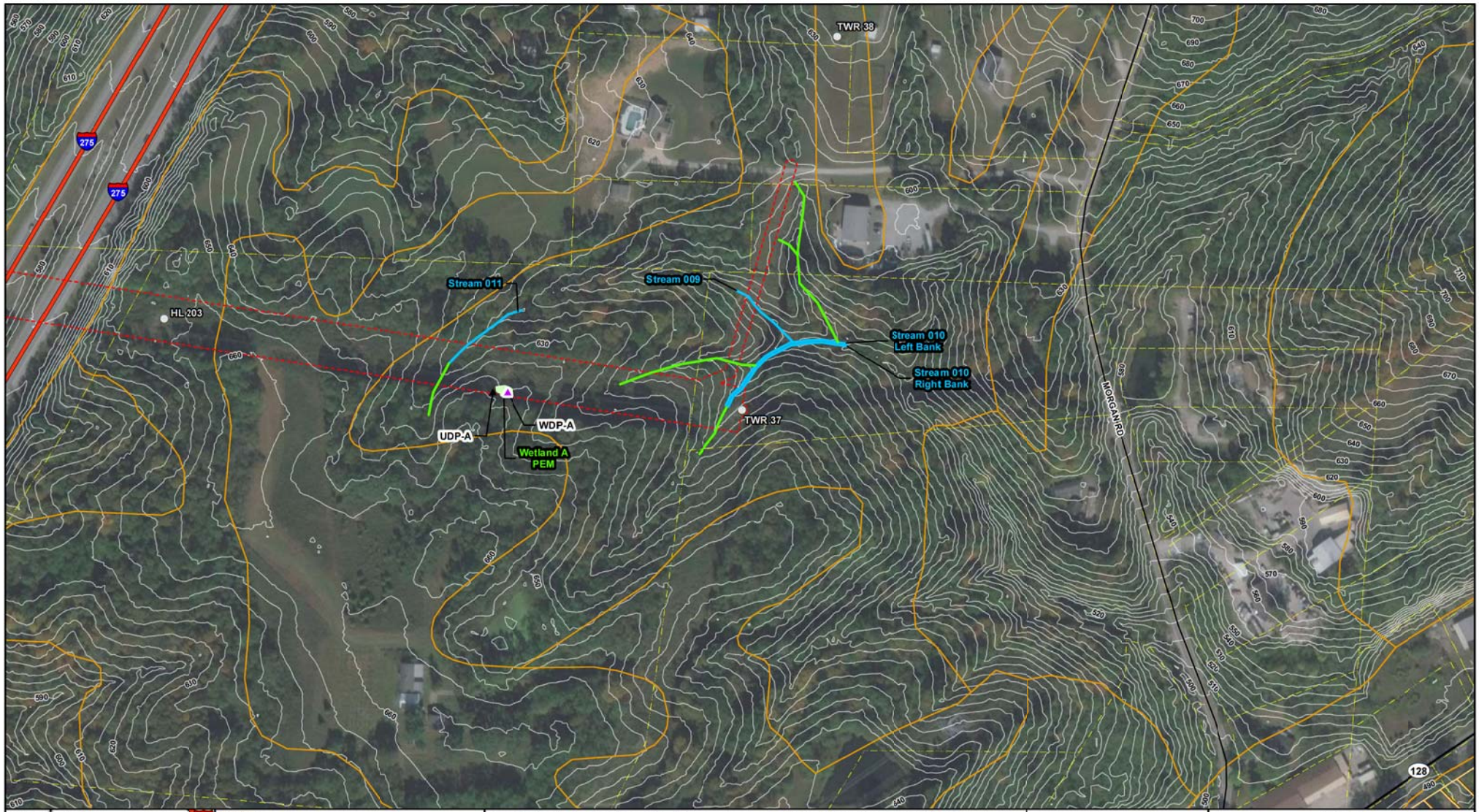

SHEET INDEX

Dearborn Co.

Hamilton Co.

REFERENCE:
AERIAL PHOTOGRAPH:
- ESRI's World Imagery, Accessed: 12/17/2020.
INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.
LOCAL ROAD:
- Ohio Department of Transportation's Roads, 2018.
NHD FLOWLINE:
- U.S. Geological Survey's National Hydrography Dataset, 2018.
FLOODPLAIN AND FLOODWAY:
- FEMA's Floodplains and Flood Hazard Zones, 2018.
PARCELS:
- Cincinnati Area Geographic Information System (CAGIS), 01/04/2019.
5-FOOT CONTOUR:
- Ohio Geographically Referenced Information Program (OGRIP), 2007.
DELINEATED FEATURE AND SWPPP CONTROL:
- GAI Consultants.
SOIL TYPE BOUNDARY:
- United States Department of Agriculture's SSURGO, I/01/2018.
PROJECT DETAILS:
- Duke Energy.

