AMERICAN TRANSMISSION SYSTEMS, INCORPORATED
A FIRSTENERGY COMPANY

CONSTRUCTION NOTICE

GREENFIELD-LAKEVIEW 138 kV TRANSMISSION LINE RECONDUCTOR PROJECT

OPSB CASE NO.: 21-1178-EL-BNR

December 10, 2021

American Transmission Systems, Incorporated
76 South Main Street
Akron, Ohio 44308

CONSTRUCTION NOTICE
GREENFIELD-LAKEVIEW 138 kV TRANSMISSION LINE
RECONDUCTOR PROJECT

The following information is being provided in accordance with the procedures in the Ohio Administrative Code ("OAC") Chapter 4906-6 for the application and review of Accelerated Certificate Applications. Based upon the requirements found in Appendix A to OAC Rule 4906-1-01, this Project qualifies for submittal to the Ohio Power Siting Board ("OPSB") as a Construction Notice application.

4906-6-05: ACCELERATED APPLICATION REQUIREMENTS

4906-6-05: Name and Reference Number

Name of Project: Greenfield-Lakeview 138 kV Transmission Line Reconductor Project ("Project") (3053).

4906-6-05 (B)(1): Brief Description of the Project

In this Project, American Transmission Systems, Incorporated ("ATSI") proposes to reconductor two sections of the existing Greenfield-Lakeview 138 kV Transmission Line. The first section of transmission line reconductoring begins at Lakeview Substation and continues approximately 1.2 miles south to a point where the transmission line turns to the east. As part of reconductoring this section, ATSI will replace, like-for-like, seven (7) wood pole H-frame structures (Str. 1452 through Str. 1458); the replacement poles will remain similarly-positioned relative to the existing transmission line.[1]

The second section to be reconductored runs east-west and is approximately 620 feet (0.1 mile) in length. This section begins two (2) structures immediately west of Greenfield Substation and extends into Greenfield Substation. In addition to reconductoring the two

[1] The pole replacements do not require approval from the Board and are explained herein solely for informational purposes.

(2) spans of transmission line reconductoring, ATSI will replace, like-for-like, Str. 1365 in the same general location.

The Greenfield-Lakeview 138 kV Transmission Line is a total of 14.3-miles long. The reconductored sections (as proposed in the Project) represent approximately 9% of the entire transmission line and are situated at the substation ends. The remaining 91% is currently in a six-wire configuration which provides greater capacity. Conversely, the sections to be reconductored are currently at a lower capacity, which limits the overall capacity of the Greenfield-Lakeview 138 kV Transmission Line and causes the planning criteria violations explained in this Application relative to "need" (4906-6-05(B)(2)).

The general location of the Project is shown in Exhibit 1, a partial copy of the United States Geologic Survey Quad Map. Exhibit 2 is a copy of ESRI aerial imagery of the Project area. The general Project layout is included as Exhibit 3. The first section of the Project (1.2 miles in length running north-south) is located in the City of Port Clinton and Portage Township, Ottawa County; the second section of the Project (620 feet in length running east-west) is located in Perkins Township, Erie County.

4906-6-05 (B)(1): Construction Notice Requirement

The Project meets the requirements for a Construction Notice application because the Project is within the types of projects defined by Item (2)(a) of the Application Requirement Matrix for Electric Power Transmission Lines, Appendix A of OAC Rule 4906-1-01. This item states:

> *(2) Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing line or replacing structures with a different type of structure, for a distance of:*
>
> *(a) two miles or less*

The proposed Project is within the requirements of Item (2)(a) as it involves replacing transmission line conductors with larger conductors for a distance of less than two miles.

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

The proposed Project is necessary to complete the mandatory PJM RTEP baseline project, identification number b3034 to resolve NERC, PJM, and FE planning criteria violations identified by PJM. The PJM-selected solution for the baseline violation is to reconductor the Greenfield-Lakeview 138 kV Transmission Line and to upgrade the terminal equipment at Lakeview Substation and Greenfield Substation. Completion of the PJM baseline project is mandatory for ATSI as a transmission owner within territory served by PJM; the Project will also enhance the reliability, resiliency, efficiency, and operational flexibility of the transmission system in the Project area. Construction of the Project will directly improve electric service reliability for the Cleveland area (a major load center) and provide additional capacity for economic development and load growth in the area.

The Project consists of three components of planned upgrades necessary to achieve the system improvements identified in the PJM baseline project. The three components are:

1. At Lakeview Substation, Greenfield exit, replace 795 ACSR substation conductors with 795 ACSS conductor.
2. At Greenfield Substation, Lakeview exit, replace 795 ACSR line drop and 1000 Cu & 795 ACSR substation conductors with 795 ACSS conductor; upgrade relay to standard relay panel.
3. For the Greenfield-Lakeview 138 kV Line, reconductor the existing 795 ACSR conductor (approximately 1.2 miles on the Lakeview end and the last two spans on the Greenfield end) with 795 ACSS conductor.

Implementation of these three upgrades is required to fully address the system reinforcements identified in the PJM baseline project needed to address the reliability criteria violation.

The Greenfield-Lakeview 138 kV Transmission Line is one of the major lines facilitating transfer of power to the Cleveland area (a major load center) from the more generation-rich area of western Ohio. PJM identified a thermal criteria violation on the Greenfield-Lakeview 138 kV Transmission Line in the 2018 RTEP 2023 N-1-1 Thermal and Voltage study for a common tower failure tripping the Davis Besse-X1-027A and the Beaver-Hayes 345 kV transmission lines. Under current configurations, this contingency will result in a thermal violation of the Greenfield-Lakeview 138 kV Transmission Line above the PJM and FE transmission emergency maximum thermal operating limit.

To correct the reliability criteria violation, ATSI proposed reconductoring portions of the Greenfield-Lakeview 138 kV Transmission Line and upgrading the limiting substation elements at Greenfield Substation and Lakeview Substation; ATSI submitted the same as a baseline upgrade project to the PJM Regional Transmission Expansion Plan (RTEP) at the Sub-Regional RTEP Committee meeting on August 31, 2018. The project solution will improve operational flexibility, efficiency, and increase the 138 kV system thermal capacity above the loading that occurs under the Planning Event P7 (common tower failure tripping Davis Besse-X1-027A and the Beaver-Hayes 345 kV Lines) contingency condition. PJM evaluated the proposed project and did not identify any additional FirstEnergy or PJM Planning Criteria violations caused by the Project. As such, there is no additional need for other network system upgrades as a result of the Project. The PJM presentation slide is included as Exhibit 4 and includes additional details of the project drivers.

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

The location of the Project relative to existing or proposed lines is shown in the ATSI Transmission Network Map, included as part of the confidential portion of the FirstEnergy Corp. 2021 Long-Term Forecast Report. This map was submitted to the Public Utilities Commission of Ohio ("PUCO") in Case No. 21-0504-EL-FOR under Rule 4901:5-5:04 (C)(2)(b) of the Ohio Administrative Code. The map is incorporated by reference only. This map shows ATSI's 345 kV and 138 kV transmission lines and transmission substations including the Greenfield-Lakeview 138 kV Transmission Line. The Project is

included in ATSI's LTFR filed in 2021 on page 52. The general location and layout of the Project is shown in Exhibits 1 through 3.

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

An alternative upgrade is to construct a new 138 kV transmission line from Lakeview Substation to Greenfield Substation. The proposed Project is best suited for the proposed reinforcement because the Project will occur entirely on existing right-of-way and requires no new land acquisition, minimizing environmental impact and project cost.

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

ATSI's manager of External Affairs will advise local officials of features and the status of the proposed Project as necessary. ATSI has also established a project website: https://www.firstenergycorp.com/about/transmission_projects/ohio.html. ATSI will maintain the Project website and will continue to work with property owners concerning the proposed Project. Finally, during all phases of this Project, ATSI will maintain the transmission projects hotline at 1-888-311-4737 or via email at: transmissionprojects@firstenergycorp.com, where the public may ask questions or leave comments on the Project for ATSI.

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

The construction schedule for this Project is expected to begin March 2022 and completed by June 2022.

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

Exhibit 1 depicts the general location of the Project. This Exhibit provides a partial copy of the United States Geologic Survey Quad Map. Exhibit 2 is a copy of ESRI aerial imagery of the Project area.

4906-6-05 (B)(8): List of Properties

The Project is located within existing right-of-way. No new easements will be required for the completion of this Project. Table 1 contains a list of properties impacted by the Project.

Table 1. List of Affected Property Owners

Parcel Number	Easement Status
0200724909594000	Existing
0202111834852000	Existing
0202111834848000	Existing
0200732009838000	Existing
0200722309559000	Existing
200727409834000	Existing
210680822564000	Existing
0200456821466000	Existing
0211907531232000	Existing
0211907531237000	Existing
32-90020.000	Existing
33-90010.000	Existing
32-90019.000	Existing
0201907531242000	Existing
0211907531238000	Existing

4906-6-05 (B)(9): TECHNICAL FEATURES OF THE PROJECT

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

The construction will have the following characteristics:

Voltage:	138 kV
Existing Conductor:	795 kcmil 26/7 ACSR
New Conductor:	795 kcmil 26/7 ACSS
Existing Structure:	Wood-pole H-Frame
New Structure:	Wood-pole H-Frame
Static Wire:	7#8 Alumoweld & SFSJ-J-6641 OPGW
Insulators:	Porcelain Bells for both deadend and suspension structures
ROW Width:	100 feet

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

The closest occupied residence or institution is approximately 80 feet from the Greenfield-Lakeview 138 kV Transmission Line (in a shared corridor with the Lakeview-Ottawa 138 kV Transmission Line); therefore, Electric and Magnetic Field ("EMF") calculations are required by this code provision.

4906-6-05 (B)(9)(b)(i): Calculated Electric and Magnetic Fields Strength Levels

Table 2 itemizes the line loading of the Greenfield-Lakeview 138 kV Transmission Line and the Lakeview-Ottawa 138 kV Transmission Line. The normal line loading represents FirstEnergy's peak system load for the transmission line. The emergency line loading represents the maximum line loading under contingency operation. The winter rating is based on the continuous maximum conductor rating ("MCR") of the circuits for the single conductors per phase and an ambient temperature of zero degrees centigrade (32 °F), wind speed of 1.3 miles per hour, and a circuit design operating temperature of 100 °C (212 °F).

Table 2: Transmission Line Loading

Line Name	Normal Loading Amps	Emergency Loading Amps	Winter Rating Amps
Greenfield-Lakeview 138kV Transmission Line	1640	1972	1845
Lakeview-Ottawa 138kV Transmission Line	57.6	57.75	1560

Table 3 provides an approximation of the magnetic and electric fields strengths of the Greenfield-Lakeview 138kV Transmission Line and Lakeview-Ottawa 138kV Transmission Line calculated in a 200-foot right-of-way. The calculations provide an approximation of the electric and magnetic field levels based on specific assumptions utilizing the EPRI EMF Workstation 2015 program software. This program software assumes the input transmission line configuration is located on flat terrain. Also, a balanced, three-phase circuit loading is assumed for the transmission circuit. The model utilizes the normal, emergency, and winter rating of the transmission line.

Table 3: EMF Calculations for Greenfield-Lakeview 138kV Transmission Line and Lakeview-Ottawa 138kV Transmission Line

Greenfield-Lakeview 138kV Transmission Line and Lakeview-Ottawa 138kV Transmission Line– 200ft ROW		**Electric Field kV/m**	**Magnetic Field mG**
Normal Loading	Under Lowest Conductors	1.641	158.62
	At Right-of-Way Edges	0.20 / 0.50	8.52 / 70.85
Emergency Loading	Under Lowest Conductors	1.641	190.96
	At Right-of-Way Edges	0.20 / 0.50	10.83 / 86.2
Winter Rating	Under Lowest Conductors	1.641	191.24
	At Right-of-Way Edges	0.20 / 0.50	72.1 / 98.5

4906-6-05 (B)(9)(b)(ii): Alternative Design Consideration for Electric and Magnetic Fields

As this is an existing transmission line with no structural changes and only conductor replacement, there were no alternative design considerations for electric and magnetic fields.

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

The estimated capital cost for the proposed Project is approximately $2,696,000.

4906-6-05 (B)(10): SOCIAL AND ECOLOGICAL IMPACTS

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

The Project is located in the City of Port Clinton and Portage Township in Ottawa County and in Perkins Township in Erie County. The main land use around the Project area is zoned as residential and agricultural. The Project is located within existing right-of-way, so no changes or impacts to the current land use are anticipated.

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

There are three agricultural properties within the Project area, totaling 159.6-acres. A list of these properties including acreage and agricultural district information is given in Table 4

Table 4: Agricultural Lands within the Project's Disturbance Area

Parcel Number	Acreage	Agricultural District	Agricultural District Expiration
0202111834852000	97.9	Yes	Renews in January, 2025
0202111834848000	22.2	Yes	Renews in January, 2025
0200732009838000	39.5	No	Expired in February 2021

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

As part of the investigation, a search of Ohio Historic Preservation Office ("OHPO") online database was conducted to identify the existence of any significant archeological or cultural resource sites within 0.5 mile of the Project Area. A map of the results of the search is shown in Exhibit 5.

The OHPO database includes all Ohio listings on the National Register of Historic Places ("NRHP"), including districts, sites, building, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The results of the search indicate that no listed NRHP sites and no NRHP eligible sites were identified within 0.5 mile of the Project potential disturbance area.

The OHPO database also includes listing of the Ohio Archaeological Inventory ("OAI"), the Ohio Historic Inventory ("OHI"), previous cultural resource surveys, and the Ohio Genealogical Society ("OGS") cemetery inventory. There are no OAI resources within 0.5-mile of the Project location. There is one (1) OHI structure is listed within 0.5 mile of the Project Area and is listed in Table 5. Two (2) previous cultural resource surveys were conducted within 0.5 mile of the Project location and are identified in Table 6. One (1) OGS Cemetery was identified within 0.5-mile of the Project location and is listed in Table 7. No impacts to any culturally significant resources are expected.

Table 5. List of OHI Listed Structural Resources

OHI Number	Present Name	Historic Use	County	Municipality
ERI0100103	N/A	Single Dwelling	Erie	Sandusky

Table 6. List of Previous Cultural & Historic Resource Survey

Year	Name	County
2002	Phase I Archaeology Survey of the Beaver-Greenfield Transmission Line Proposed Corridor and Laydown Area in Erie and Lorain Counties, Ohio	Erie
2004	Construction of a Stealth Monopole/Flagpole at 1025 E 5th St, Port Clinton, Ottawa County, Ohio (OH DT Port Clinton 28093)	Ottawa

Table 7. List of OGS Cemeteries

OGS ID	Name	County	Location
3042	Calvary Catholic	Sandusky, City of	Just north of intersection of Sanford Street. Just east of US 6 (Tiffin Avenue)

Because this Project involves reconductoring work within existing transmission line right-of-way, no new impacts are anticipated. No historical or cultural resources fall within the right-of-way or the disturbance area of the Project; therefore, the Project will not have adverse effects to any cultural or archaeological resources.

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

Table 8 shows the list of governmental agency requirements for the Project and ATSI's compliance status for each as of this filing.

Table 8. List of Government Agency Requirements to be Secured Prior to Construction

Agency	Permit Requirement	Permit Status
Ohio EPA	NPDES General Stormwater Permit	Paperwork in progress

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

As part of the investigation, ATSI hired AECOM to conduct the necessary environmental surveys, as well as prepare applications for the required environmental permits. AECOM submitted a request to the Ohio Department of Natural Resources ("ODNR") Office of Real Estate to conduct an Environmental Review. As part of the Environmental Review, the ODNR Office of Real Estate conducted a search of the ODNR Division of Wildlife's Natural Heritage Database to research the presence of any endangered, threatened, or rare species within one (1) mile of the Project area. The ODNR's Office of Real Estate's response on November 24, 2020 indicated that records of thirty (30) state and/or federally listed endangered and/or threatened species are located within a one-mile radius of the Project Area. A copy of ODNR's Office of Real Estate's response is included as Exhibit 6.

As part of the investigation, AECOM also submitted a request to the US Fish and Wildlife Service ("USFWS") for an Ecological Review to research the presence of any endangered, threatened, or rare species within one (1) mile of the Project area. A copy of USFWS's Ecological Review response is included as Exhibit 7. The USFWS's response, dated October 20, 2020, indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the project area. The response indicated that the Project is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), A list of all endangered, threatened, and rare species, as identified by ODNR and USFWS, as potentially being within the vicinity of the Project is provided in Table 9.

Table 9. List of Endangered, Threatened, and Rare Species.

Common Name	Scientific Name	Federal Listed Status	State Listed Status	Affected Habitat
Indiana bat	*Myotis sodalis*	Endangered	Endangered	Trees & Forest
Northern long-eared bat	*Myotis septentrionalis*	Threatened	Endangered	Trees & Forest

Little brown bat	*Myotis lucifugus*	N/A	Endangered	Trees & Forest
Tricolored bat	*Perimyotis subflavus*	N/A	Endangered	Trees & Forest
Eastern pondmussel	*Ligumia nasuta*	N/A	Endangered	Streams/Rivers
Black sandshell	*Ligumia recta*	N/A	Threatened	Streams/Rivers
Fawnsfoot	*Truncilla donaciformis*	N/A	Threatened	Streams/Rivers
Threehorn wartyback	*Obliquaria reflexa*	N/A	Threatened	Streams/Rivers
Lake sturgeon	*Acipenser fulvescens*	N/A	Endangered	Streams/Rivers
Cisco	*Coregonus artedi*	N/A	Endangered	Streams/Rivers
Longnose sucker	*Catostomus catostomus*	N/A	Endangered	Streams/Rivers
Pugnose minnow	*Opsopoeodus emiliae*	N/A	Endangered	Streams/Rivers
Spotted gar	*Lepisosteus oculatus*	N/A	Endangered	Streams/Rivers
Western banded killifish	*Fundulus diaphanous menona*	N/A	Endangered	Streams/Rivers
American eel	*Anguilla rostrate*	N/A	Threatened	Streams/Rivers
Channel darter	*Percina copelandi*	N/A	Threatened	Streams/Rivers
Greater redhorse	*Moxostoma valenciennesi*	N/A	Threatened	Streams/Rivers
Eastern massasauga	*Sistrurus catenatus*	Threatened	Endangered	Wetlands & Prairies
Blanding's turtle	*Emydoidea blandingii*	N/A	Threatened	Marshes, Ponds, Lakes & Streams
American bittern	*Botaurus lentiginosus*	N/A	Endangered	Wetlands

Black-crowned night-heron	*Nycticorax nycticorax*	N/A	Threatened	Wetlands & Ponds
Black tern	*Childonias niger*	N/A	Endangered	Marshes
Cattle egret	*Bubulcus ibis*	N/A	Endangered	Pastures & Fields
Common tern	*Sterna hirundo*	N/A	Endangered	Beaches
King rail	*Rallus elegans*	N/A	Endangered	Marshes
Least bittern	*Ixobrychus exilis*	N/A	Threatened	Wetlands
Northern harrier	*Circus hudsonis*	N/A	Endangered	Marshes & Grasslands
Sandhill crane	*Grus canadensis*	N/A	Threatened	Wetlands & Agricultural land
Trumpeter swan	*Cygnus buccinator*	N/A	Threatened	Wetlands
Upland sandpiper	*Bartramia longicauda*	N/A	Endangered	Dry Grasslands

The response from ODNR and USFWS indicated that the Project is within the range of the federally- and state-endangered Indiana Bat, the federally-threatened and state-endangered Northern long-eared bat, the state-endangered Little brown bat, and the state-endangered Tricolored bat. Minimal tree clearing will be associated with the proposed Project and will take place after October 1 and before April 1 to avoid impacts to these species as recommended by the USFWS and ODNR. The ODNR also recommended that a desktop habitat assessment be conducted to determine if there are potential hibernaculum(a) present within the Project area. An assessment was conducted by AECOM (Exhibit 8) which concluded that no potential hibernacula are present within the Project area. No impacts to these species are anticipated. The ODNR provided a letter of concurrence to this statement on November 22, 2021 (Exhibit 9).

