SOIL

Sampling Point: DP04

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 4/2	100					Clay Loam	

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

Hydric Soil Indicators[3]:

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

Test Indicators of Hydric Soils:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

DUKE ENERGY
F7581/F7582/F5689 – 138kV
GARVER SUBSTATION TLOOP

APPENDIX

C

ENDANGERED, THREATENED, AND RARE SPECIES CORRESPONDANCE

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Monday, November 19, 2018 12:00 PM
To: Danielle Thompson
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: Duke Energy F581/F7582/F5689 - 138 kV Garver Substation, Cincinnati, Hamilton Co.

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

TAILS# 03E15000-2019-TA-0297

Dear Ms. Thompson,

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

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

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

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

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

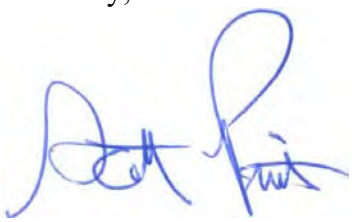
If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend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

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

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

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

Sincerely,



Scott Pruitt
Acting Field Office Supervisor

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

December 19, 2018

Cardno

11121 Canal Road
Cincinnati, Ohio 45241
USA

Phone 513 489 2402
Fax 513 489 2404

Mr. John Kessler
Ohio Department of Natural Resources
Office of Real Estate
2045 Morse Road, Building E-2
Columbus, OH 43230

RE: Duke Energy F7581/F7582/F5689—138kV Garver Substation
Rare, Threatened, and Endangered Species Consultation
Middletown, Butler County, Ohio

Dear Mr. Kessler:

Duke Energy (Duke) is proposing to remove and replace approximately 0.49 miles of existing transmission line (3 lines total) as well as create approximately 0.59 miles of new transmission line (3 lines total), encompassing a total study corridor of 33.95 acres of existing and new 150-foot wide Duke Energy transmission line corridor Right-Of-Way (ROW). A field investigation of the study corridor was conducted on November 7, 2018.

The project study area is located in Middletown, Butler County, Ohio. The location of the proposed Project is depicted on the attached Cincinnati East and Cincinnati West (OH) USGS 7.5-minute topographic map excerpt (Figure 1).

Cardno was contracted by Duke to perform a boundary delineation and assessment of regulated waters, including wetlands, streams, ditches, and/or other federally regulated open waters, rare, threatened, endangered, and special habitat located within the proposed 1.18 miles of existing 100-ft wide ROW. The project study area was dominated by fallow field, scrub shrub, secondary growth forest, forested wetland, and emergent wetland vegetation assemblages. Cardno botanists and ecologists conducted a habitat assessment to identify the presence of regulated waters, and potential Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and Running Buffalo Clover *(Trifolium stoloniferum)* habitat.

In accordance with the ODNR-DOW Environmental Review coordination requirements; the Project study area and its habitat characteristics has been summarized for you below.

1. Location data including latitude and longitude of the project area, site address, and county.

Middletown, LemonTownship, Butler County, Ohio

Initiates: 39.464914, -84.347482
Terminates: 39.465634, -84.354644

2. A detailed project description, including layout of any new construction.

The proposed Duke Energy F7581/F7582/F5689—138kV Garver Substation Project is necessary in order to maintain the integrity of existing Duke structures to ensure adequate power supplies to current and future utility customers in the area. The project is also needed to ensure safety within the existing easements and remain in compliance with current transmission line standards. The three transmission line routes consist of an existing and new transmission line corridor and Duke Energy easement.

Construction will be accomplished largely through the use of bucket trucks with truck-mounted augers for structure installation and other construction vehicles transporting cable spools to install the transmission cable along the route. Excavation will be restricted to the locations where the replacement of five electric poles and the installation of two electric poles will occur. Earth moving activities are anticipated to be minimal. The extent of access disturbance can vary widely dependent upon many factors, including density and type of surface, vegetative cover, weather conditions, and the type of vehicles moving over the area. The existing vegetation will be preserved to the maximum extent practicable.

Project construction is expected to begin in April 2019.