Interstate Highway
State Highway
Local Road
Existing Structure
Proposed Structure
Existing Culvert End
Wetland Data Point
Upland Data Point
Fence
Surface Drainage
Delineated Stream
Delineated Wetland - PEM
Delineated Open Water
Study Area
NHD Flowline
100-Year Floodplain
Floodway
Soil Type Boundary
Parcel Boundary
5-Foot Contour

DUKE ENERGY.

gai consultants

0 100 200 Feet

1 in = 200 feet

FIGURE 2
RESOURCE LOCATION

SHEET 6 of 6

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD
CHECKED: TDB
DATE: 12/17/2020
APPROVED: MRW

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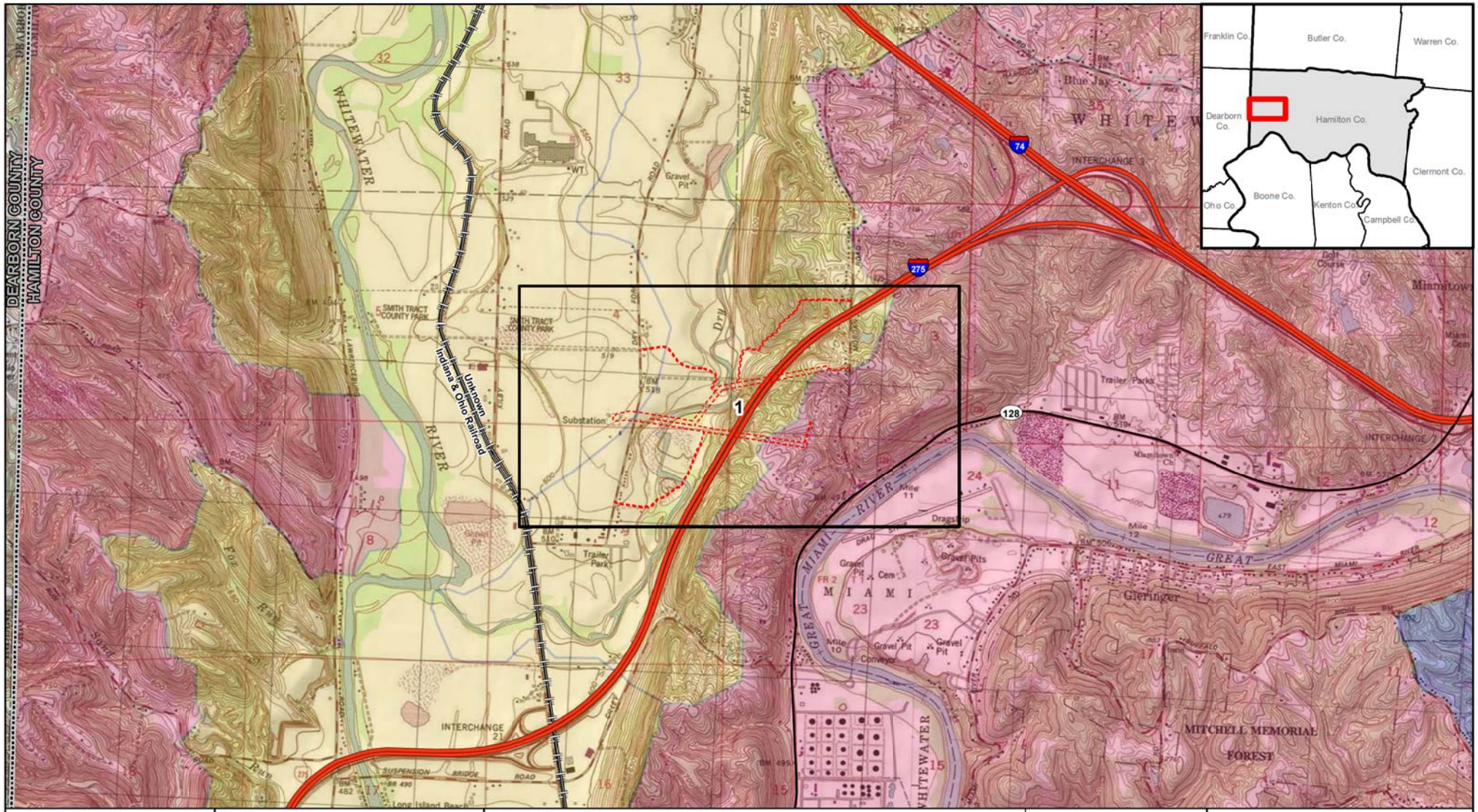

PROJECT LOCATION

HAMILTON COUNTY, OH

REFERENCE:
TOPOGRAPHIC MAP:
- Esri's USA Topo Map. Accessed: 12/15/2020.