The response from ODNR indicated that the Project is within the range of the state-endangered Eastern pondmussel, the state-threatened Black sandshell, Fawnsfoot, and Threehorn wartyback. No in-water work is planned for this Project, so impacts to these mussel species are not expected.

The response from ODNR indicated that the Project is within the range of the state-endangered Lake sturgeon, Cisco, Longnose sucker, Pugnose Minnow, Spotted gar, and Wastern banded killifish, as well as the state-threatened American eel, Channel darter, and Greater redhorse. There is no in-water work planned for this Project, so impacts to these fish species are not expected.

The response from ODNR indicated that the Project is within the range of the state-endangered and federally-threatened Eastern massasauga. According to the ODNR, due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species. (*See* Exhibit 6)

The response from ODNR indicated that the Project is within the range of the state-threatened Blanding's turtle. According to the ODNR, due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species. (*See* Exhibit 6)

The response from ODNR indicated that the state-endangered American bittern, Black tern, Cattle egret, Common tern, Northern harrier, Upland sandpiper, and King rail, as well as the state threatened Black-crowned night-heron, Least bittern, Sandhill crane, and Trumpeter swan are within range of the Project. These species can typically be found in grasslands, marshes, and wetlands. These species tend to nest from roughly April through August in habitat similar to that which is potentially within the Project area. ATSI contracted AECOM to conduct a habitat assessment of the Project area to confirm if potential habitat is present for the bird species listed in the ODNR response. It was determined that potential habitat is present within the Project area for the Black-crowned night heron, the Least bittern, and the Upland sandpiper. This assessment is also included

in Exhibit 8. As per the ODNR's recommendation, disturbance to these areas will be limited to outside the nesting season for each of these species. ODNR also provided concurrence of this avoidance practice on November 22, 2021 (Exhibit 9).

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

The ODNR Office of Real Estate researched 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 natural areas within one (1) mile of the Project area. The ODNR's Office of Real Estate's response on November 24, 2020 indicated that the Port Clinton Lakefront Preserve – City of Port Clinton is located within one (1) mile of the identified Project area. The Port Clinton Lakefront Preserve is approximately 0.7-mile away from the Project, and no direct or indirect impacts to the preserve are anticipated.

AECOM conducted a wetland and stream assessment of the Project area. As part of the investigation, AECOM conducted a wetland and waterways delineation for the Project in Ottawa & Erie Counties, Ohio on January 14-17, 2020, and on October 7, 2020. The Project Study Area is approximately 26.18-acres in size. The Project Study Area included the corridor for the Greenfield-Lakeview 138 kV Transmission Line (as shared with the Lakeview-Ottawa 138 kV Transmission Line) as well as a 100-foot buffer. Land use surrounding the Project Study Area was observed to be primarily agricultural. Three (3) perennial streams (Designated as LO-01, LO-02, & LO-03) and fifteen (15) wetlands (Designated as LG-01, LO-01 thru LO-13, and LO-40) were identified within the Project Study Area. The delineated wetlands include ten (10) Palustrine Emergent (PEM), three (3) Palustrine Scrub/Shrub (PSS), one (1) PEM/PSS, and one (1) PEM/PSS/Palustrine Unconsolidated Bottom. See Exhibit 10 for further details and descriptions of delineated features located within the Project Study Area. Due to location of the transmission structures associated with this Project, construction matting will be used as temporary access to perform the necessary work. The Project will not result in the deposition of

permanent fill material in any of the delineated wetlands. The perennial stream located within the Project Area will be avoided during construction.

Several flood plains are located throughout the Project Area based on a review of online FEMA Flood Insurance Rate Mapping. The Project will not result in any permanent elevation changes within any of the mapped floodplain areas thus resulting in no encroachment on any regulated floodplains. Exhibit 11 depicts the location of the regulated flood plains floodplains in relation to the Project Area.

A review of the National Conservation Easement Database (www.conservationeasement.us) revealed no conservation easements in the Project Area.

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

Construction and operation of the proposed Project will be in accordance with the requirements specified in the latest revision of the NESC as adopted by the PUCO and will meet all applicable safety standards established by the Occupational Safety and Health Administration.

No other or unusual conditions are expected that will result in significant environmental, social, health or safety impacts.

4906-6-07: Documentation of Construction Notice Transmittal and Availability for Public Review

This Construction Notice application is being provided concurrently to the following officials in the City of Port Clinton and Portage Township, Ottawa County, Ohio, and Perkins Township, Erie County, Ohio.

Ottawa County

Mr. Mark Stahl
Ottawa County Commissioner
315 Madison St.
Port Clinton, OH 43452

Mr. Mark Coppeler
Ottawa County Commissioner
315 Madison St.
Port Clinton, OH 43452
mcoppeler@co.ottawa.oh.us

Mr. Don Douglas
Ottawa County Commissioner
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ddouglas@co.ottawa.oh.us

Mr. Mark Messa, Director
Ottawa County Regional Planning Commission
315 Madison St.
Port Clinton, OH 43452

Mr. Ronald Lajti, Jr.
Ottawa County Engineer
315 Madison St.
Port Clinton, OH 43452

Mr. Mike Libben
Ottawa County Soil & Water
240 West Lake Street
Oak Harbor, OH 43449

Port Clinton

Mayor Michael Snider
City of Port Clinton
1868 E. Perry St.
Port Clinton, OH 43452

Ms. Lisa Sarty
President of Council
1868 E. Perry St.
Port Clinton, OH 43452

Mr. Gabe Below, Councilmember
Port Clinton, Ward 4
1868 E. Perry St.
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Mr. Tracy Colston
Port Clinton Safety Service Director
1868 E. Perry St.
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Portage Township

Ms. Molly B Sass
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Mr. Sam Conte
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Mr. Keith Heileman
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Ms. Judith Johannsen
Portage Township Fiscal Officer
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Ottawa County Library

Ms. Lina Hall, Director
Oak Harbor Public Library
147 W. Main St
Oak Harbor, OH 43449

Erie County

Mr. Steve Shoffner
Erie County Commissioner
2900 Columbus Ave
Sandusky, OH 44870

Mr. John Farschman
Erie County Engineer
2700 Columbus Ave
Sandusky, OH 44870

Mr. Patrick Shenigo
Erie County Commissioner
2900 Columbus Ave
Sandusky, OH 44870

Mr. Tom Wensink, Chairman
Erie Conservation District
2900 Columbus Ave, Room 131
Sandusky, OH 44870

Mr. Mathew Old
Erie County Commissioner
2900 Columbus Ave
Sandusky, OH 44870

Mr. Timothy C. King, Senior Planner
Erie Regional Planning Commission
2900 Columbus Ave
Sandusky, Ohio 44870

Perkins Township

Mr. Timothy Coleman, Chairperson
Perkins Township Trustee
2610 Columbus Ave.
Sandusky, OH 44870

Mr. James Lang
Perkins Township Trustee
2610 Columbus Ave.
Sandusky, OH 44870

Mr. Jeffrey Ferrell
Perkins Township Trustee
2610 Columbus Ave.
Sandusky, OH 44870

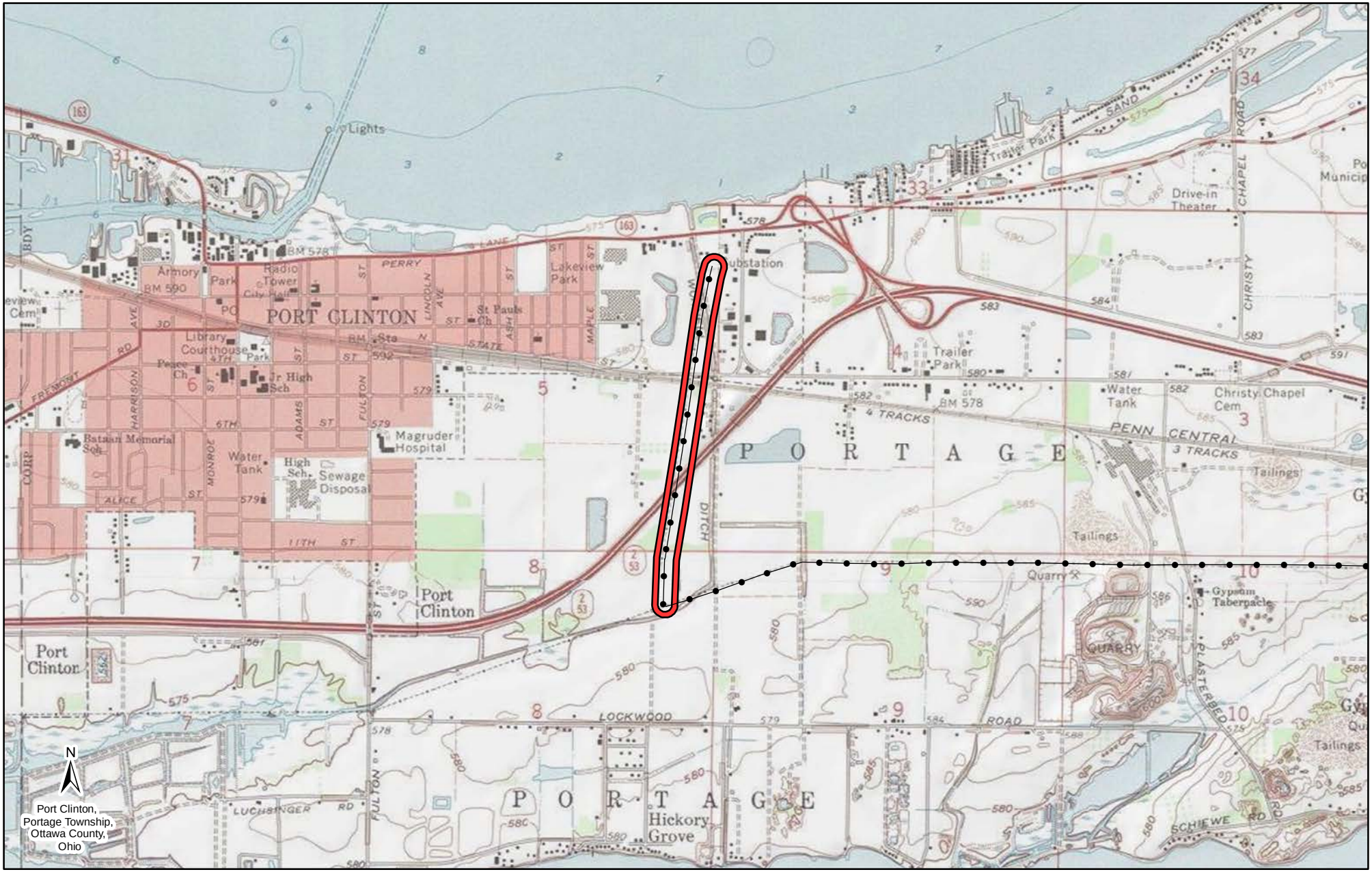
Ms. Diane Schaefer
Perkins Township Fiscal Officer
2610 Columbus Ave.
Sandusky, OH 44870

Erie County Library

Mr. Anthony Cummings
President of the Board
Sandusky Library
114 W. Adams St.
Sandusky, OH 44870

Copies of the transmittal letters to these public officials and libraries were served in accordance with OAC Rule 4906-6-07 and are enclosed herewith as proof of compliance with OAC Rule 4906-6-07(B) (notice requirement to local officials in OAC Rule 4906-6-07 (A)(1) and to libraries in OAC Rule 4906-6-07 (A)(2)).

Information is posted on www.firstenergycorp.com/about/transmission_project/ohio.html on how to request an electronic or paper copy of this Construction Notice application. The link to website is being provided to meet the requirement of OAC Rule 4906-6-07(B) and to provide the OPSB with proof of compliance with the notice requirements in OAC Rule 4906-6-07(A)(3).



LEGEND:

- Project Area
- Greenfield-Lakeview 138 kV Transmission Line

0 1,000 2,000 4,000

Feet

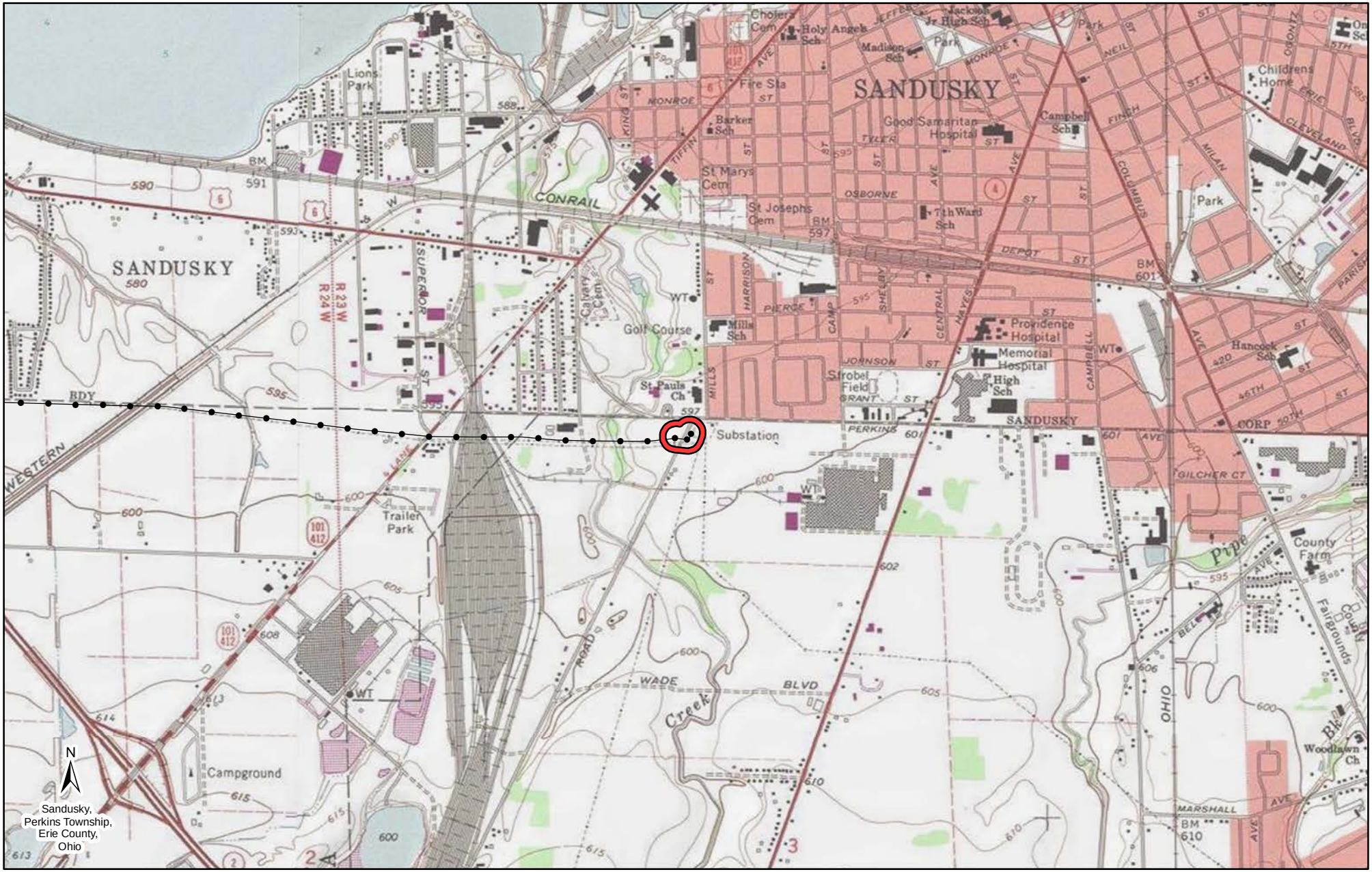
Reference:
USGS Topographical Overlay

Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
Projection: Lambert Conformal Conic; Units: Foot US

EXHIBIT 1

FirstEnergy

Greenfield-Lakeview 138 kV Transmission Line Reconductor and Rebuild Project



LEGEND:

- Project Area
- Greenfield-Lakeview 138 kV Transmission Line

0 1,000 2,000 4,000

Feet

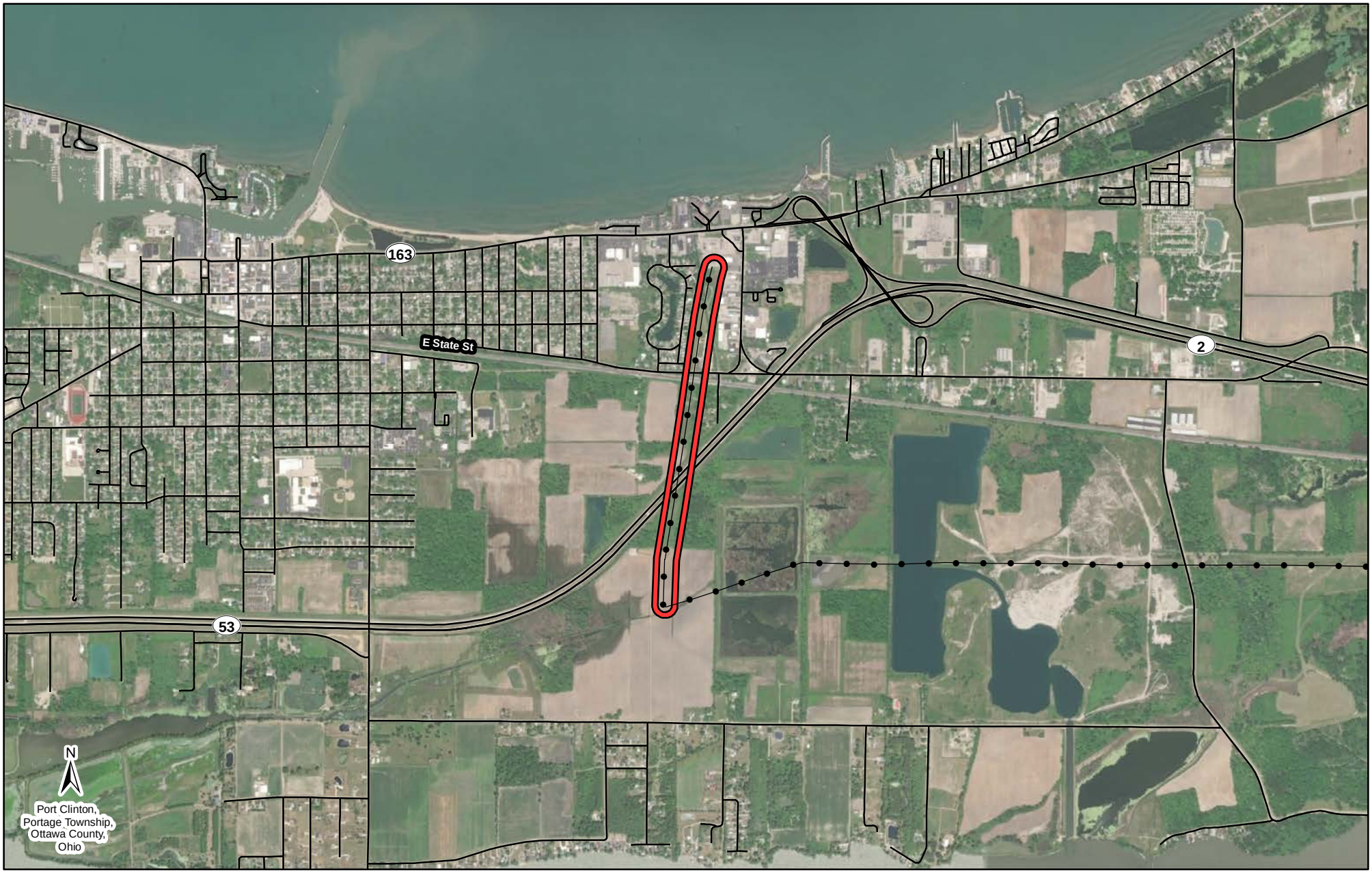
Reference:
USGS Topographical Overlay

Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
Projection: Lambert Conformal Conic; Units: Foot US