3. A detailed description of onsite habitat, including the size, location, and quality of streams, wetlands, forested areas, and other natural areas, and proposed impacts.

The proposed Duke Energy F7581/F7582/F5689—138kV Garver Substation Project is linear in scope and will take place entirely within existing transmission line corridor, new transmission line corridor, and Duke Energy easement (Figure 1 & 2). There are five regulated waters identified within the project's Study Area. Specific attention was given to the presence of habitat suitable for federally endangered and threatened species – specifically, the Indiana bat (*Myotis sodalist),* the Northern Long-Eared bat (*Myotis septentrionalis),* and Running Buffalo Clover *(Trifolium stoloniferum).* To evaluate the potential habitat for rare, threatened, and endangered species a general site reconnaissance of the project study area was performed by Cardno botanists and ecologists. The result of these habitat assessments can be found below.

Secondary Growth Forest

The secondary growth forest vegetation assemblage was located within the proposed study area. Dominant canopy species in this habitat type consisted of quaking aspen (*Populus tremuloides),* shellbark hickory (*Carya laciniosa*), and bur oak (*Quercus macrocarpa*). Understory vegetation was dominated by Amur honeysuckle (*Lonicera maackii*) and saplings of the canopy species. Although a formal study was not part of this scope, there was potential habitat for listed species identified within this habitat.

Forested Wetland
The forested wetland vegetation assemblage was located within the proposed study area. Dominant canopy species in this habitat type consisted of shellbark hickory and hackberry (*Celtis occidentalis*). Understory vegetation was dominated by green ash (*Fraxinus pennsylvanica*) saplings, white grass (*Leersia virginica*), sedge species (*Carex* spp.), and saplings of the canopy species. Although a formal study was not part of this scope, there was potential habitat for listed species identified within this habitat.

Emergent Wetland
The emergent wetland vegetation assemblage was located within the proposed study area. Understory vegetation was dominated by reed canary grass (*Phalaris arundiancea*), and dogbane (*Apocynum cannabinum*). Although a formal study was not part of this scope, there was potential habitat for listed species identified within this habitat

Scrub Shrub
The scrub shrub vegetation assemblage was located within the proposed study area. Dominant shrub species in this habitat type consisted of Amur honeysuckle, Callery pear (*Pyrus calleryana*), and Autumn olive (*Elaeagnus umbellata*). Understory vegetation was dominated by teasel (*Dipsacus fullonum*), Johnson grass (*Sorghum halapense*), and Canada goldenrod (*Solidago canadensis*). Although a formal study was not part of this scope, there was no potential habitat for listed species identified within this habitat.

Fallow Field
The fallow field vegetation assemblage was located within the proposed study area. Dominant species in this habitat type consisted of teasel, tall fescue (*Schedonorus arundianceaus*), hairy aster (*Symphyotrichum pilosum*), yellow foxtail (*Setaria pumila*), and fall panic grass (*Panicum dichotomiflorum*). Although a formal study was not part of this scope, there was no potential habitat for listed species identified within this habitat.

4. Proposed impacts (i.e. in-water work or tree clearing)

Tree clearing is anticipated in positioning of new towers and transmission line right of way to be installed as a part of this project scope. Based on the current project alignment, wetland impacts would also be incurred; however, Duke Energy is exploring alternate placement locations outside wetland boundaries.

5. Proposed Best Management Practices

Best management practices will be followed for all potential stormwater impacts or runoff areas. These will include the use of fiber roll to collect any runoff/sediment. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared prior to project construction, and if needed, an NPDES permit will also be obtained.

Conclusion

Based on the physical site characteristics, the site contains some fair quality habitat for the federally endangered Indiana and NLE bat based on the woody species composition and intensity of surrounding land use. All tree clearing activities will be conducted during the USFWS

recommended winter tree clearing window between October 1 and March 31.

We are requesting a review by your office and a written response regarding effects on state listed threatened and/or endangered species and their critical habitat within the vicinity of the project area. Enclosed for your review are the project location map, aerial map and photograph log.

If you have any questions concerning this request or would like additional information, please do not hesitate to contact me at (513) 404-6251 or danielle.thompson@cardno.com.