COUNTY BOUNDARY:
- Indiana Geological Survey's County Boundaries of Indiana, 6/21/2002.

INTERSTATE AND HIGHWAY:
- ESRI's USA Major Roads, 05/10/2018.

STREAM ELIGIBILITY:
- Ohio Environmental Protection Agency (OEPA), 2017.

PROJECT DETAILS:
- Duke Energy.

Interstate Highway
State Highway
Railway
County Boundary
Study Area
Sheet Index

OEPA NWP Eligibility
Ineligible
Possibly Eligible
Eligible

DUKE ENERGY.

gai consultants

0 1,000 2,000 Feet
1 in = 2,000 feet

FIGURE 3
STREAM ELIGIBILITY

SHEET INDEX

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/15/2020
CHECKED: TDB APPROVED: MRW

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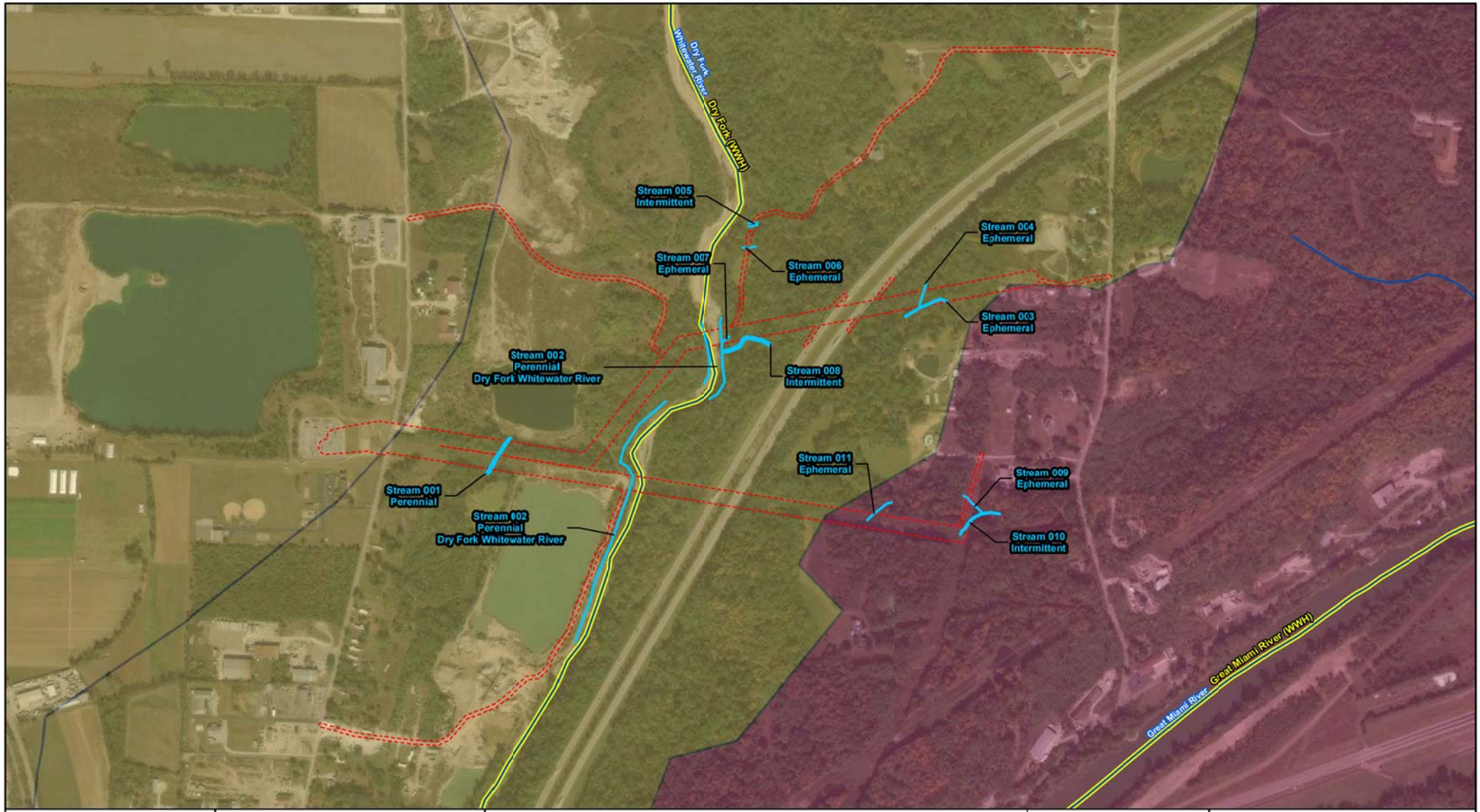