EXHIBIT 1

FirstEnergy

Greenfield-Lakeview 138 kV Transmission Line Reconductor and Rebuild Project



LEGEND:

- Project Area
- Greenfield-Lakeview 138 kV Transmission Line
- Roads

0 1,000 2,000 4,000

Feet

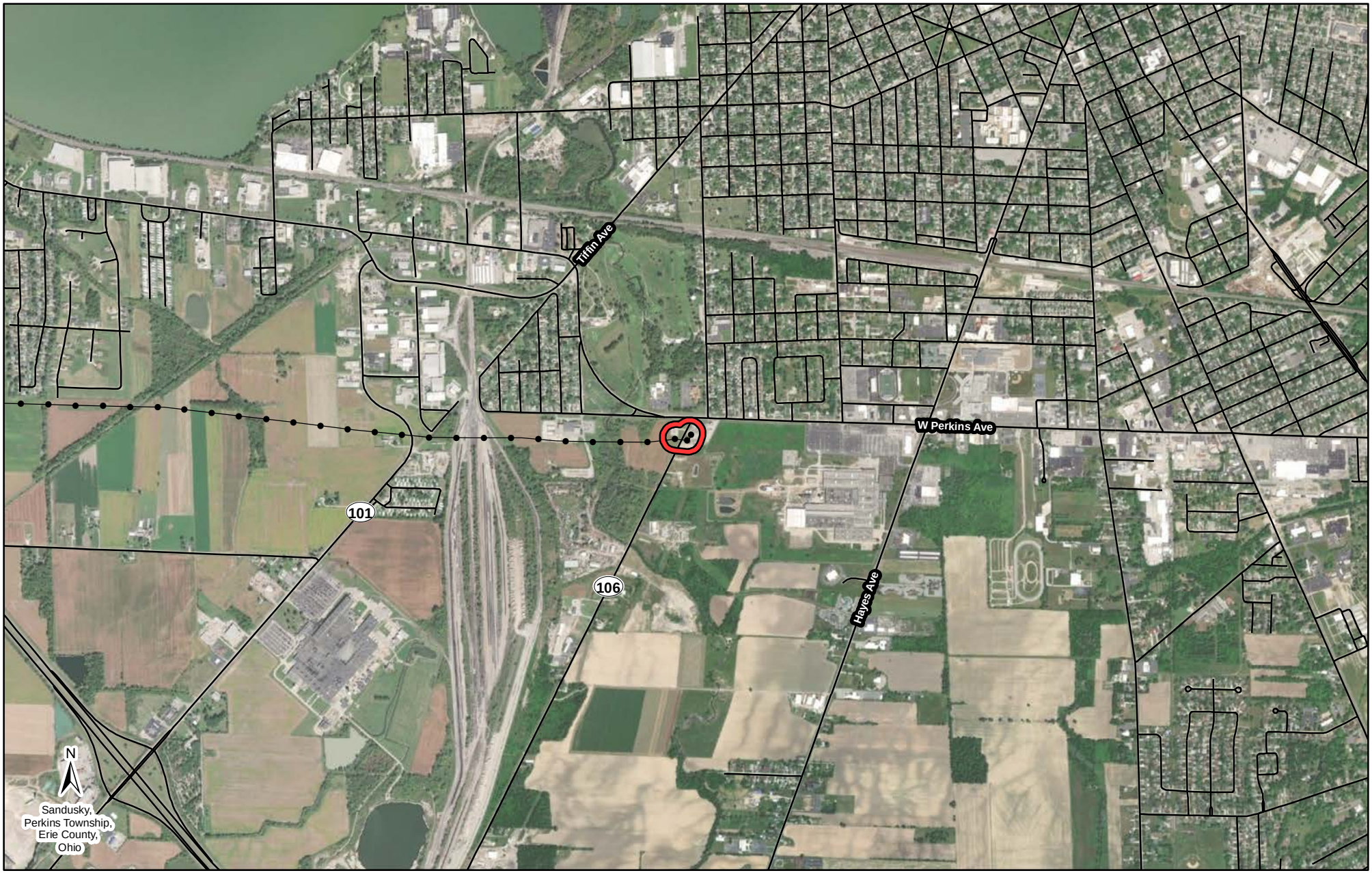
Reference:
ESRI Aerial Imagery; ODOT

Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
Projection: Lambert Conformal Conic; Units: Foot US

EXHIBIT 2

FirstEnergy

Greenfield-Lakeview 138 kV Transmission Line Reconductor and Rebuild Project



LEGEND:

- Project Area
- Greenfield-Lakeview 138 kV Transmission Line
- Roads

0 1,000 2,000 4,000

Feet

Reference:
ESRI Aerial Imagery; ODOT

Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
Projection: Lambert Conformal Conic; Units: Foot US

EXHIBIT 2

FirstEnergy

Greenfield-Lakeview 138 kV Transmission Line Reconductor and Rebuild Project

DETAIL 1
SEE SHEET 2

LAKEVIEW SUB

#1458 #1457 #1456 #1455 #1454 #1453 #1452 #1397 #1396 #1395 #1394 #1393 #1392 #1391 #1390 #1389 #1388 #1387 #1386 #1385 #1384 #1383 #1382 #1381 #1380 #1379 #1378 #1377 #1376 #1375 #1374 #1373 #1372 #1371 #1370 #1369 #1368 #1367 #1366 #1364 #1363 #1362 #1361 #1360 #1359 #1358 #1357 #1356 #1355 #1354 #1353 #1352 #1351 #1350 #1349 #1348 #1347 #1346 #1345 #1344 #1343 #1342 #1341 #1340 #1339 #1338 #1337 #1336 #1335 #1334 #1333 #1332 #1331 #1330 #1329 #1328 #1327 #1326 #1325 #1324 #1323 #1322 #1321 #1320 #1319 #1318 #2527 #1317 #1316 #1365

GREENFIELD SUB

#1315

SANDUSKY BAY

OTTAWA COUNTY
ERIE COUNTY

OTTAWA AND ERIE COUNTIES
STATE OF OHIO

DETAIL 2
SEE SHEET 2

2 2 269 6 101

LEGEND

- WOOD TRANSMISSION STRUCTURE (NEW)
- SUBSTATION
- STEEL TRANSMISSION STRUCTURE (NEW)
- EXISTING LATTICE TOWER
- TRANSMISSION PROJECT CENTERLINE
- RAILROAD
- ROADWAY
- OTHER TRANSMISSION OR DISTRIBUTION LINE
- WATER'S EDGE

0' 4000' 8000'
SCALE IN FEET

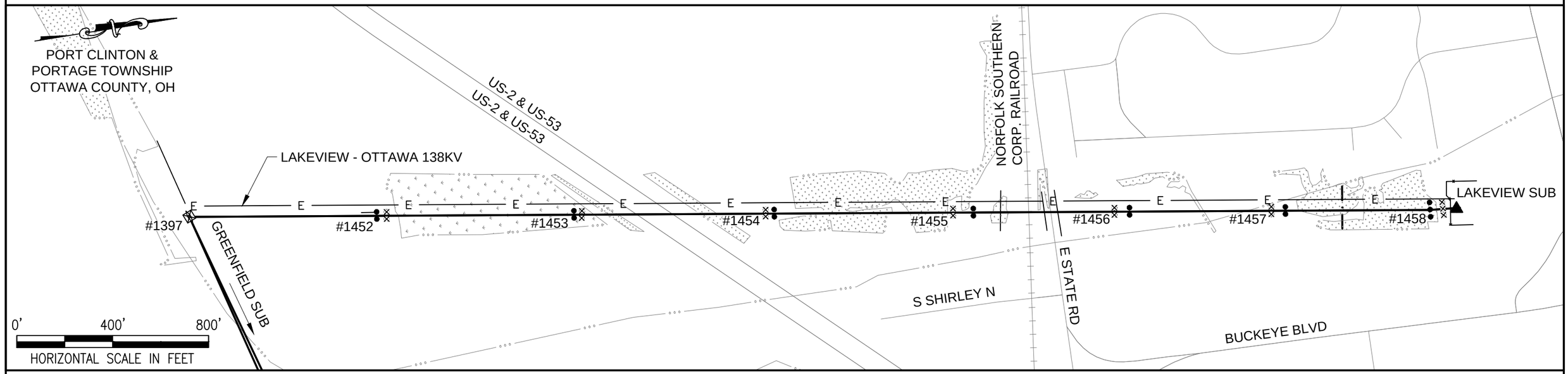
PAPER SIZE: 17X11

FirstEnergy Transmission Design

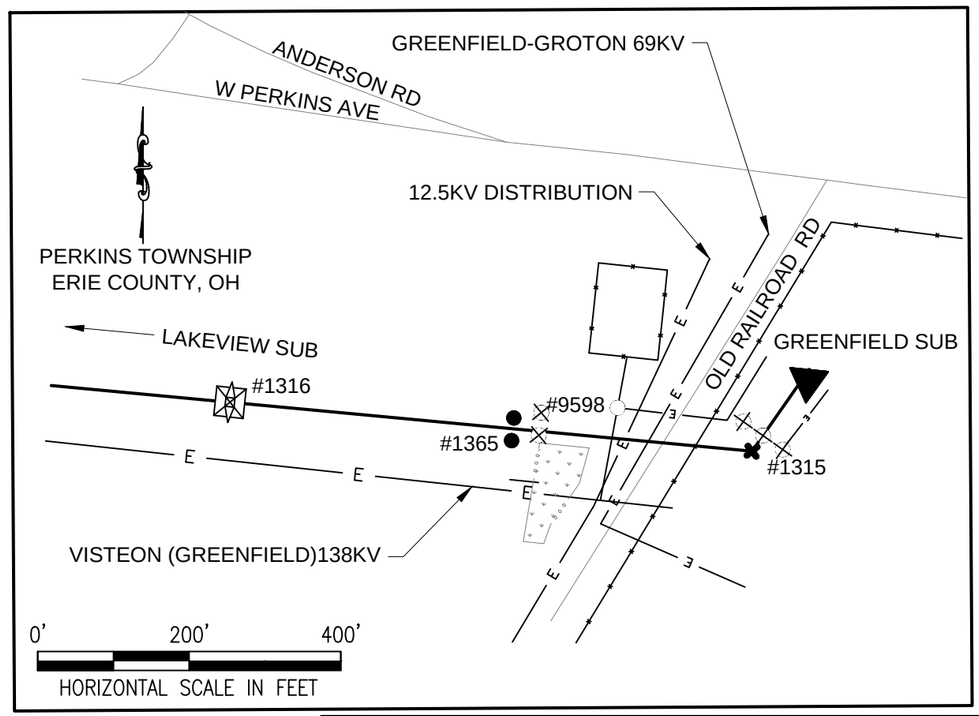
GREENFIELD–LAKEVIEW
138KV PARTIAL REBUILD

GENERAL LAYOUT
SHEET 1 OF 2

EXHIBIT 3



DETAIL 1



DETAIL 2

LEGEND

- WOOD H-FRAME TRANSMISSION STRUCTURE (NEW)
- WOOD H-FRAME TRANSMISSION STRUCTURE (TO BE REMOVED)
- WOOD 3 POLE TRANSMISSION STRUCTURE (NEW)
- WOOD 3 POLE TRANSMISSION STRUCTURE (TO BE REMOVED)
- SUBSTATION
- STEEL MONOPOLE TRANSMISSION STRUCTURE (NEW)
- EXISTING LATTICE TOWER
- WETLANDS
- WATER'S EDGE
- RAILROAD
- OTHER TRANSMISSION OR DISTRIBUTION LINE
- TRANSMISSION PROJECT CENTERLINE
- PROPERTY LINE
- FENCE

FirstEnergy Transmission Design

GREENFIELD–LAKEVIEW
138KV PARTIAL REBUILD

GENERAL LAYOUT
SHEET 2 OF 2

EXHIBIT 3

PAPER SIZE: 17X11

ATSI Transmission Zone: Baseline
Lakeview-Greenfield 138 kV Reconductor and Upgrades

Below 200kV

Problem Statement:

2018 RTEP Gen Deliverability Thermal Violation Winter 2023 Case

- For the common tower failure tripping Davis Besse – X1-027A & Beaver – Hayes 345 kV Lines, results in the thermal overload of Lakeview-Greenfield 138 kV line (GD-W215).

Potential Solution:

Lakeview-Greenfield 138 kV Reconductor and Substation Upgrades

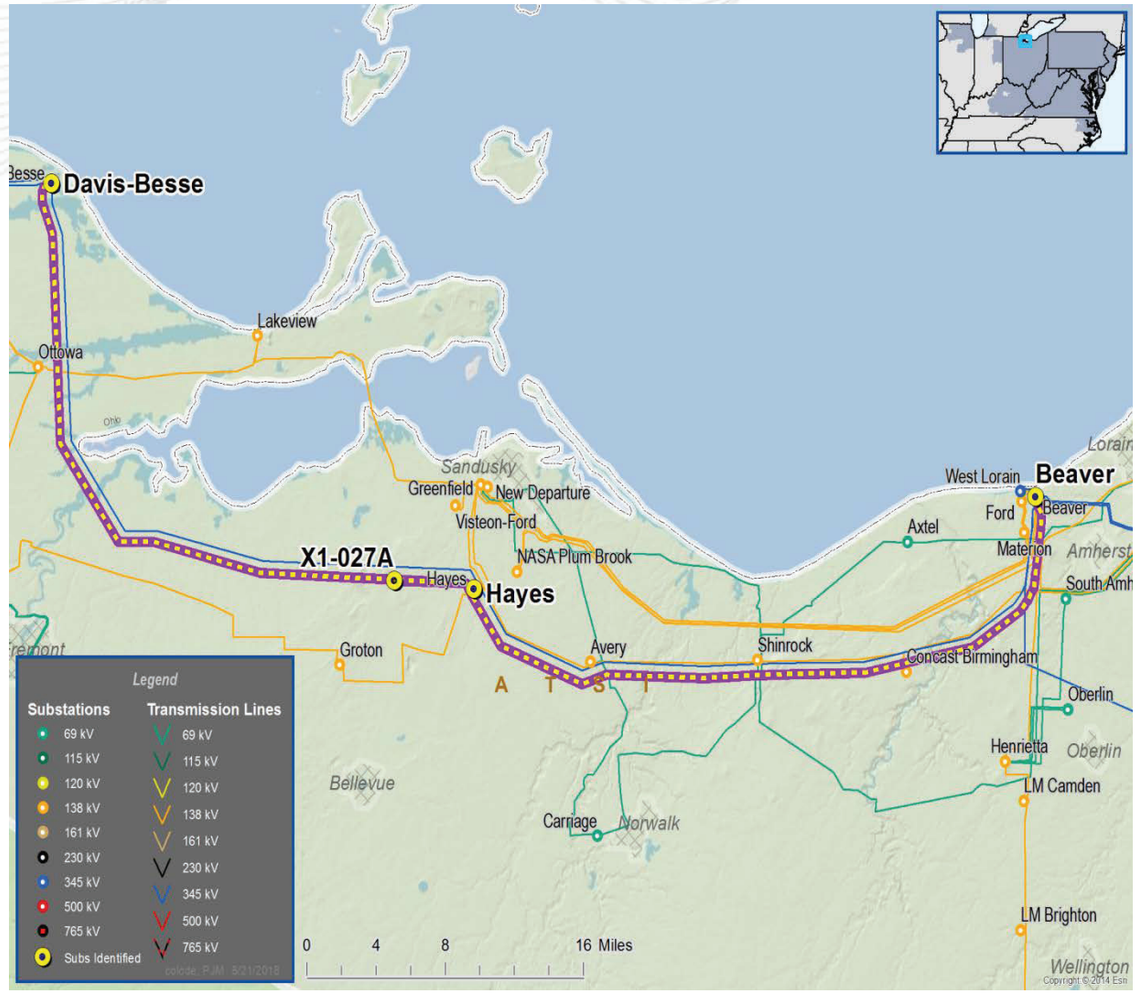
- At Lakeview substation, Greenfield exit, replace 795 ACSR substation conductor with 795 ACSS; upgrade relays to standard relay panel.
- At Greenfield substation, Lakeview exit, replace 795 ACSR line drop and 1000 CU & 795 ACSR substation conductors with 795 ACSS; upgrade relays to standard relay panel.
- For the Lakeview-Greenfield 138 kV line, reconductor the existing 795 ACSR conductor (approximately 1.2 miles at Lakeview end and last span at Greenfield end) with 795 ACSS.
  - Old rating: 315 / 361 MVA WN / WE
  - New rating: 360 / 456 MVA WN / WE