Sincerely,

Danielle K. Thompson,
Senior Project Scientist for Cardno

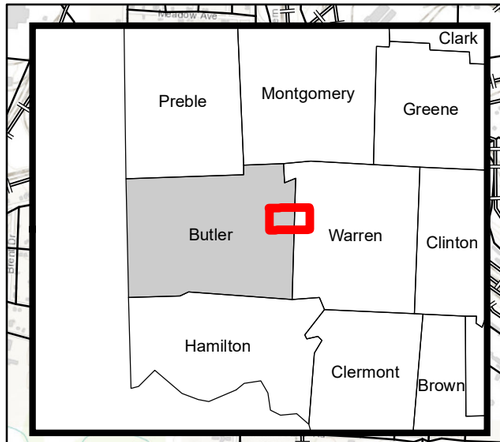
Enc: USGS map, Aerial Map, Site Plans, Photo Log, GIS Shapefile

Attachments

USGS Map
Aerial Location Map
Site Plans
Photo Log

Attachments

USGS Map
Aerial Location Map
Photo Log



AK SUBSTATION

GARVER SUBSTATION

BUTLER COUNTY

WARREN COUNTY

PROJECT LOCATION

BUTLER COUNTY, OHIO

REFERENCE:
USGS 7.5' TOPOGRAPHIC QUADRANGLE: MONROE, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 10/2018

Existing Facility
Proposed Centerline
100ft Corridor
Municipal Boundary
County Boundary
Railroad
Local Road
Interstate
State Highway
US Highway

0 400 800 1,600 2,400 Feet

LINE ENVIRONMENTAL ASSESSMENT
F7581-F7582-F5689 Garver Substation
DUKE ENERGY
PROJECT VICINITY

DRAWN BY: DKT
CHECKED: DKT
DATE: 12/20/2018
APPROVED: MWW

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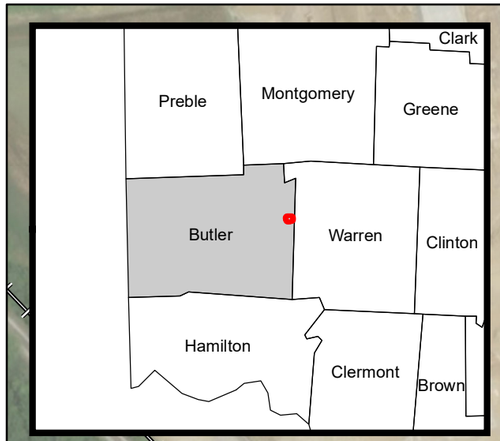

GARVER SUBSTATION

BUTLER COUNTY

PROJECT LOCATION

BUTLER COUNTY, OHIO

REFERENCE:
USGS 7.5' TOPOGRAPHIC QUADRANGLE: MONROE, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 10/2018

Existing Facility
Proposed Centerline
100ft Corridor
Municipal Boundary
County Boundary
Railroad
Local Road
Interstate
State Highway
US Highway

DUKE ENERGY
Cardno

0 100 200 Feet

LINE ENVIRONMENTAL ASSESSMENT
F7581-F7582-F5689 Garver Substation
DUKE ENERGY
AERIAL

DRAWN BY: DKT
CHECKED: DKT
DATE: 12/20/2018
APPROVED: MWW

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Photo 1. ROW Corridor, Secondary Growth Forest, facing Northwest

Photo 2. ROW Corridor, Forested Wetland, facing North.

Photo 3. ROW Corridor, Secondary Growth Forest, Potential Roost Tree.

Photo 4. ROW Corridor, Secondary Growth Forest, Dead Standing.

Project Number:
J156720M76

Site Photographs

Duke Energy — F7581/F7582/F5689—138kV Garver Substation
Middletown, Butler County, Ohio
Line Environmental Assessment

Cardno

Photo 5. ROW Corridor, Emergent Wetland Vegetation, facing North.

Photo 6. ROW Corridor, Scrub Shrub Vegetation, facing East.

Photo 7. ROW Corridor, Pond, facing Northeast.

Photo 8. ROW Corridor, Fallow Field Vegetation, facing West.