PROJECT LOCATION

HAMILTON
COUNTY, OH

REFERENCE:
AERIAL PHOTOGRAPH:
- Esri's World Imagery 2017, Accessed: 12/15/2020.

NHD FLOWLINE:
- United States Geological Survey's National Hydrography Dataset Best Resolution, 1/01/2018.

STREAM ELIGIBILITY:
- Ohio Environmental Protection Agency (OEPA), 2017.

WQS STREAMS:
- OEPA Water Quality Standards Website - http://epa.ohio.gov/gis.

DELINEATED FEATURE:
- GAI Consultants.

PROJECT DETAILS:
- Duke Energy.

Delineated Stream
Study Area
NHD Flowline
OH WQS Stream

OEPA NWP Eligibility
Ineligible
Possibly Eligible
Eligible

DUKE ENERGY.

gai consultants

0 300 600 Feet
1 in = 600 feet

FIGURE 3
STREAM ELIGIBILITY

SHEET 1 of 1

Wetland Delineation and Stream Identification Report

Morgan Transmission Line Separation Project

DRAWN BY: PPD DATE: 12/15/2020
CHECKED: TDB APPROVED: MRW

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APPENDIX A
Wetland Data Forms

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Morgan 5783 Relocation Project City/County: Hamilton Co Sampling Date 8/6/19
Applicant/Owner: Duke Energy State: OH Sampling Point WDP-A
Investigator(s): TER, BJR Section, Township, Range n/a
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 5
Subregion (LRR or MLRA): LRR-N Lat.: 39.203908 Long.: -84.760641 Datum: NAD83
Soil Map Unit Name Swd2 - Switzerland silt loam, 15 to 25 percent slopes, eroded NWI Classification: n/a

Are climatic/hydrologic conditions of the site typical for this time of the yea Yes X No ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	**Is the sampled area within a wetland?** Yes
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)
- X 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes ____	No X	Depth (inches): ____	
Water table present?	Yes ____	No X	Depth (inches): ____	
Saturation present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____	**Wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: WDP-A

Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Phalaris arundinacea*	80	Y	FACW
2	*Dichanthelium clandestinum*	15	N	FAC
3	*Juncus effusus*	5	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		100	= Total Cover	

Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

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

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	85	x 2 =	170	
FAC species	15	x 3 =	45	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	215	(B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetatior
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

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

Hydrophytic vegetation present? Y

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

SOIL **Sampling Point:**

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10YR 3/2	80	10YR 4/6	20	C	PL/M	Silt Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) **(MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? ___Y___

Remarks:

APPENDIX B
Upland Forms

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Morgan 5783 Relocation Project City/County: Hamilton Co Sampling Date 8/6/19
Applicant/Owner: Duke Energy State: OH Sampling Point UDP-A
Investigator(s): TER, BJR Section, Township, Range n/a
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 5
Subregion (LRR or MLRA): LRR-N Lat.: 39.203908 Long.: -84.760753 Datum: NAD83
Soil Map Unit Name Swd2 - Switzerland silt loam, 15 to 25 percent slopes, eroded NWI Classification: n/a

Are climatic/hydrologic conditions of the site typical for this time of the yea Yes X No ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? No Hydric soil present? No Wetland hydrology present? No	**Is the sampled area within a wetland?** No
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)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes ____	No X	Depth (inches): ____	**Wetland hydrology present?**	N
Water table present?	Yes ____	No X	Depth (inches): ____		
Saturation present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____		

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UDP-A

Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Rosa multiflora*	40	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
		40	= Total Cover	

Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Solidago canadensis*	60	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		60	= Total Cover	

Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	8	20
Herb Stratum	12	30
Woody Vine Stratum	0	0

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: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	100	x 4 =	400	
UPL species	0	x 5 =	0	
Column totals	100	(A)	400	(B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetatior
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

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

Hydrophytic vegetation present? N

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

SOIL **Sampling Point:** UDP-A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10YR 3/3	100					Silt Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) **(MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? ___N___

Remarks:

APPENDIX C
ORAM Forms

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

Instructions

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

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

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

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

Background Information

Name:	Tyler Rankin, Brad Rolfes
Date:	10-9-2019
Affiliation:	GAI Consultants, Inc.
Address:	11 Spiral Drive., Suite 8, Florence, KY 45042
Phone Number:	859-212-0226
e-mail address:	t.rankin@gaiconsultants.com
Name of Wetland:	Wetland-A
Vegetation Communit(ies):	Palustrine Emergent (PEM)
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

N

Lat/Long or UTM Coordinate	39.203911, -84.760661
USGS Quad Name	Hooven
County	Hamilton County
Township	Whitewater
Section and Subsection	N/A
Hydrologic Unit Code	050800020906
Site Visit	8-6-2019
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	SwC2
Delineation report/map	Sheet 3

Name of Wetland:	Wetland-A
Wetland Size (acres, hectares):	0.013 ac

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Comments, Narrative Discussion, Justification of Category Changes:

Wetland A is a Palustrine Emergent (PEM) wetland, that was identified as a low-lying depressional wetland in an otherwise upland area east of the Dry-Fork Whitewater River, in Hamilton County, OH . This wetland is surrounded by upland scrub-shrub vegetation, within an existing transmission line Right of way (ROW). Aquatic vegetation was observed - the primary species vegetation observed was **Reed Canary Grass (Phalaris arudinacea**), as well as other hydrophytic species that were less abundant. Soils were predominately silty loam, exhibiting a depleted matrix and seasonal saturation. Surrounding land use of the wetland is upland field and forest as well as residential/commercial, land uses.

Final score : 16.5	**Category:**	Category 1

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Wetland-A	**Rater(s):** TER, BJR	**Date:** 9-6-19

Metric 1. Wetland Area (size).

0	0
max 6 pts.	subtotal

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

11	11
max 14 pts.	subtotal

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

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

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

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [X] LOW. Old field (>10 years), shrub land, 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)

Metric 3. Hydrology.

11.5	22.5
max 30 pts.	subtotal

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

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [X] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

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

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

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [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.

- [X] None or none apparent (12)
- [X] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7	29.5
max 20 pts.	subtotal

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [X] Recovering (2)
- [X] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [X] 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
- [ ] grazing
- [ ] clearcutting
- [X] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [X] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

29.5
subtotal this page

last revised 1 February 2001 jjm

Site: Wetland-A	Rater(s): TER, BJR	Date: 9-6-19

29.5
subtotal first page

Metric 5. Special Wetlands.

-10	19.5
max 10 pts.	subtotal

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)
- [X] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

-3	16.5
max 20 pts.	subtotal

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
- [ ] 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

- [X] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

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

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

16.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	11	
	Metric 3. Hydrology	11.5	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	-10	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	16.5	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category

Choose one	(Category 1)	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX D
Descriptions of Soils Found Within the Project Study Area

Soil Unit Symbol	Soil Unit Name	Acres	Predominantly Hydric[1]	% within Study Area
CnC2	Cincinnati silt loam, 8 to 15 percent slopes, eroded	0.43	No	1.55%
EcE	Eden silty clay loam, 25 to 40 percent slopes	3.77	No	13.67%
JoR1B2	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded	0.76	No	2.74%
Ju	Jules silt loam, occasionally flooded	0.93	No	3.36%
PfD	Pate silty clay loam, 15 to 25 percent slopes	1.32	No	4.78%
Pg	Pits, gravel	12.44	No	45.11%
SwB2	Switzerland silt loam, 3 to 8 percent slopes, eroded	0.94	No	3.40%
SwC2	Switzerland silt loam, 8 to 15 percent slopes, eroded	0.62	No	2.25%
SwD2	Switzerland silt loam, 15 to 25 percent slopes, eroded	2.22	No	8.04%
UAQXC	Urban land-Alfic Udarents-Cincinnati complex, 0 to 12 percent slopes	0.10	No	0.37%
UsUXF	Urban land-Udorthents complex, smoothed, 0 to 50 percent slopes	1.96	No	7.10%
W	Water	1.81	No	6.57%
	TOTAL:	27.63		**100%**

Notes:

[1] Predominantly hydric soil units are defined as those where the "proportion of the map unit, expressed as a class, that is "hydric", based on the hydric classification of individual map unit components" is greater than 50 percent according to the USDA SSURGO Database.

Summary: Application Duke Energy Ohio, Inc. Morgan Transmission Line Separation Project electronically filed by Carys Cochern on behalf of Duke Energy Ohio, Inc.