Estimated Project Cost: $2.4 M

Projected IS Date: 12/01/2023

Required IS Date: 12/01/2023

Status: Conceptual



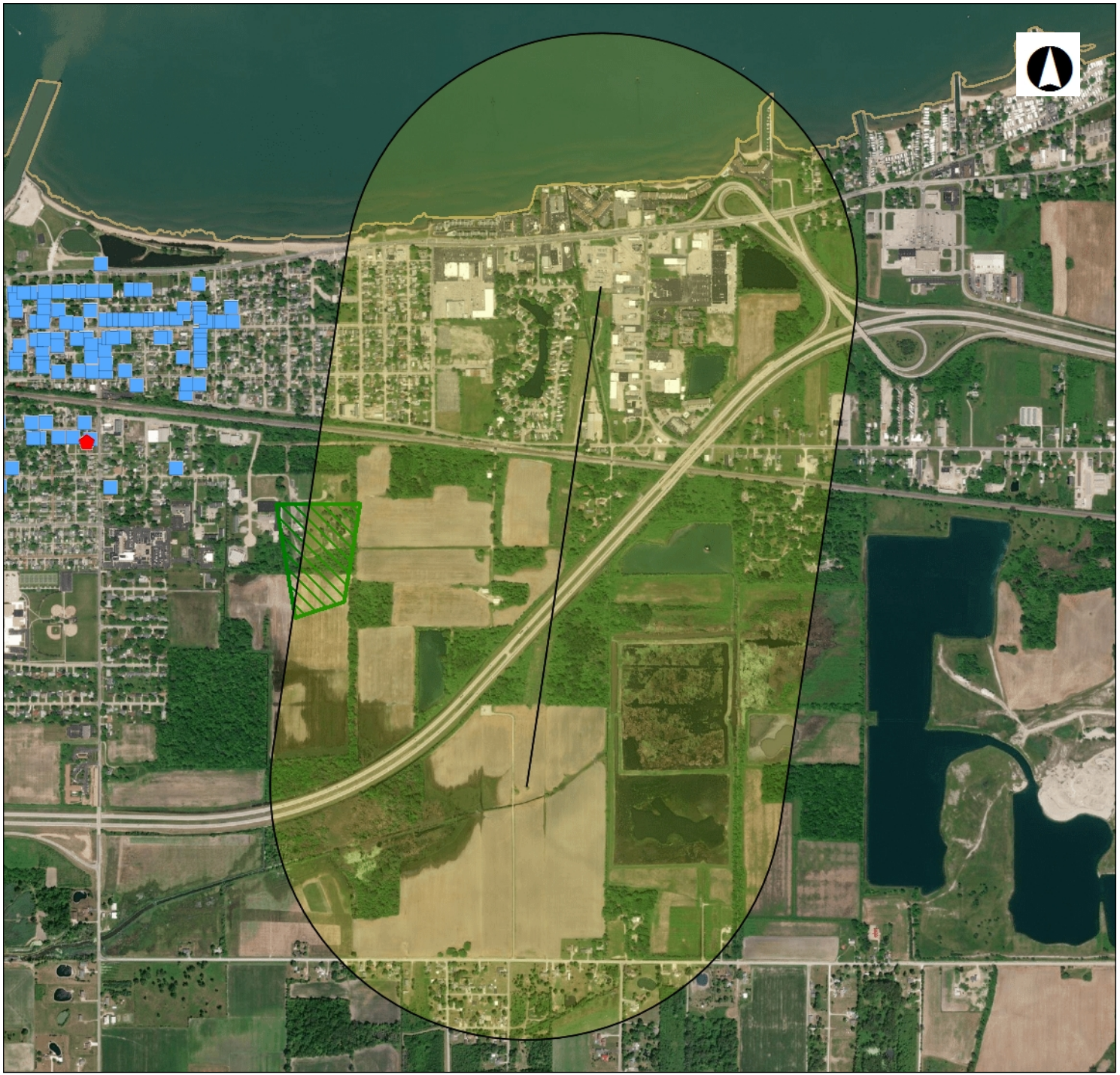


Exhibit 5

OHIO HISTORY CONNECTION

State Historic Preservation Office

Legend

- NR Listings
  - Listed
  - National Historic Landmark
  - Delisted
- Determinations of Eligibility
  - DOE
  - Demolished
- Historic Structures
- Historic Bridges
- Historic Tax Credit Projects
- Local Designations
- OGS Cemeteries
  - Confident
  - Not Confident
- Historic Markers
- Dams
- UTM Zone Split
- NR Boundaries

0 0.30 0.61 Miles

1: 24,000

Copyright/Disclaimer

Datum: [Datum]

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

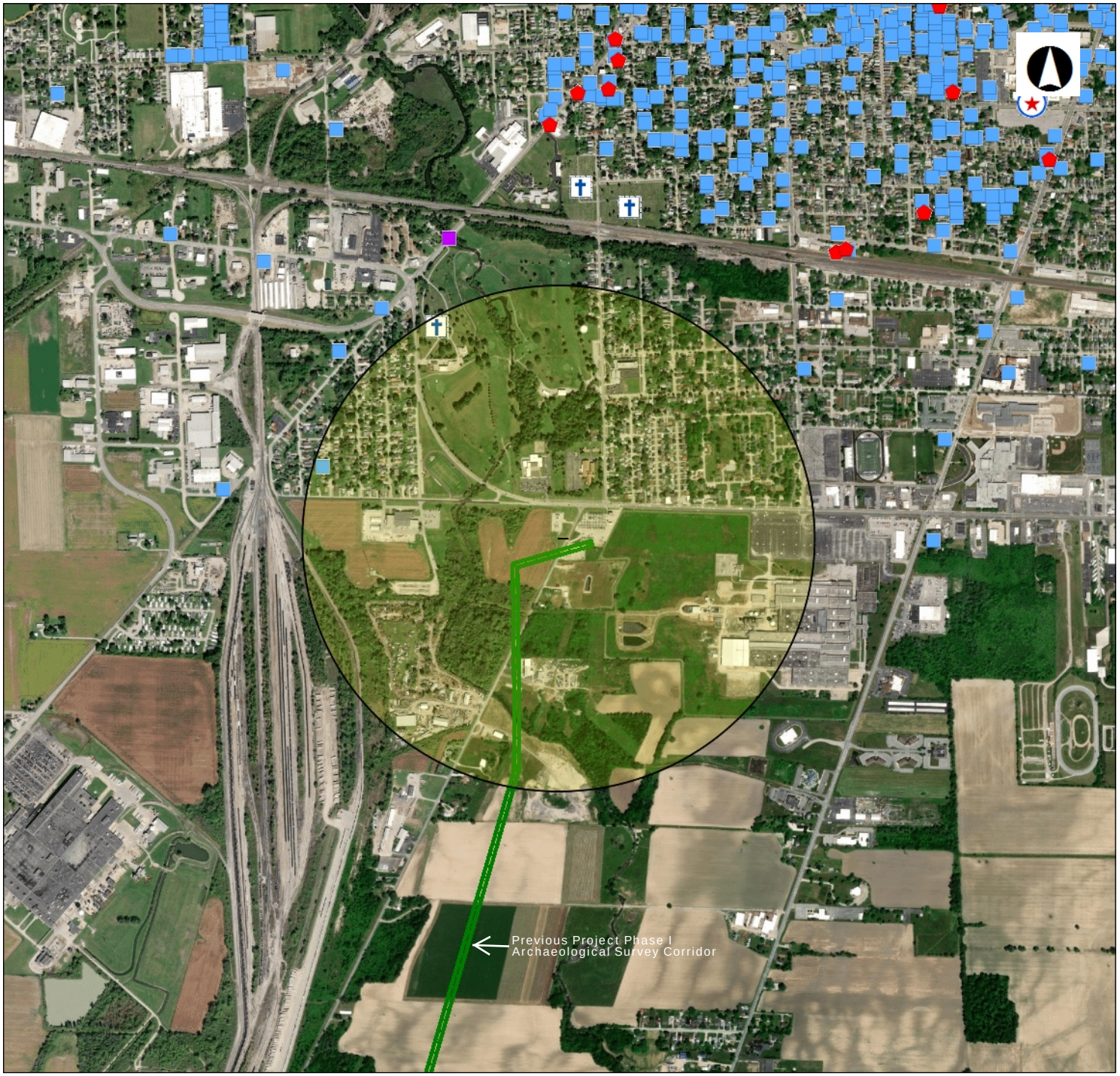


Exhibit 5

OHIO HISTORY CONNECTION

State Historic Preservation Office

Legend

- NR Listings
  - Listed
  - National Historic Landmark
  - Delisted
- Determinations of Eligibility
  - DOE
  - Demolished
- Historic Structures
- Historic Bridges
- Historic Tax Credit Projects
- Local Designations
- OGS Cemeteries
  - Confident
  - Not Confident
- Historic Markers
- Dams
- UTM Zone Split
- NR Boundaries

0 0.30 0.61 Miles

1: 24,000

Datum: [Datum]

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

Exhibit 6

Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR — MARY MERTZ, DIRECTOR

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

November 24, 2020

Brian Miller
AECOM
525 Vine Street
Cincinnati, Ohio 45202

Re: 20-945; Lakeview-Greenfield 138kV Transmission Line Rebuild Project

Project: The Project consists of the rebuild of 1.16 miles of an existing 138kV transmission line (two disconnected segments).

Location: The proposed project is located in Portage and Perkins Township, Ottawa and Erie Counties, 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:

Schweinitz' umbrella-sedge (*Cyperus schweinitzii*), T
Eastern pondmussel (*Ligumia nasuta*), E
Black sandshell (*Ligumia recta*), T
Threehorn wartyback (*Obliquaria reflexa*), T
Round pigtoe (*Pleurobema sintoxia*), SC
Salamander mussel (*Simpsonaias ambigua*), SC
Fawnsfoot (*Truncilla donaciformis*), T
Eastern foxsnake (*Pantherophis vulpinus*), SC
Port Clinton Lakefront Preserve – City of Port Clinton

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 Ottawa County portion of the project is within the vicinity of records for the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, and the little brown bat (*Myotis lucifugus*), a state endangered species. The Erie County portion of the project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in the area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH $\geq$ 20 if possible.

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species:

State Endangered
eastern pondmussel *(Ligumia nasuta*)

State Threatened
black sandshell (*Ligumia recta*)
fawnsfoot (*Truncilla donaciformis*)
threehorn wartyback (*Obliquaria reflexa*)

Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the following listed fish species:

State Endangered
lake sturgeon (*Acipenser fulvescens*)
cisco (*Coregonus artedi*)
longnose sucker (*Catostomus catostomus*)
pugnose minnow (*Opsopoeodus emiliae*)
spotted gar (*Lepisosteus oculatus*)
western banded killifish (*Fundulus diaphanus menona*)

State Threatened
American eel (*Anguilla rostrata*)
channel darter (*Percina copelandi*)
greater redhorse (*Moxostoma valenciennesi*)

The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat within 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 Blanding's turtle (*Emydoidea blandingii*), a state threatened species. This species inhabits marshes, ponds, lakes, streams, wet meadows, and swampy forests. Although essentially aquatic, the Blanding's turtle will travel over land as it moves from one wetland to the next. Due to the location, the type of habitat within 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. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the black-crowned night-heron *(Nycticorax nycticorax*), a state-threatened bird. Night-herons are so named because they are nocturnal, conducting most of their foraging in the evening hours or at night, and roost in trees near wetlands and waterbodies during the day. Night herons are migratory and are typically found in Ohio from April 1 through December 1 but can be found in more urbanized areas with reliable food sources year-round. Black-crowned night-herons primarily forage in wetlands and other shallow aquatic habitats, and roost in trees nearby. These night-herons nest in small trees, saplings, shrubs, or sometimes on the ground, near bodies of water and wetlands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the black tern (*Chlidonias niger*), a state endangered bird. The black tern prefers large, undisturbed inland marshes with fairly dense vegetation and pockets of open water. They nest in various kinds of marsh vegetation but cattail marshes are generally favored. Nests are built on top of muskrat houses or on top of floating vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat from April 1 to June 30 to reduce impacts to this species. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the cattle egret (*Bubulcus ibis*), a state endangered bird. Cattle egrets are not strictly wetland birds. They often forage in dry pastures and fields. Egrets nest in colonies and will build a nest out of sticks and other materials wherever it can be supported. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 15. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the common tern (*Sterna hirundo*), a state endangered bird. The preferred nesting sites of common terns are natural or man-made islands that are free of mammalian predators and human disturbance. They will also utilize mainland beaches and dredge disposal areas but only when islands are unavailable. The common tern nests in colonies. Their eggs are laid in a grass-lined depression in the sand. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the king rail (*Rallus elegans*), a state endangered bird. Nests for this species are deep bowls constructed out of grass and usually hidden very well in marsh vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a

nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

The project is within the range of the trumpeter swan (*Cygnus buccinator*), a state threatened bird. Trumpeter swans prefer large marshes and lakes ranging in size from 40 to 150 acres. They like shallow wetlands one to three feet deep with a diverse mix of plenty of emergent and submergent vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to June 15. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

Mike Pettegrew
Environmental Services Administrator (Acting)

Exhibit 7

From: Miller, Brian
To: Ruggiero, Augustine
Cc: Smith, Michelle (Cincinnati)
Subject: [EXTERNAL] FW: First Energy, Lakeview-Greenfield 138 kV Line Rebuild Ottawa and Erie County Ohio
Date: Tuesday, October 20, 2020 9:42:49 AM
Attachments: pastedImagebase640.png
pastedImagebase641.png
image002.png

Auggie,

Please find below for a copy of the USFWS response for the Lakeview-Greenfield Project. The only species of concern for this Project is the Indiana bat and northern long eared bat. Some good news, no hits were identified regarding the orchid or bald eagle.

Thanks,

Brian J. Miller
Senior Ecologist

D +1-412-808-1844
M +1-412-667-9172
brian.miller1@aecom.com

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T +1-412-503-4700
aecom.com

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FORTUNE WORLD'S MOST ADMIRED COMPANIES 2018

From: Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, October 20, 2020 9:38 AM
To: Miller, Brian <brian.miller1@aecom.com>
Cc: Smith, Michelle (Cincinnati) <michelle.smith@aecom.com>; Auggie Ruggiero <aruggiero@firstenergycorp.com>
Subject: [EXTERNAL] First Energy, Lakeview-Greenfield 138 kV Line Rebuild Ottawa and Erie County Ohio

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# 03E15000-2021-TA-0119

Dear Mr. Miller,

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

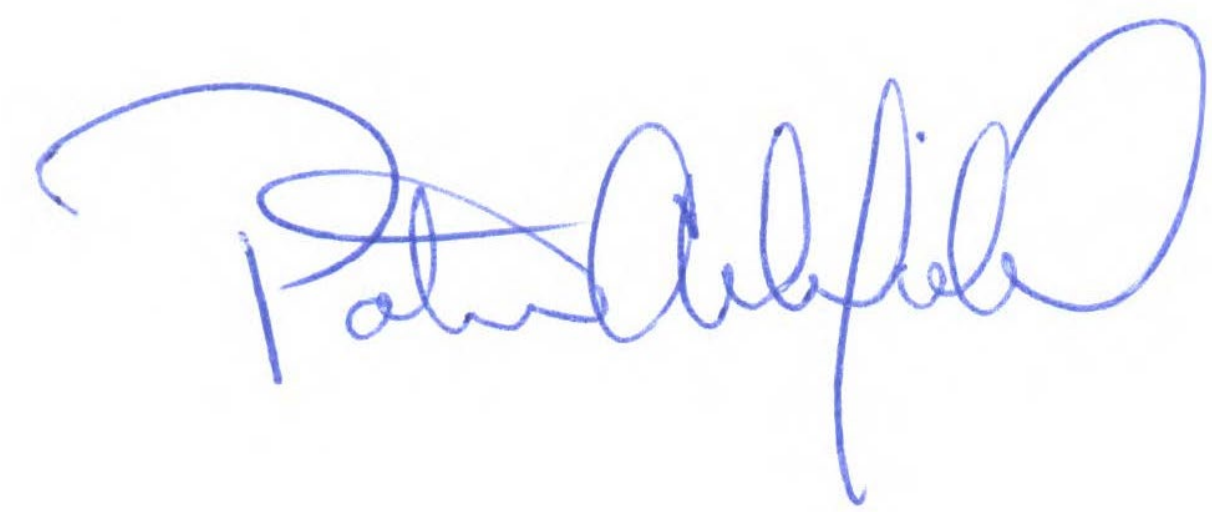
FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) to avoid impacts to the federally listed endangered Indiana 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.

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 Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@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
Field Office Supervisor

Exhibit 8

Lakeview-Greenfield 138kV Transmission Line Rebuild Project

BIRD HABITAT ASSESSMENT AND DESKTOP ASSESSMENT FOR WINTER BAT HABITAT REPORT

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1.0 Introduction

American Transmission Systems, Incorporated (ATSI), a FirstEnergy company, is planning to rebuild the Lakeview-Greenfield 138kV Transmission Line (Project) in Ottawa and Erie Counties, Ohio. The Project includes the rebuild of approximately 1.6 miles of the existing Lakeview-Greenfield 138kV Transmission Line (two disconnected segments), in Portage Township, Ottawa County and Perkins Township, Erie County, Ohio. The first segment is a one mile rebuild of the existing transmission line starting at the Lakeview Substation and terminating at Structure 1397 in Portage Township, Ottawa County, Ohio. The second segment is 0.16-mile rebuild of the existing transmission line that originates at the Greenfield Substation and terminates at Structure 1316 in Perkins Township, Erie County, Ohio. The Project is located on Port Clinton, Vickery, and Sandusky, Ohio U.S. Geologic Survey 7.5" topographic quadrangle (**Appendix A, Figure 1 – Agency Overview Map**).

The Project is designed to be predominately within the existing maintained transmission line right-of-way (ROW) located mostly within active agricultural fields. Ancillary areas such as pull sites, turn arounds, lay-down yards, and access roads have not been fully identified at this time. However, ATSI plans to utilize existing access roads and travel lanes within the existing maintained ROW, to the extent practicable. The Project is not expected to require substantial clearing of forested habitat, although some trimming and minimal clearing for access roads, incremental ROW widening, potential reroutes, and maintenance along the existing ROW may be necessary. In order to mitigate for potential effects to state and federal listed bat species, ATSI intends to clear trees between October 1st and March 31st to avoid impacts to the species.

Initial coordination with the United States Fish and Wildlife Service (USFWS) indicated federally listed Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) as being present within the Project area and implementation of tree clearing between October 1 and March 31 would not adversely affect these listed species. Regarding the Ohio Department of Natural Resources (ODNR), the ODNR indicated that the Project is within the range of seven state-listed endangered birds (American Bittern [*Botaurus lentiginosus*], Black Tern [*Chlidonias niger*], Cattle Egret [*Bubulcus ibis*], Common Tern [*Sterna hirundo*], King Rail [*Rallus elegans*], Northern Harrier [*Circus hudsonius*], Upland Sandpiper [*Bartramia longicauda*]), and four state-listed threatened birds (Black-Crowned Night-Heron [*Nycticorax nycticorax*], Least Bittern [*Ixobrychus exilis*], Sandhill Crane [*Grus canadensis*], and Trumpeter Swan [*Cygnus buccinator*]). Additionally, ODNR indicated the Project is within the range of two state endangered and federally listed bat species (northern long-eared bat and Indiana bat), and two state endangered species (Little brown bat [*Myotis lucifugus*] and Tricolored bat [*Perimyotis subflavus*]). Due to the location, type of habitat within the project area, and/or avoidance of instream work associated with the Project, the identified freshwater mussels, fish species, and reptiles listed in the ODNR response were concluded by the ODNR as not likely to be impacted by the Project and no further coordination would be warranted (**Appendix B, Agency Correspondence**).

Due to the nature of the construction work to be completed and ODNR's seasonal timing restrictions associated with the nesting ecology of the listed bird species, ATSI retained a qualified bird specialist, Sharon Farris, from AECOM Technical Services, Inc. (AECOM), to assess habitat suitability for these species within the Project limits. Additionally, ATSI plans to utilize the existing ROW and/or existing clear areas, to the extent practicable and intends to clear trees between October 1st and March 31st to mitigate potential effects to the federal and state listed bat species. The ODNR recommended that ATSI perform a desktop assessment, followed by a field assessment if needed, to determine if there are potential winter hibernacula within the Project area. Therefore, this report provides a habitat assessment for ODNR listed bird species as well as a winter hibernaculum desktop review.

2.0 Methods

The methodology for the completion of the bird habitat assessment includes background information for each species considered and an assessment of the presence and/or absence of suitable habitat areas based on a literature review and field reconnaissance (Section 2.1). Qualifications of the bird specialist can be found in **Appendix C, Qualifications**. Regarding the methodology for the winter bat hibernaculum desktop review, Section 2.2 provides a summary of the methods for completion of the desktop review of known suitable habitat within ¼ mile of the Project.

2.1 Bird Habitat Assessment

2.1.1 Literature Review

Prior to conducting the field portion of the habitat assessment, AECOM coordinated with the ODNR and USFWS for information regarding rare, threatened, and endangered species and their habitats within the vicinity of the Project area (Appendix C). A literature review of each species was conducted regarding their natural history and occurrence or presence as breeding birds documented within and/or adjacent to the Project area. A brief description of species habitat and nesting status in Ohio is provided in Section 3.1.

2.1.2 Desktop and Field Review

Prior to completion of a field reconnaissance, AECOM completed a desktop analysis of habitat using Google Earth aerial photography, National Land Cover Classification data, and eBird database review within the 37.05-acre Project survey area as shown on **Appendix A, Figure 1 – Agency Overview Map and Figure 2 – Bird Habitat Map** as the AECOM Survey Area. As ATSI is still in the development of the work areas, the Project survey area encompasses all potential work limits and proposed preliminary access roads that may or may not be utilized during construction.

Based on the desktop review, these target areas of habitat were identified for detailed assessment. During the field reconnaissance, AECOM assessed the ability for these habitats to support the target species by performing a pedestrian reconnaissance of the Project survey area. While the entire Project was visited,

the areas identified as potential habitat during the desktop review were given greater attention. These areas were assessed to identify if large areas of suitable habitat were available that could be used by the species in question. Where applicable, the adjacent habitats were considered when evaluating potential habitat. Additionally, AECOM took representative photographs as well as categorized each of the habitats into the following types according to vegetative community / land use:

- agricultural (soybean, hayfields, and corn fields within and outside of existing ROW);
- wetlands and/or streams;
- urban areas (roads, driveways, rail lines, and buildings);
- old fields (early-succession fields within existing ROW); and
- residential

Following identification of the potential habitat areas, AECOM approximated the boundaries of the potential habitats within and/or adjacent to the Project area for each of the bird species identified as containing habitat within the Project area. The boundaries of these potential bird habitat areas are displayed in **Appendix A, Figure 3 – Potential Bird Nesting Habitat**.

2.2 Winter Bat Hibernaculum Desktop Review

AECOM reviewed publicly available data to identify underground voids which could be potential hibernation sites for overwintering bats (hibernacula). Typical hibernation sites for the *Myotis* and *Perimyotis* species native to Ohio include natural karst caves/sinkholes, underground mines with exposed entrances/air vents, and other underground voids which maintain suitable temperatures, humidity, and air circulation throughout the winter months. To identify such features, AECOM reviewed the following desktop resources:

- USGS topographical maps (U.S. Geological Survey, 2019)
- Aerial photography (ESRI, 2020)
- ODNR Division of Mineral Resources and Geological Survey data for:
  - Known mining activity (ODNR, 2020b)
  - Karst geology and sinkholes (ODNR, 2020c)

AECOM reviewed the information provided by each of these resources within ¼-mile of the environmental study area for indications of likely underground voids. **Appendix A, Figure 4 – USGS Topographical Map** shows the Project and it's ¼-mile buffer on a USGS background. **Appendix A, Figure 5 – Known Mining Activity Map** depicts the Project and it's ¼-mile buffer in relation to known records of mining activity as recorded by the ODNR. **Appendix A, Figure 6 – Karst Geology and Sinkholes Map** depicts the Project and it's ¼-mile buffer with known locations of karst geology and sinkholes. Aerial photography is shown as the background in **Appendix A, Figure 5 – Known Mining Activity Map and Figure 6 – Karst Geology and Sinkholes Map**.

3.0 Results

3.1 Literature Review

Coordination with ODNR indicated the project was within the range of the following birds: American Bittern, Black Tern, Cattle Egret, Common Tern, King Rail, Northern Harrier, Upland Sandpiper, Black-Crowned Night-Heron, Least Bittern, Sandhill Crane, and Trumpeter Swan (**Appendix B**). Based on correspondence from USFWS, no federally listed birds or protected habitat are located within the Project ROW. Furthermore, Bald Eagles are known to occur within proximity of the Project area and through coordination with the USFWS in 2020, the location of known nest of Bald Eagles were provided and displayed on (**Append A, Figure 3 – Potential Bird Nesting Habitat**). As shown, the known nesting areas are greater than 1,000 feet from the Project area and therefore, assessments for Bald Eagles were excluded from this review. For each of the eleven state listed species, a literature review was conducted of their natural history including suitable habitat conditions, occurrence records (eBird), breeding status in Ohio, and breeding records in Ohio.

TABLE 1. Federal and State Listed Birds Ranges within the Project Area

Common Name	Scientific Name	Federal Status	State Status
American Bittern	*Botaurus lentiginosus*	Not Listed	Endangered
Black Tern	*Chlidonias niger*	Not Listed	Endangered
Cattle Egret	*Bubulcus ibis*	Not Listed	Endangered
Common Tern	*Sterna hirundo*	Not Listed	Endangered
King Rail	*Rallus elegans*	Not Listed	Endangered
Northern Harrier	*Circus hudsonis*	Not Listed	Endangered
Upland Sandpiper	*Bartramia longicauda*	Not Listed	Endangered
Black-Crowned Night-Heron	*Nycticorax nycticorax*	Not Listed	Threatened
Least Bittern	*Ixobrychus exilis*	Not Listed	Threatened
Sandhill Crane	*Grus canadensis*	Not Listed	Threatened
Trumpeter Swan	*Cygnus buccinator*	Not Listed	Threatened

A brief description of each species' natural history and habitat and nesting records is provided below.

3.1.1 American Bittern

The American Bittern breeds throughout the northern half of North America from New Jersey to California and northward through much of Canada (Lowther et al., 2009 and Rodewald et al., 2016). This species is less common in the southern United States but winters coastally from Virginia to Texas, into Mexico, and from coastal Washington south into Mexico (Lowther et al. 2009). Peterjohn (2001) indicates that spring migration occurs primarily in mid-April and peaks mid-May. Fall migration occurs between late August and mid-October in Ohio (Peterjohn, 2001).

American Bitterns are solitary and do not build nests in groups or colonies (Peterjohn, 2001). The decline of nesting pairs in Ohio is directly associated with loss of large (>25 acres) emergent wetlands with dense vegetation with open water pools (Rodewald et al., 2009). American Bitterns will occasionally occupy bogs, large wet meadows, and dense shrubby swamps (ODNR 2019). The vegetation is often cattail and rarely

the other dense herbaceous vegetation near the edges of wetlands (Rodewald et al., 2016). Nests are generally built over water in standing cattails or other vegetation and associated with water 2-8 inches in depth (Lowther et al,. 2009).

According to the change map for the American Bittern in the Second Atlas of Breeding Birds in Ohio (Rodewald et al., 2016), American Bitterns occurred in Ottawa County during the 1982-87 Breeding Bird survey (Atlas I) as well as the 2006-2011 Breeding Bird survey (Atlas II) and detections of this species was slightly higher in the Atlas II results. However, it was also indicated that due to the secretive nature of this species, confirmed detections of breeding birds should be viewed with caution (Rodewald et al., 2016). The American Bittern nest in Ohio from May 1 to July 31 (ODNR, 2020a).

3.1.2 Black Tern

The Black Tern is a semi-colonial waterbird that nests on inland marshes, ponds, river mouths, and shores of larger lakes. Black Terns forage over open water, catching insects and small fish (Peck and James, 1983). Seven nesting sites in Ohio Western Lake Erie exist in Lucas, Ottawa, and Sandusky counties (Peterjohn, 1991). Black Terns begin winter migration by mid-to late August, overwintering in central and South America. Spring migration occurs from mid-April to late May (Rodewald et al. 2016 and Terres, 1991).

Black Terns nest in small, segregated colonies and are frequently located on mats of dead vegetation floating in the water or emerged pieces of driftwood. The nests are surrounded by standing water up to 4 feet deep, with patches of emergent vegetation surrounded by open water (Campbell, 1968). The nesting period for the Black Tern in Ohio is April 1 – June 30 (ODNR, 2020a).

3.1.3 Cattle Egret

The Cattle Egret in marshes, reservoirs, swamps, and upland forests throughout the United States. This species is likely to forage in drier areas than other heron species, especially around livestock, feeding heavily on insects, spiders, and other terrestrial invertebrates (Telfair, 2006). Ohio lies at the northern edge of its breeding range. Although the Cattle Egret has a large global population, it only breeds in small numbers on a couple of the Lake Erie islands. Results from the Second Atlas of Breeding Birds in Ohio (Rodewald et al., 2016) indicate that Cattle Egrets were only confirmed nesting at two heronries at West Sister and Turning Point Islands.

Nests are frequently placed over or near water in small trees and shrubs, usually less than 15 feet off the ground. The nests are generally flimsy platforms constructed of sticks, and they sometimes use the nests of other small herons (Peck and James, 1983). Nesting in Ohio occurs from May 15 to August 15 (ODNR, 2020a).

3.1.4 Common Tern

The Common Tern breeds in the Western Basin of Lake Erie in Lucas, Ottawa, and Erie Counties. Common Terns typically return to their Ohio colonies during late April and early May (Campbell, 1968). Spring migration occurs from late February through March while fall migration occurs from mid-October through the first half of December (Peterjohn, 2001).

In the early 1900's the Common Tern was virtually eliminated by the millinery trade but recovered after it received protections. The terns were once again quite numerous along the shores of western Lake Erie (Jones, 1903). The preferred nesting sites of Common Terns are natural or man-made islands that are free of predators and human disturbance (Peck and James 1983). The nesting period for the Common Tern in Ohio is May 1 – August 1 (ODNR, 2020a).

3.1.5 King Rail

The King Rail is the largest North American rail and is generally uncommon across its range and prefers freshwater marshes with extensive cattails or other reeds (eBird, 2020). Habitat destruction is responsible for the disappearance of several populations throughout Ohio, and after 1952, only small numbers were reported annually along Lake Erie (Campbell, 1968). Spring migration occurs from late February through March while fall migration occurs from mid-October through the first half of December (Peterjohn, 2001).

Nesting habitat generally consists of shallow water or in dense marsh cover. The nest is constructed in a clump of grass or sedges with various marsh plants. A canopy is constructed over the top of the nest and a ramp leading down from the entrance. The King Rail nests in Ohio from May 1 to August 1 (ODNR, 2020)

3.1.6 Northern Harrier

The Northern Harrier occurs throughout North America either as a breeding or non-breeding resident (Terres, 1991). This species breeds throughout Canada and Alaska as well as California eastward including northern Texas into Ohio and the New England states (Rodewald et al., 2016). The Northern Harrier occupies its breeding grounds between March and April and migrates in a southerly direction in late August into September (Terres, 1991 and Bent, 1963a).

In Ohio, the Northern Harrier has continued to decline in breeding population with the decline of wetland areas and grassland habitats (Peterjohn, 2001). The nesting period in Ohio is May 15 – August 1 (ODNR 2020a). Northern Harriers often nest in loose colonies where the female builds a nest on the ground in open areas lacking trees (Smith et al. 2020). Breeding territories vary from 2 to 272 acres in size and nests are generally at minimum 328 feet apart (ODNR, 2019). Rodewald et al. (2016) reported that research in Illinois indicated that Northern Harriers required at least 136 acres of habitat to breed. However, in Ohio the ODNR has provided guidance that open grasslands and wet meadow marshes of approximately 2 acres should be considered potential breeding habitat. This species also hunts over these habitats as well as agricultural fields by gliding over the vegetation between 5 to 8 feet (ODNR, 2019 and Bent, 1963a).

Northern Harriers may forage along the roadsides in open areas, but largely avoid urban areas (Smith et al., 2020). The Northern Harrier nest in Ohio from May 15 to August 1 (ODNR, 2020a).

3.1.7 Upland Sandpiper

The Upland Sandpiper breeds throughout North American grasslands and is considered an obligate grassland species. The species' core breeding range includes the central United States and is sparsely distributed west to Alaska and Oregon and east to the New England states and southeastern Canada (Rodewald et al., 2016 and Terres, 1991). This species winters from southern Brazil to Argentina and Chile, South America (Terres, 1991). Spring migration occurs during late March through April while fall migration occurs between late July to late August (Swanson, 1996).

In Ohio, the Upland Sandpiper has continued to decline with the decline of grassland habitats. Rodewald et al. (2016) reported that the majority of breeding pairs in Ohio were associated with grassy fields at smaller airports. This species requires large tracts of habitat approximately 20 acres in size (ODNR 2015). While Swanson (1996) reported that the United States trend of breeding Upland Sandpipers was increasing (+142, probability (p) = ≤0.01), the Ohio trend was decreasing (-81, p = ≤0.01). Nesting was confirmed in one breeding block in Ottawa County in the Second Atlas of Breeding Birds in Ohio (Rodewald et al., 2016). However, the breeding block location is located far to the northwest near the boundary of Lucas County.

The nesting period for Ohio is April 15 – July 31 (ODNR, 2020a). The grassland habitats used by Upland Sandpipers vary widely and can include both exotic and native grasses in dry grasslands. The Upland Sandpiper can be associated with, and at times, even prefer shorter grass/forb structures, therefore, areas that are grazed, hayed, or mowed are used by Upland Sandpipers (ODNR, 2015). The Upland Sandpiper generally occupies large tracts of habitat with a minimum of 20 acres and vegetation between 6 to 14 inches in height and forages in areas less than 4 inches in height (Swanson, 1996).

3.1.8 Black-Crowned Night-Heron

The Black-Crowned Night-Heron in North and South America from Canada as far south as Argentina. In Ohio, they presently nest on West Sister Island National Wildlife Refuge and Turning Point Island in Sandusky Bay (ODNR, 2020a). Black-crowned Night Herons in Ohio move southward in late September and October to destinations ranging from Florida the Gulf Coast, coastal Mexico, central Mexico, and Central America. They return to breeding grounds in March through May (L'arrivee and Blokpoel, 1990).

The Black-Crowned Night-Heron once nested in marshes and swamps throughout Ohio but has been eliminated as a mainland nester and is now relegated to Lake Erie Islands. The Black-Crowned Night-Heron is primarily a wetland-dependent species. Nest construction begins during April or early May in colonies, often in mixed colonies with other herons or in small trees near waterbodies or wetlands (Campbell, 1968). The nesting period for the Black-Crowned Night-Heron in Ohio is May 1 through July 31 (ODNR, 2020a).

3.1.9 Least Bittern

The Least Bittern breeds from southeastern Canada through the United States and Mexico also reaching into Costa Rica and the Greater Antilles. The northern populations overwinter in the southernmost United States and to Panama (Rodewald et al., 2016 and Terres, 1991). Spring migration occurs primarily in May through early June. Least Bitterns are casual to rare outside of nesting habitat during spring migration. Fall migration occurs between early August through September (Peterjohn, 2001).

In Ohio, the Least Bittern was one of the most common marsh birds in the early 1900's (Peterjohn, 2001; Rodewald et al., 2016). The breeding population declined as a direct result of the extensive wetland loss between the 1930's and 1960's. This species nests primarily in dense emergent wetlands with thick stands of cattails, sedges, sawgrass, or other semiaquatic vegetation interspersed with woody vegetation and open water (ODNR, 2020a). In parts of its Midwest range, the Least Bittern is often found in wetlands 1 to 12 acres in size suggesting that it may be area sensitive (Poole et al., 2020). Nest sites observed in New York had a mean distance to open water of approximately 11 feet and water levels at nest sites ranged from 0 to 1.9 feet with a mean depth of 1.1 feet (n=33; Pool et al. 2009).

Rodewald et al. (2016) reported probable and confirmed breeding in Ottawa County between 2006 to 2011. No records of non-breeding or breeding Least Bittern exist for the project area or for adjacent areas. Detection of the species can be low due to its secretive nature where it is less often seen than heard from the interior of dense marshes of cattail and other vegetation (Bent, 1963).

3.1.10 Sandhill Crane

The Sandhill Crane breeds primarily throughout Canada and Alaska with some limited populations from Oregon to Colorado in the western United States and Michigan in the Midwest (Rodewald et al., 2016). Ohio lies at the southeastern periphery of its breeding range. Sandhill Cranes observed in Ohio are primarily migrating as they travel from breeding grounds in the north to wintering grounds in Florida (Rodewald et al., 2016 and Terres, 1991). Spring migration occurs from late February through March while fall migration occurs from mid-October through the first half of December (Peterjohn, 2001).

In the late 1800's the Sandhill Crane once bred in northern Ohio regularly (Peterjohn, 2001 and Bent, 1963). The draining of large swamps, marshes, and bogs eliminated breeding habitat for this species. The Sandhill Crane is primarily a wetland-dependent species. During migration and on wintering grounds the species will utilize agricultural fields; however, they will generally roost in shallow water marshes with standing water (ODNR, 2020a). Nesting habitat generally consists of large tracts of wet meadow or shallow water marshes. An average of 20 breeding pair of Sandhill Cranes was recorded in Ohio between 2006 and 2011 (Rodewald et al., 2016). The nesting period for the Sandhill Crane in Ohio is April 1 – September 1 (ODNR, 2020a). A steady increase in protected marsh habitat has provided adequate nesting opportunity for this species to once again nest in Ohio.

3.1.11 Trumpeter Swan

The Trumpeter Swan is the heaviest living bird in North America. Records indicate that the swan was extirpated in the state of Ohio by the early 1700s, but strong population numbers were reported in 2014, due to the removal of Mute Swans that competed for breeding areas (Rodewald et al., 2016 and Terres, 1991). Their diet consists almost exclusively of aquatic plants, and in winter will eat grasses and grains in agricultural fields.

Nesting habitat generally consists of a site surrounded by water and usually less than 600 feet from shore. The nest is built on an existing structure, including beaver dams, small islands, or man-made platforms. The nest consists of aquatic vegetation and can measure up to 11 feet across and three feet high (eBird, 2020). The nesting period for the Trumpeter Swan in Ohio is April 15 – June 15 (ODNR, 2020a).

3.2 Desktop and Field Review

AECOM completed field surveys within the Project area on January 14 and 15; October 7; November 17 and 18, 2020 for potential habitat for the American Bittern, Black Tern, Cattle Egret, Common Tern, King Rail, Northern Harrier, Upland Sandpiper, Black-Crowned Night-Heron, Least Bittern, Sandhill Crane, and Trumpeter Swan. A summary of vegetative community and land cover types are provided below in Table 2 and displayed on Figures 2-1 – 2-16 (**Appendix A, Figure 2 – Bird Habitat Map**). Representative photographs of habitat conditions within the Project survey area are provided in **Appendix D, Photographic Log**. The acreages shown in Table 2 include the entire Project survey area that encompasses all anticipated work limits. Based on the nature of the Project, some of these areas may not be impacted by the Project construction activities.

Table 2. Vegetative Communities / Land Cover Types within the Project Area

Vegetative Community / Land Cover Type	Acreage within Survey Area	Percentage of Survey Area
Agricultural	13.02	35.1
Forest	0.34	0.9
Old Field (ROW)	3.94	10.6
Residential	4.35	11.7
Urban	6.97	18.8
Wetland / Stream	8.44	22.8
Total	**37.05**	**100**

*Forested areas are located immediately adjacent to the Project survey area of existing transmission right-of-way and does not intersect the proposed work areas. However, small, forested areas are located along the edge of existing access roads and included within Table 2.

3.3 Desktop Assessment For Bat Hibernaculum

Based on the available desktop resources, no documented underground mines, mine entrances/openings, or karst features are present within ¼-mile of the Project. ODNR mining records indicate that several underground and surface mine features are present to the east of the Project in Ottawa County but are not within ¼-mile of the Project area (**Figure 5 – Known Mining Activity Map**). Surface mines to the southeast

and southwest of the Project area in Erie County are approximately 0.6 to 2.0 miles away, beyond the visible extent on **Figure 5 – Known Mining Activity Map**.

Karst geology is associated with approximately the western half of Ohio, and not the portion of the state in which the Project is located. Review of the ODNR Karst Interactive Map did not reveal any karst geology or sinkholes within the Project vicinity (**Figure 6 – Karst Geology and Sinkholes Map**). Furthermore, no underground voids or openings were observed in the field during previous environmental surveys conducted for the Project.

4.0 Conclusions

4.1 Bird Habitat Assessment

The vegetative community and land cover type was dominated by agricultural land use/cover type (35.1%) within the Project survey area. Crop types observed in the Project survey area were primarily maintained hayfield and small areas of corn and/or soybean fields. Wetland / stream land cover type made up approximately 22.8% of the Project survey area. Urban and residential land uses made up approximately 30.5% (18.8% and 11.7%, respectively) of the Project survey area. Additionally, 10.6% consists of old field vegetative communities/land cover type that is situated within the maintained right-of-way. Lastly, forested areas located along the edge of existing access roads are composed of 0.9% of the Project survey area (**Table 2).** The majority of potential habitat assessed for suitability for the listed species are fragmented due to the prevalence of active agriculture, urban/industrial developments, and forested tree lines. As a result, contiguous grassland habitats and non-disturbed wetland communities are less frequent within the Project survey area. Conclusions based on species natural history, documented occurrence data, and field review are provided below.

4.1.1 American Bittern

As discussed in 3.1.1, American Bitterns require wetlands that are generally greater than 25-acres in size with large pools or ponded areas surrounded by dense vegetation. That most promising site for this species potential habitat is located outside and east of the construction work limits near Structures 1452 and 1453, where a large, inundated wetland complex continues and drains into a large man-made lake. A portion of this wetland extends within the survey area (Wetland LO-12a/b) but does not provide suitable nesting habitat due to lack of inundated areas as well as the adjacent tree lines creating the “closed in” or fragmented effect. The “closed in” or fragmented effect limits the availability for the American Bittern to be present within the delineated portion of the wetland. As such, the delineated portion of the wetland does not provide a contiguous open habitat and adjacent tree lines on either side of this wetland could lead to predatory animals such as coyotes and feral cats disturbing nest sites. The American Bittern nest selection relies on being protected by open-water systems as well as dense fringe vegetation for camouflage, which is absent within the existing maintained right-of-way. Furthermore, the two PUB portions of the wetland (Wetland LO-09c) are less than 1-acre in size, which are not adequately sized for nesting grounds for this

species, and more suitable habitat (i.e., east of Structure 1452 and 1453) is present adjacent and outside of the Project area. This area is identified on **Appendix A, Figure 3 – Potential Bird Nesting Habitat** as *Potentially Suitable Nesting Habitat for Listed Bird Species*. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction of the Project would not likely adversely affect this species.

4.1.2 Black Tern

Since the Black Terns prefers nesting within large, inundated wetland complexes on isolated mats of dead vegetation floating in water or emerged pieces of driftwood, this species nesting grounds is not likely to be present within the Project area. Additionally, foraging for this species is unlikely to occur within the Project area due to lack of large open water systems. The habitats identified within the survey area are more terrestrial and/or seasonally inundated/saturated wetlands that does not provide the necessary protection for this species nests as well as foraging opportunities. Even though two inundated/PUB portions of a wetland complex (Wetland LO-09c) were identified, these wetlands are small, and the fringe boundaries are relatively close to the interior inundated areas that decreases the likelihood that this species would nest within this area due to predation from terrestrial predators such as coyotes and feral cats. Furthermore, this species is would also be subjected to the "close-in" or fragmented effects similar to the American Bittern and the bordering tree-lines would not provide the continuous open habitat to support the nesting requirements of this species. Lastly, more suitable habitat for this species was identified outside of the survey area located within a large estuary wetland complex situated west of Fulton Street. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would not likely adversely affect this species.

4.1.3 Cattle Egret

Within Ohio, the Cattle Egret is currently known to nest only within two islands (West Sister Island and a small Island located North of Sandusky). Due to the proximity of these areas with the Project area, the Cattle Egret is likely to be present for foraging opportunities, but the Project area is not likely to contain suitable nesting opportunities for this species. The nesting habitat required for this species are frequently placed over or near open water systems in small trees and/or shrubs. As detailed in the previous two species, there is a lack of large open water systems within the Project area and nests would be subjected to either the "closed-in" or fragmented effect as well as predation from coyotes and/or feral cats. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would not likely adversely affect this species.

4.1.4 Common Tern

Similar to the description of the Black Tern in Section 4.1.2, this species prefers nesting within inundated wetland complexes on isolated mats of dead vegetation floating in water or emerged pieces of driftwood and foraging occurs over large open-water complexes. Due to the lack of these habitats within the Project

area, it is unlikely that suitable nesting and/or foraging opportunities would be present. Furthermore, more suitable habitat for this species was identified outside of the survey area located within a large estuary wetland complex situated west of Fulton Street. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would not likely adversely affect this species.

4.1.5 King Rail

King rail often requires large wetland habitats greater than 50-acres in size for suitable nesting sites that are slightly above shallow water that contains mosaics of vegetation types and microtopography that result in hummocks and patches of shallow open water (Ohio Birds, 2021). The wetland habitats located north of Highway Route 2, are smaller wetland complexes that does not provide suitable nesting grounds for this species. Additionally, the large wetland complex (Wetland LO-12a/b) identified immediately south of this highway is situated within the existing transmission right-of-way lacks inundated areas and would be subjected to "closed-in" or fragmented effect of the neighboring tree lines. However, more suitable habitat (i.e., east of Structure 1452 and 1453) is present adjacent and outside of the Project area. This area is identified on **Appendix A, Figure 3 – Potential Bird Nesting Habitat** as *Potentially Suitable Nesting Habitat for Listed Bird Species*. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would not likely adversely affect this species.

4.1.6 Northern Harrier

The Northern Harrier generally nests in large marshes and grasslands. Agricultural areas are used by Northern Harrier for foraging during migration and over-wintering after crops are cleared by harvest. The Project area is predominantly characterized as active agricultural area, forested areas, and urban and residential land use that would result in the "closed in" or fragmented effect. The "closed in" or fragmented effects the availability of Norther Harrier habitat to be present as grasslands and/or wetlands may be too small, isolated, and/or too influenced by edge effects to maintain viable population, including increase of predation (Johnson, 2001). The habitats identified within the Project area displayed this "closed in" and/or fragment effects as there was an absence of large, undisturbed wetland complexes and contiguous old field vegetative communities. However, the open hayfield identified near Structure 1397 may provide foraging opportunities for this species, but nesting is unlikely due to the actively maintained and/or mowing activities from the agricultural practices. Additionally, one observation record on eBird indicated that this species was present foraging within the un-maintained field located approximately 0.72-mile East-Southeast of Structure 1397. Therefore, the nesting area of this species is likely located in the larger wetland complex located north of the is field. This area is identified on **Appendix A, Figure 3 – Potential Bird Nesting Habitat** as *Potentially Suitable Nesting Habitat for Listed Bird Species*. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would unlikely adversely affect this species.

4.1.7 Upland Sandpiper

The ODNR states that the Upland Sandpiper nests in dry grasslands, pastures, hayfields, and airport infields. This species is known to occupy habitats with shorter vegetative height. While the areas observed within the Project area did possess grassland areas, most were greater than 36 inches in height and possessed a very dense thatch layer or continuous areas were relatively too small to provide nesting opportunities for this species. However, the open maintained hayfield situated near Structure 1397 and North of East Lockwood Road is associated with a continuous area that is approximately 229-acres in size. Even though this area is greater than 20-acres, the bordering forest and wetlands could lead to predatory animals such as coyotes and feral cats that could lead to disturbance to the Upland Sandpipers' nests. Furthermore, the lack of perches and timing of mowing within this field may also negatively affect the potential for Upland Sandpiper to nest within these fields. Therefore, these maintained hayfields may be limited or less optimal than other areas to provide nesting opportunities for the Upland Sandpiper located outside of the Project area. However, the maintained field could not entirely be ruled out as suitable habitat due to the size and type of the continuous short grass/forb habitat present within the Project area.

As an attempt to minimize the habitat disturbances, ATSI intends to utilize the existing gravel access road located off East Lockwood Road to access the Project area. Therefore, the only activities that will occur within the potential suitable habitat areas are located along the proposed temporary access roads to Structures 1397 and 1452 as well as these structures temporary work areas within the existing right-of-way. Therefore, AECOM recommends adherence to the recommended seasonal restriction and/or completion of vegetation clearing and/or site preparation activities (i.e., installation of access roads, timber mats, and work areas) prior to April 15 and/or after July 31 to avoid adverse effects to the Upland Sandpiper. Therefore, work activities may occur during this seasonal restriction but potential effects to the Upland Sandpiper nesting habitat would not be anticipated due to the lack of suitable breeding habitat and due to the scheduling of vegetation clearing and site preparation activities that would occur prior to April 15 and/or after July 31. If vegetation clearing activities and/or site preparation are required within the nesting period, additional coordination with the ODNR and a potential presence/absence survey may need to be completed prior to construction.

4.1.8 Black-Crowned Night-Heron

As Black-crowned Night-herons are known for nesting within small trees near waterbodies and/or wetlands (Campbell, 1968), only one wetland complex (Wetland LO-09a/b/c) has a potential to support nesting activities for this species. All other wetlands and/or habitats within the Project area lack woody vegetation and/or inundated areas that are necessary to support a nesting habitat for this species. However, the potential for Wetland LO-09a/b/c is low due to the relative size of the entire complex and other suitable habitat may be present in wetlands and/or other habitats located outside of the Project area. The potential habitat for this species is displayed on **Appendix A, Figure 3 – Potential Bird Nesting Habitat**. Therefore, AECOM recommends adherence to the recommended seasonal restriction and/or completion of vegetation

clearing and/or site preparation activities (i.e., installation of access roads, timber mats, and work areas) prior to May 1 and/or after July 31 to avoid adverse effects to this species. Therefore, work activities may occur during this seasonal restriction without potential effects to the Black-crowned Night-heron nesting habitat would not be anticipated due to the lack of suitable breeding habitat and due to the scheduling of vegetation clearing and site preparation activities that would occur prior to May 1 and/or after July 31. If vegetation clearing activities and/or site preparation are required within the nesting period, additional coordination with the ODNR and a potential presence/absence survey may need to be completed prior to construction.

4.1.9 Least Bittern

The Project survey area does not contain extensive undisturbed wetland habitat that includes open water and dense emergent vegetation. Small wetlands occur at various locations throughout the Project survey area; however, they are bordered by dense forested areas and do not offer suitable habitat at the smaller scale. Larger wetlands within the project area are not suitable habitat due to their locations within disturbed areas (e.g., agricultural, and urban land classification types), lack of open water, and/or absence of dense vegetation. However, one wetland complex (Wetland LO-09a/b/c) provides small PUB portions that may have low possibilities for supporting nesting habitat for this species located between Structures 1454 and 1456. The potential habitat for this species is displayed on **Appendix A, Figure 3 – Potential Bird Nesting Habitat**. Therefore, AECOM recommends adherence to the recommended seasonal restriction and/or completion of vegetation clearing and/or site preparation activities (i.e., installation of access roads, timber mats, and work areas) prior to May 1 and/or after July 31 to avoid adverse effects to this species. Therefore, work activities may occur during this seasonal restriction without potential effects to the Least Bittern nesting habitat would not be anticipated due to lack of suitable breeding habitat and due to the scheduling of vegetation clearing and site preparation activities that would occur prior to May 1 and/or after July 31. If vegetation clearing activities and/or site preparation are required within the nesting period, additional coordination with the ODNR and a potential presence/absence survey may need to be completed prior to construction.

4.1.10 Sandhill Crane

The ODNR states that this species nests primarily in wetland areas. However, Downs (2004) found that the preferred habitat for breeding Sandhill Cranes in Ohio consists of large areas of shallow marshes, typically less than 12 inches deep and a minimum of 5 acres in size, which are dominated by cattail, sedge, and reed canary grasses. Equally important, the shallow marshes are commonly located adjacent to open areas of grassland or hay fields, and typically located within 0.5 miles of row crop fields. While there are emergent wetlands located throughout the Project area, a survey of these features found them lacking these characteristics. Thus, the right of way is not suitable for Sandhill Crane nesting. Additionally, the multiple transmission lines within the large right of way pose a barrier for this species that may preclude it from using this habitat. Mortality of Sandhill Cranes has been documented throughout its range from

collision with transmission lines (Murphy et al. 2016). Murphy et al. (2016) found that during daylight hours Sandhill Cranes often reacted to avoid transmission lines during flight. Furthermore, the adjacent forested areas provide habitat for predators of the Sandhill Crane, such as coyotes and feral cats. Furthermore, more suitable habitat (i.e. east of Structure 1452 and 1453) is present adjacent and outside of the Project area. This area is identified on **Appendix A, Figure 3 – Potential Bird Nesting Habitat** as *Potentially Suitable Nesting Habitat for Listed Bird Species*. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would be unlikely to adversely affect this species.

4.1.11 Trumpeter Swan

As per ODNR guidance, the Trumpeter Swan prefers nesting in large marshes and lakes ranging in size from 40 to 150 acres in size (ODNR, 2020a). Based on the wetlands observed within the Project area, majority of the wetlands would provide adequate nesting opportunities for the species based on this size restriction and type of wetland habitats present. However, one wetland complex (Wetland LO-12a/b/c) is associated with a large wetland complexes that continues outside of the Project area to the east and west. Within the Project area, the wetland is a seasonal wetland complex with a narrow corridor which would create the "closed-in" or fragmentation effect that would eliminate this portion of the wetland as being potential habitat for this species. Additionally, the adjoining forested areas along the edge of the existing transmission right-of-way would provide habitat for predators to disturb any nests within this area. Therefore, the habitat for this species would likely be present outside of the Project area (i.e. east of Structure 1452 and 1453) as identified on **Appendix A, Figure 3 – Potential Bird Nesting Habitat** as Potentially Suitable Nesting Habitat for Listed Bird Species. Therefore, AECOM concluded that this species nesting habitat is not likely present within the Project area and construction would unlikely adversely affect this species.

4.2 Bat Habitat Assessment

AECOM completed the due diligence winter bat habitat desktop in November 2021. As a result, no records of underground mines, mine openings, or karst features were identified. Based upon review of these records, topographic maps, and aerial photography, it is unlikely that potential hibernacula are present within ¼-mile of the Project. Furthermore, no mines and/or other portals were identified within the Project area during the field assessments.

5.0 Summary

In summary, potentially suitable nesting habitat was not found to be present in the Project area for the American Bittern, Black Tern, King Rail, Common Tern, Cattle Egret, Northern Harrier, Sandhill Crane, and/or Trumpeter Swan. However, potential suitable breeding or nesting habitat for these species was identified outside of the Project area and foraging activities may be present. Due to the absence of potentially suitable nesting habitat for these species, it is our opinion that seasonal construction restrictions

are not required. However, potential suitable breeding or nesting habitat was identified for three species (Black-crowned Night heron, Least Bittern, and Upland Sandpiper) within the Project area. Therefore, AECOM recommends coordination with the ODNR for concurrence of this habitat assessment and confirmation that the Project would not result in disturbance of these species nesting habitat if the Project area is cleared and/or site preparation activities occur outside of their seasonal timing restrictions (before or after) and that work activities thereby can continue during the restriction time period. The potential nesting location of the species are displayed in **Appendix A, Figure 3 – Potential Bird Nesting Habitat**.

Regarding bat hibernaculum within ¼-mile of the Project area, AECOM did not identify any records of mine openings, karst features, and/or caves during the due diligence winter bat habitat desktop review. Furthermore, none of these features were identified during the site investigations within the Project survey area. Based upon the review of these records, topographic maps, and aerial photography, it is unlikely that potential bat hibernacula exist within ¼-mile of the Project. Therefore, AECOM does not recommend any additional field assessments or surveys at this time.

Disclaimer: Please note the field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

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APPENDIX A: FIGURES

Lakeview Substation
41.5133
-82.9148

Port Clinton

Structure 1397
41.4989
-82.9176

Ottawa County

Gypsum

Ottawa County

Kelleys Island

Ottawa County

Ottawa County

Vickery

Castalia

Erie County

Sandusky

Greenfield Substation
41.4327
-82.728

Structure 1316
41.4324
-82.7307

Sandusky County

Legend

- Existing Structure
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- Ohio USGS 7.5" Topographical Quandrangle
- County Boundary

N

0 4,000 8,000 Feet

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Agency Overview Map

Issued: September 16, 2020

URS Path: L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60640025_FE_GRNLAK\920_929_GIS_Graphics\LakeviewGreenfield_AgencyOverviewMap.mxd

PORT CLINTON

OTTAWA COUNTY

LG-01

PH-01

Wetland LO-40
PEM - Category

Lakeview

1458

PH-02

Wetland LO-01
PEM - Category 1

PH-03

Stream LO-01
UNT to Lake Erie
HHEI: 68
11 FT

Wetland LO-02
PEM - Category 1

Wetland LO-03
PEM - Category 1

Stream LO-01
UNT to Lake Erie
HHEI: 68
11 FT

1457

PH-04

Wetland LO-04

Legend

- Photograph Location
- Old Field (ROW)
- Residential
- Urban
- Wetland
- Existing Substation
- Existing Structures
- Gate
- Access Entrance
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Paved Access Road
- Proposed Temporary Access Road
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Delineated Stream
- Delineated Wetland
- USACE District
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Bird Habitat Map
Figure 2-1 of 6

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig2_BirdAssessment.mxd

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

PORT CLINTON

OTTAWA COUNTY

PH-04

Wetland LO-04
PEM - Category 1

1456

Wetland LO-05
PEM - Category 1

Wetland LO-06
PEM - Category 1

LG-03

LG-02

PH-05

Wetland LO-08
PSS - Category 1

Wetland LO-09a
PSS - Category 2

Norfolk Southern Corporation

Wetland LO-09b
PEM - Category 2

Wetland LO-07
PSS - Category 1

1455

PFO wetland located outside of ROW and south of access road.

Wetland LO-09b
PEM - Category 2

Wetland LO-09a
PSS - Category 2

Wetland LO-09c
PUB - Category 2

PH-06

Wetland LO-09b
PEM - Category 2

Wetland LO-09a
PSS - Category 2

Wetland LO-09a
PSS - Category 2

PH-07

Wetland LO-09c
PUB - Category 2

Legend

- Photograph Location
- Agriculture
- Forest
- Old Field (ROW)
- Residential
- Urban
- Wetland
- Existing Structures
- Gate
- Access Entrance
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Existing Paved Access Road
- Proposed Temporary Access Road
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Railroad
- Delineated Stream
- Delineated Wetland
- Bald Eagle Helicopter Protection Zone (1,000 FT)
- Bald Eagle Clearing/Direct Line of Site Protection Zone (660 FT)
- USACE District
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

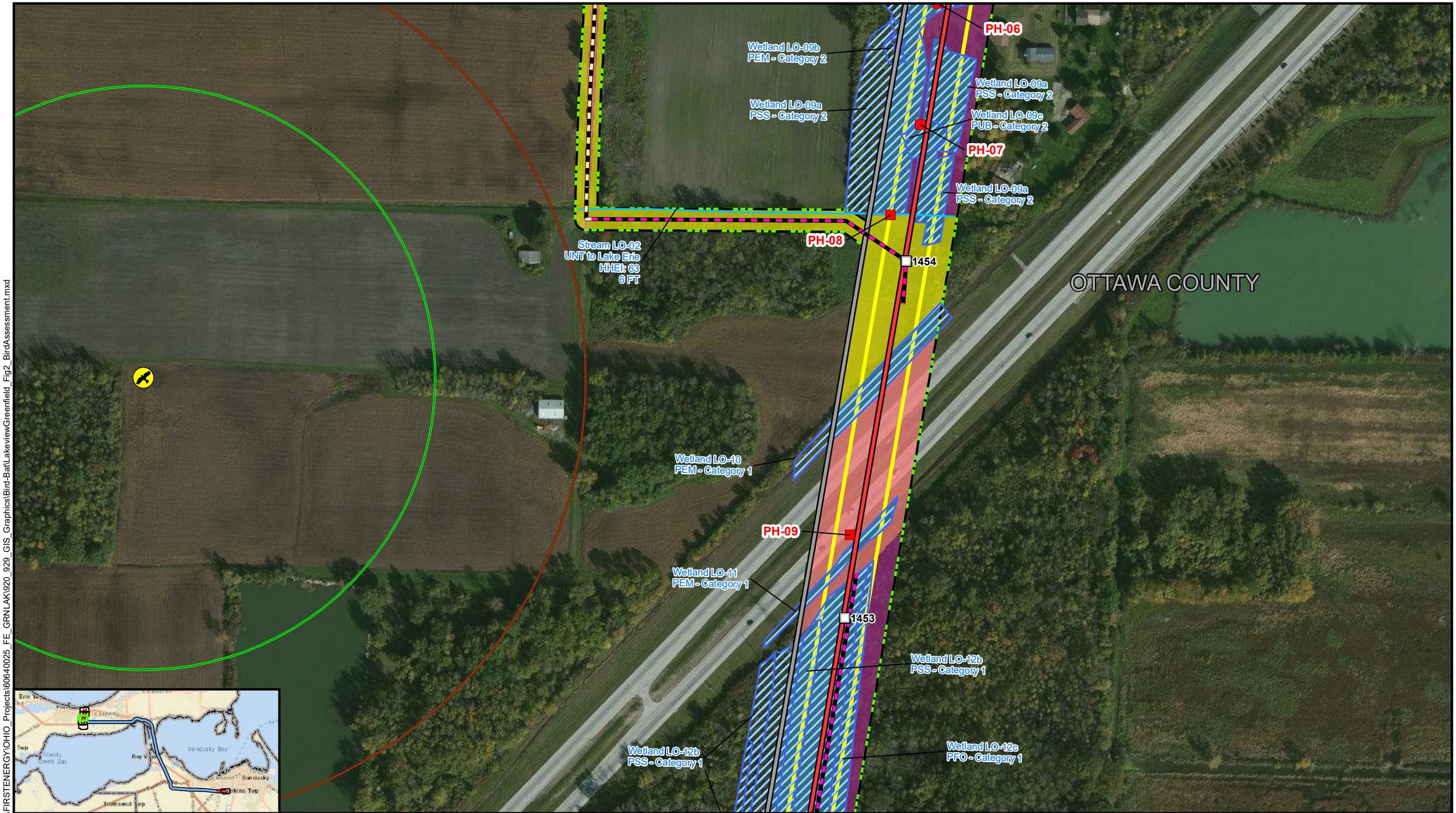
ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Bird Habitat Map
Figure 2-2 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig2_BirdAssessment.mxd



Legend

- Photograph Location
- Agriculture
- Old Field (ROW)
- Urban
- Wetland
- Approximate Bald Eagle Nest Location (USFWS 2019)
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Delineated Stream
- Delineated Wetland
- Bald Eagle Helicopter Protection Zone (1,000 FT)
- Bald Eagle Clearing/Direct Line of Site Protection Zone (660 FT)
- USACE District
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Bird Habitat Map
Figure 2-3 of 6

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-BatLakeviewGreenfield_Fig2_BirdAssessment.mxd

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

Wetland LO-12b
PSS - Category 1

Wetland LO-12c
PFO - Category 1

Wetland LO-12a
PEM - Category 1

PH-10

1452

OTTAWA COUNTY

1397

PH-11

Stream LO-03
UNT to Muddy Creek Bay
CHEL: 16
7 FT

Wetland LO-13a
PEM - Category 2

Legend

- Photograph Location
- Agriculture
- Old Field (ROW)
- Wetland
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Delineated Stream
- Delineated Wetland
- Bald Eagle Helicopter Protection Zone (1,000 FT)
- USACE District
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Bird Habitat Map
Figure 2-4 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig2_BirdAssessment.mxd

PH-12

LG-04

Erie Twp
Perkins Twp
Sandusky Bay
Muddy Creek Bay
Bay View
Sandusky
Townsend Twp

Legend

- Photograph Location
- Agriculture
- Wetland
- Access Entrance
- Existing Gravel Access Road
- Existing Lakeview-Ottawa 138kV Transmission Line
- Delineated Stream
- Delineated Wetland
- USACE District
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Bird Habitat Map
Figure 2-5 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig2_BirdAssessment.mxd

SANDUSKY

ERIE COUNTY

PH-15

LG-07

PH-14

PH-13

Greenfield

LG-05

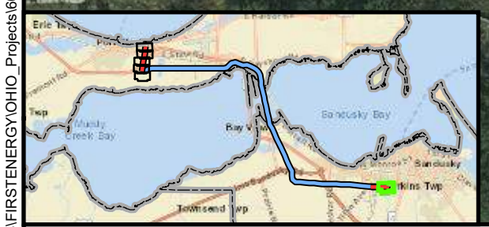
LG-06

1316

1365

1315

Wetland LG-01
PEM - Category 1



Legend

- Photograph Location
- Agriculture
- Urban
- Wetland
- Existing Substation
- Existing Structures
- Access Entrance
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Delineated Wetland
- USACE District
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Bird Habitat Map
Figure 2-6 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig2_BirdAssessment.mxd

PORT CLINTON

OTTAWA COUNTY

LG-01

Wetland LO-40
PEM - Category

Lakeview

1458

Wetland LO-01
PEM - Category 1

Stream LO-01
UNT to Lake Erie
HHEI: 68
11 FT

Wetland LO-02
PEM - Category 1

Wetland LO-03
PEM - Category 1

64452.00
PORT CLINTON
M.H.P. LLC

Stream LO-01
UNT to Lake Erie
HHEI: 68
11 FT

1457

64452.10
OAK HILL PORT
CLINTON LLC

Wetland LO-04

Legend

- Existing Substation
- Existing Structures
- Gate
- Access Entrance
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Delineated Stream
- Existing Paved Access Road
- Proposed Temporary Access Road
- Delineated Wetland
- Parcel Boundary
- Township Boundary
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Potential Bird Nesting Habitat
Figure 3-1 of 6

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig3_BirdAssessment.mxd

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

PORT CLINTON

OTTAWA COUN

64452.10
OAK HILL PORT
CLINTON LLC

64452.00
PORT CLINTON
M.H.P. LLC

Least Bittern and Black-crowned night-heron
Avoidance Between May 1 and July 31

Wetland LO-04
PEM - Category 1

1456

Wetland LO-05
PEM - Category 1

Wetland LO-06
PEM - Category 1

LG-03

LG-02

Wetland LO-08
PSS - Category 1

Wetland LO-09a
PSS - Category 2

Norfolk Southern Corporation

Wetland LO-09b
PEM - Category 2

Wetland LO-07
PSS - Category 1

1455

Wetland LO-09b
PEM - Category 2

Wetland LO-09a
PSS - Category 2

Wetland LO-09c
PUB - Category 2

Wetland LO-09b
PEM - Category 2

Wetland LO-09a
PSS - Category 2

Wetland LO-09a
PSS - Category 2

Wetland LO-09c
PUB - Category 2

Legend

- Existing Structures
- Gate
- Access Entrance
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Railroad
- Delineated Stream
- Existing Gravel Access Road
- Existing Paved Access Road
- Proposed Temporary Access Road
- Delineated Wetland
- Parcel Boundary
- Black-crowned Night-heron (Nycticorax nycticorax) and Least Bittern (Ixobrychus exilis)
- Bald Eagle Helicopter Protection Zone (1,000 FT)
- Bald Eagle Clearing/Direct Line of Site Protection Zone (660 FT)
- Township Boundary
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

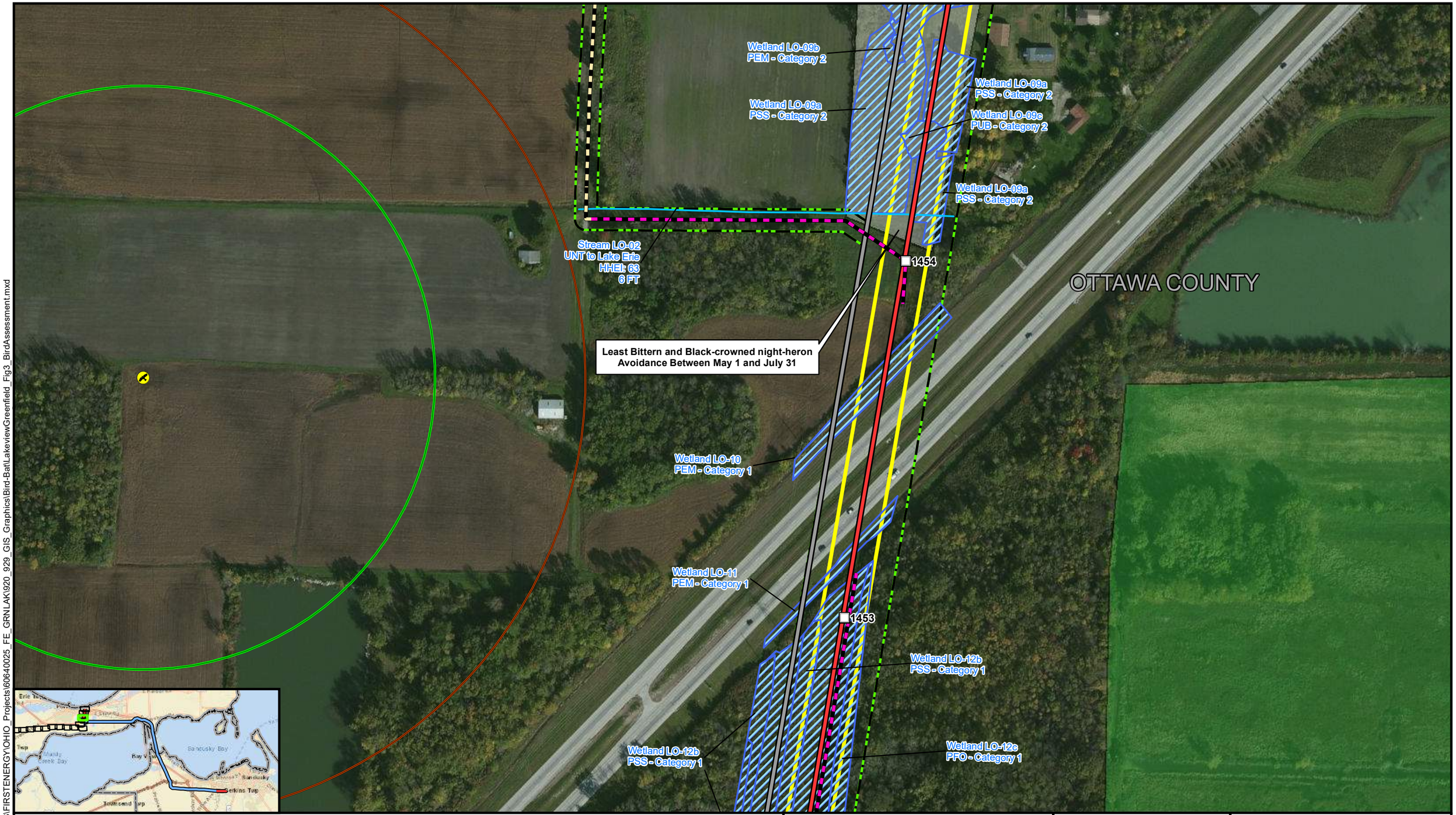
ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Potential Bird Nesting Habitat
Figure 3-2 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-BatLakeviewGreenfield_Fig3_BirdAssessment.mxd



Legend

- Approximate Bald Eagle Nest Location (USFWS 2019)
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Delineated Stream
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Wetland
- Black-crowned Night-heron (Nycticorax nycticorax) and Least Bittern (Ixobrychus exilis)
- Potential Suitable Nesting Habitat for Listed Bird Species
- Bald Eagle Helicopter Protection Zone (1,000 FT)
- Bald Eagle Clearing/Direct Line of Site Protection Zone (660 FT)
- Township Boundary
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Potential Bird Nesting Habitat
Figure 3-3 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-BatLakeviewGreenfield_Fig3_BirdAssessment.mxd

Wetland LO-12b
PSS - Category 1

Wetland LO-12c
PFO - Category 1

Wetland LO-12a
PEM - Category 1

1452

OTTAWA COUNTY

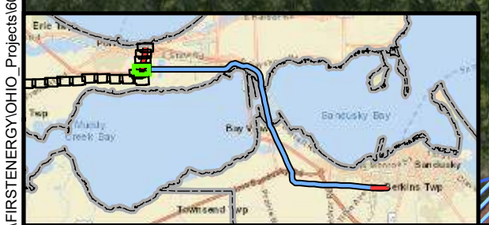
Upland Sandpiper
Avoidance Between April 15 to July 31

64464.00
GLOVINSKY
FARMS LLC

1397

Stream LO-03
UNT to Muddy Creek Bay
QHEI: 16
7 FT

Wetland LO-13a
PEM - Category 2



Legend

- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- Existing Lakeview-Ottawa 138kV Transmission Line
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Stream
- Delineated Wetland
- Parcel Boundary
- Potential Suitable Nesting Habitat for Listed Bird Species
- Upland Sandpiper (Bartramia longicauda)
- Bald Eagle Helicopter Protection Zone (1,000 FT)
- Township Boundary
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Potential Bird Nesting Habitat
Figure 3-4 of 6

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig3_BirdAssessment.mxd

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

64464.00
GLOVINSKY
FARMS LLC

LG-04

Erie Twp
Perkins Twp
Townsend Twp
Sandusky Bay

Legend

- Access Entrance
- Existing Lakeview-Ottawa 138kV Transmission Line
- Existing Gravel Access Road
- Delineated Stream
- Delineated Wetland
- Parcel Boundary
- Upland Sandpiper (Bartramia longicauda)
- Township Boundary
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Potential Bird Nesting Habitat
Figure 3-5 of 6

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

Issued: November 17, 2021

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig3_BirdAssessment.mxd

SANDUSKY

5427.00
SANDUSKY YOUNG MEN'S CHRISTIAN ASSOC

5428.00
ST. PAULS EVANGELICAL LUTHERAN CHURCH

5426.00
OHIO EDISON

5425.00
OHIO EDISON

LG-07

Greenfield

ERIE COUNTY

LG-05

LG-06

1316

1365

1315

Wetland LG-01
PEM - Category 1

5429.20
2509
HAYES LLC

Legend

- Existing Substation
- Existing Structures
- Access Entrance
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- Lakeview-Greenfield 138kV 100ft Project Corridor
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Wetland
- Parcel Boundary
- Township Boundary
- County Boundary
- Lakeview-Greenfield Survey Area

0 100 200 400 Feet

N

ATSI

American Transmission Systems, Inc.
Lakeview-Greenfield 138kV
Transmission Line Rebuild Project
Potential Bird Nesting Habitat
Figure 3-6 of 6

URS Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\LakeviewGreenfield_Fig3_BirdAssessment.mxd

Source: BMCD, ESRI, FEMA, NWI, NHD, Bing Map Hybrid

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Date Saved: 11/17/2021

LEGEND

- Survey Area Quarter Mile Buffer
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield138kV Transmission Line (Not Proposed for Rebuild)
- Survey Boundary

0 1,000 2,000

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

FIGURE 4
USGS TOPOGRAPHICAL MAP

JOB NO. 60635008

AECOM

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Date Saved: 11/17/2021

LEGEND

- Survey Area Quarter Mile Buffer
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield138kV Transmission Line (Not Proposed for Rebuild)
- Survey Boundary

0 1,000 2,000
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

FIGURE 4
USGS TOPOGRAPHICAL MAP

JOB NO. 60635008

AECOM

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Date Saved: 11/17/2021

LEGEND

- Survey Area Quarter Mile Buffer
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield138kV Transmission Line (Not Proposed for Rebuild)
- Survey Boundary

0 1,000 2,000
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

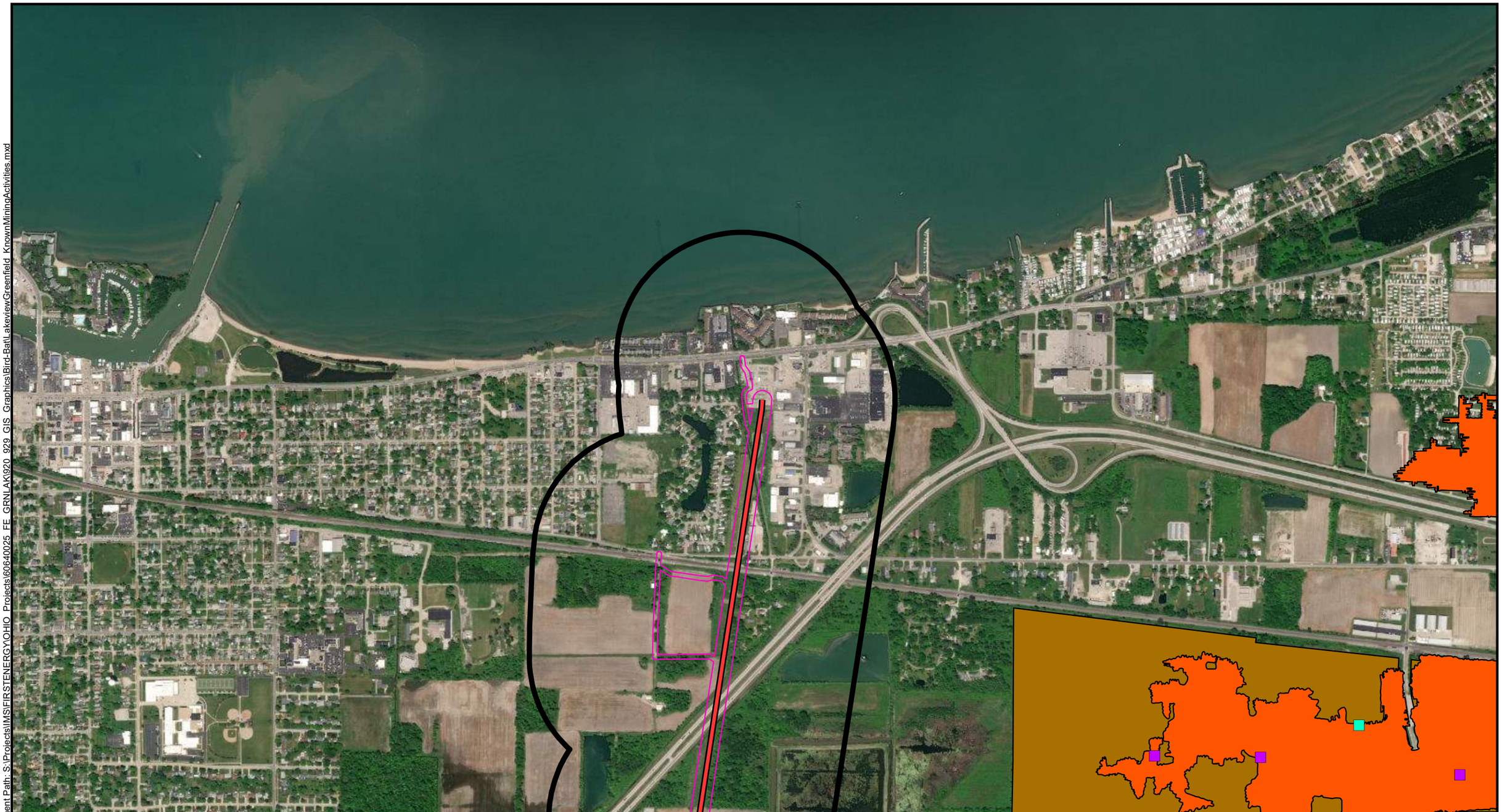
FIGURE 4
USGS TOPOGRAPHICAL MAP

JOB NO. 60635008

AECOM

Document Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\Lakeview\Greenfield_KnownMiningActivities.mxd

Date Saved: 11/17/2021



LEGEND

- Survey Area Quarter Mile Buffer
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)
- Survey Boundary
- Abandoned Underground Mine
- Active Industrial Minerals Surface Mine

Abandoned Underground Mine Opening

- Air Shaft
- Vertical Mine Shaft

0 1,000 2,000

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

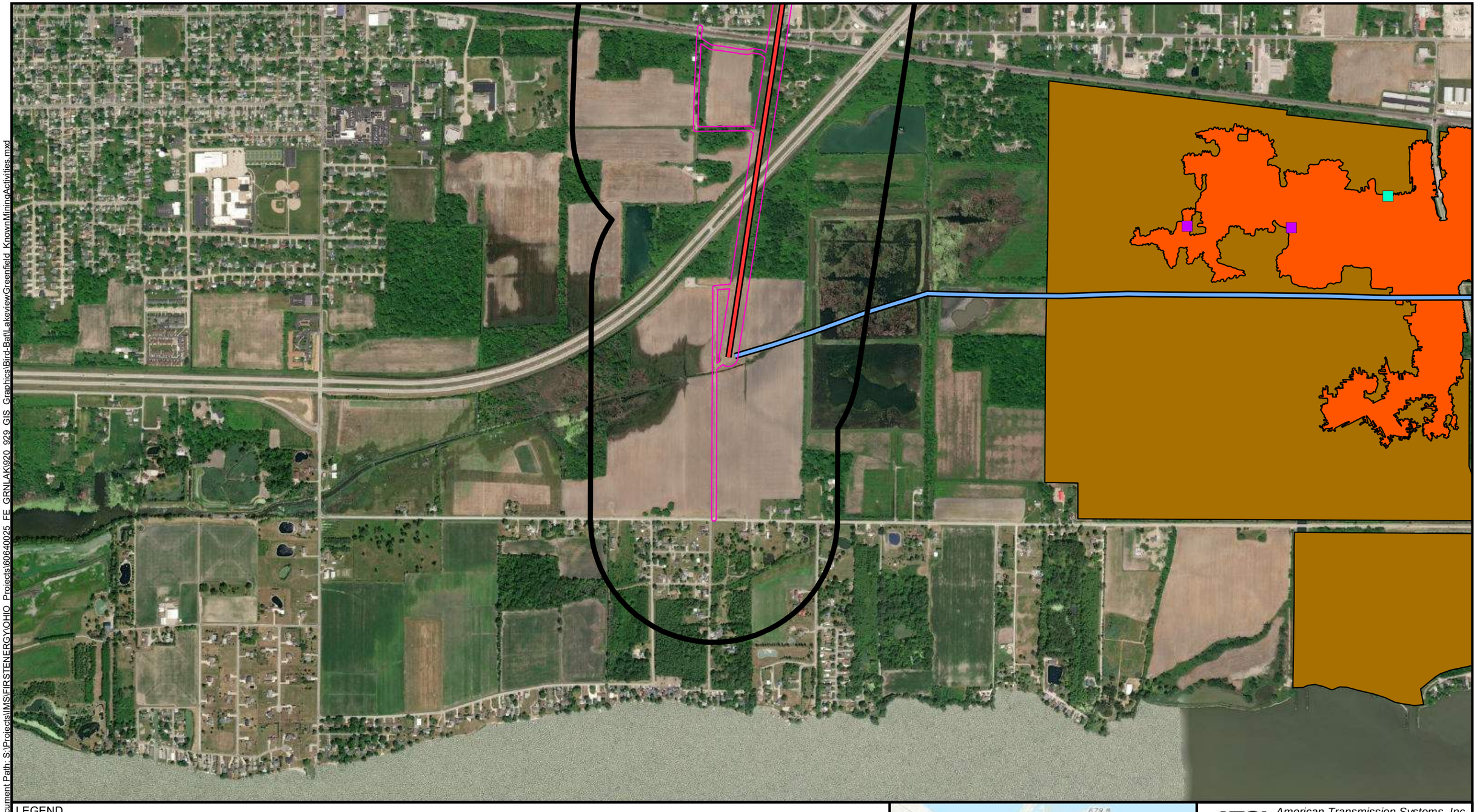
American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV Transmission Line Rebuild

FIGURE 5
KNOWN MINING ACTIVITY MAP

JOB NO. 60635008

AECOM

Date Saved: 11/17/2021 Document Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\Lakeview\Greenfield_KnownMiningActivities.mxd



LEGEND

- Survey Area Quarter Mile Buffer
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)
- Survey Boundary
- Abandoned Underground Mine
- Active Industrial Minerals Surface Mine

Abandoned Underground Mine Opening

- Air Shaft
- Vertical Mine Shaft

0 1,000 2,000
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

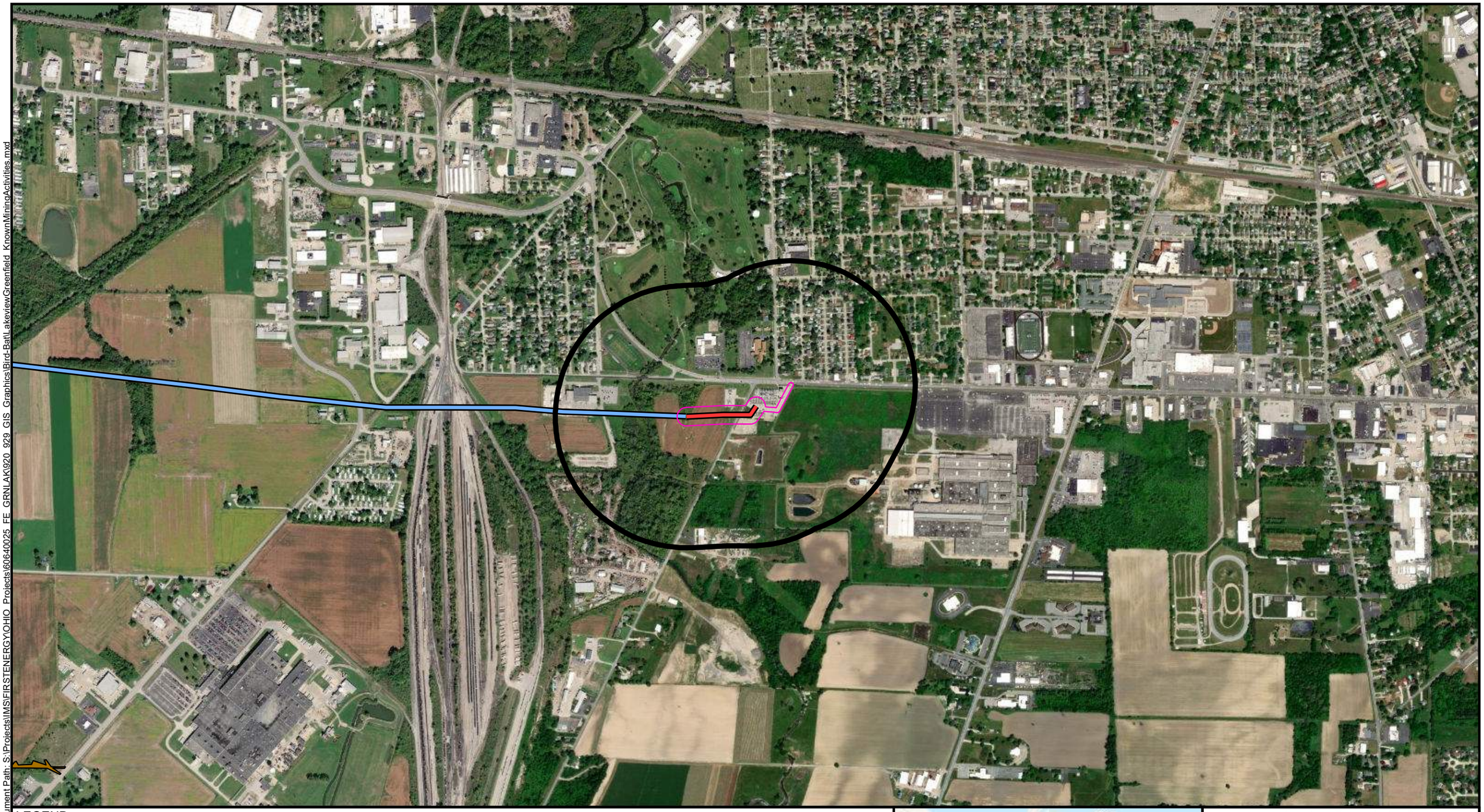
American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

FIGURE 5
KNOWN MINING ACTIVITY MAP

JOB NO. 60635008

AECOM

Date Saved: 11/17/2021 Document Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\Lakeview\Greenfield_KnownMiningActivities.mxd



LEGEND

- Survey Area Quarter Mile Buffer
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)
- Survey Boundary
- Active Industrial Minerals Surface Mine

0 1,000 2,000
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

FIGURE 5
KNOWN MINING ACTIVITY MAP

JOB NO. 60635008

AECOM

No known karst features are within the extent of the map frame. The closest karst feature is approximately 3 miles from the Project.

Document Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\Lakeview\Greenfield_KarstGeology.mxd

Date Saved: 11/17/2021

LEGEND

- Survey Area Quarter Mile Buffer
- Survey Boundary
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)

0 1,000 2,000

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV Transmission Line Rebuild

FIGURE 6
KARST GEOLOGY AND SINKHOLES MAP

JOB NO. 60635008

AECOM

No known karst features are within the extent of the map frame. The closest karst feature is approximately 3 miles from the Project.

Document Path: S:\Projects\IMS\FIRSTENERGYOHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\Lakeview\Greenfield_KarstGeology.mxd

Date Saved: 11/17/2021

LEGEND

- Survey Area Quarter Mile Buffer
- Survey Boundary
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)

0 1,000 2,000

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

FIGURE 6
KARST GEOLOGY AND SINKHOLES MAP

JOB NO. 60635008

AECOM

No known karst features are within the extent of the map frame. The closest karst feature is approximately 3 miles from the Project.

Document Path: S:\Projects\IMS\FIRSTENERGY\OHIO_Projects\60640025_FE_GRNLAK\920_929_GIS_Graphics\Bird-Bat\Lakeview\Greenfield_KarstGeology.mxd

Date Saved: 11/17/2021

LEGEND

- Survey Area Quarter Mile Buffer
- Survey Boundary
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Lakeview-Greenfield 138kV Transmission Line (Not Proposed for Rebuild)

0 1,000 2,000

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

American Transmission Systems, Inc.
Lakeview - Greenfield 138 kV
Transmission Line Rebuild

FIGURE 6
KARST GEOLOGY AND SINKHOLES MAP

JOB NO. 60635008

AECOM

APPENDIX B: QUALIFICATIONS

Sharon Farris
Environmental Scientist
Avian Management & Studies

Education
A.A/ Environmental Studies/ Santa Barbara City College / 1998

B.A. / Cultural Anthropology/ University of California at Santa Barbara (Environmental Studies curriculum) 2001

Years of Experience
16

Certification
40-HR HAZWOPER
Safeland Oil & Gas Training

Specialized Training
2013 – Avian Power Line Interaction Committee (APLIC) Workshop - Spring and Fall)

2013 Poster Presentation at APLIC Spring Workshop – Avian Transmission Line Interaction Study and Bald Eagle Management Planning

2017 – APLIC Fall Workshop/Booth

Summary

Ms. Farris has over 16 years of experience working as an Environmental Scientist in permitting and impact assessment with a specialty in protected avian species in the Northeast/Mid-Atlantic region. Ms. Farris fulfills a technical expert advisory role encompassing the regulatory and ecological aspects associated with avian issues. Experience includes multi-year, multi-species nesting studies, transmission line interaction studies, project avian protection plans, avian/wildlife monitoring, bald eagle management plans, best management practices, and agency consultation. Survey methodology used includes boat-based surveys on large reservoir systems, observation point, transect, carcass search, near miss, and risk assessment for power line interactions (collision and electrocution).

Transmission line avian interaction studies and project-specific avian protection plans for the protection of migratory birds were prepared in accordance with the Avian Power Line Interaction Committee (APLIC) manuals (*Suggested Practices for Avian Protection on Power Line* and *Mitigating Bird Collisions with Power Lines*). Ms. Farris regularly conducts threatened and endangered species review and coordination and impact assessment in multiple states within the Northeast Region.

Representative Project Experience
Avian Technical Lead - Offshore Wind Projects – 2020 -Massachusetts, Connecticut, Rhode Island, New York, and New Jersey (Confidential Offshore Wind Clients) – Preparation of technical documents and proposals including GAP analysis and critical issues analysis for onshore and offshore project elements with potential for impacts to avian species. These types of analyses involve numerous species and groups including waterfowl, wading birds, shorebirds, pelagic birds, gulls, raptors, and passerines.

Lead Verifier – 2020 – Wallops Island Pier, Accomack County, Virginia (Confidential Federal Client) – Technical oversight for federally-threatened Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) for habitat assessment and survey. Provider of guidance for habitat assessment and survey methods, best management practices, and quality assurance for reporting.

Avian Technical Lead – 2019 – Hudson River Drainage Chamber/Moodna Access Shaft (Catskill Aquaduct0 - Duchess and Orange Counties, NY – Provided technical guidance including impact assessment, best management practices, and environmental assessment and USFWS consultation document preparation for Bald Eagle (*Haliaeetus leucocephalus*), Golden Eagle (*Aquila chrysaetos*), and Peregrine Falcon (*Falco peregrinus*). Assessment included incidental take assessment under the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and New York Wildlife Code.

Quality Control/Quality Assurance, Vegetation Management Database for Best Management Practices on Power Line Rights-of-Way (Confidential Electric Utility Client) – Eight Counties in New Jersey – Quality control/assurance for development of database for best management practices for vegetation management on power line rights-of-way with documented threatened and endangered species. Species included multiple state and federal-listed avian species in coastal New Jersey.

Technical Lead, Avian Species – 2016 & 2017 – 100-Mile Ethane Gas Pipeline, Ohio, Pennsylvania, and West Virginia (Confidential O & G Client) – Technical lead for studies and surveys of threatened/endangered avian species including Bald

Eagle, Northern Harrier, and Short-eared Owl (*Asio flammeus*). Technical lead tasks included preparation of work scopes, study/survey design, habitat assessment/delineation, survey crew training, regulatory contact, nest surveys, and survey plan/survey report submittal. Survey plans and surveys were conducted in accordance with protocols for each species.

Technical Lead, Northern Harrier Presence/Absence Nest Surveys, Natural Gas Pipeline, Tioga and Lycoming Counties, PA (Confidential O & G client) – Technical expert for survey design, agency coordination, habitat assessment/delineation, survey crew training, nest survey and reporting for Northern harrier nest surveys. Survey plans and surveys were conducted in accordance with the Pennsylvania Game Commission survey protocol for Northern harrier within Conservation Reserve grasslands.

Survey Lead - 2014 Multi-Species Raptor Surveys for Multiple Transmission Line Rebuild and Upgrade Projects in Salem, Cape May, Burlington, Ocean, and Atlantic Counties, NJ (Atlantic City Electric, an Exelon Company) – Task lead for raptor nest studies for six (6) projects comprising approximately 100 miles of transmission lines located in coastal New Jersey. Focal species were Bald Eagle, Barred Owl (*Strix varia*), Northern Harrier, Osprey (*Pandion haliaetus*), Peregrine fFalcon, and Red-shouldered Hawk (*Buteo lineatus*). Project-specific Avian Protection Plans were developed for each project.

Technical Expert – 2013 – 2014 Osprey Nest Removal and Bald Eagle Nest Recommendations, Former Zinc Smelter Site, Monaca, Beaver County, Pennsylvania (Confidential O & G client) – Technical Expert for regulatory guidance and assessment of two osprey nests located in electric utility towers on-site, as well as evaluation and project clearance for raptor species including Bald Eagle, Peregrine Falcon, and Osprey. Recommendations were provided for Osprey nest removals under the authorization of PGC Special Use Permit.

Survey Lead - 2010 Avian Transmission Line Interaction Survey – Muddy Run FERC Relicensing Studies, Southeast Pennsylvania and Northeast Maryland (Exelon) – Task lead for avian transmission line interaction studies along a 4.25 mile power line ROW for the identification of species at-risk for potential electrocution and collision. Included study design, collection of avian abundance & use data, risk assessment for risk to raptor species, and identification of high risk/low risk areas and species.

Survey Lead - 2010 & 2011 Osprey Nesting Surveys – Conowingo FERC Relicensing Studies, Southeast Pennsylvania and Northeast Maryland (Exelon) – Task lead for boat-based and land-based osprey nesting studies on Conowingo Pond and Muddy Run Reservoir including nest survey and monitoring. Twelve nests and one alternate nest were identified and monitored during these surveys.

Survey/Task Manager - 2010 & 2011 Black-crowned Night-heron Nesting Surveys – Conowingo FERC Relicensing Studies, Southeast Pennsylvania and Northeast Maryland (Exelon) – Field crew lead and study report author for boat-based and land-based black-crowned night-heron nesting studies on Conowingo Pond. Data collected included habitat assessment and breeding/nest survey.

Survey/Task Manager - 2011 & 2012 Bald Eagle Management Plan (BEMP) – FERC Relicensing – Southeast Pennsylvania (PA) and Northeast Maryland (MD) – Preparation of BEMP for protection and enhancement of twelve bald eagle nests and seventeen communal roosts within an approximately 16,000 acre hydroelectric project area.

Surveyor/Monitor – 2007 to 2016 - Bird and Wildlife Monitoring, RCRA Consent Order site, SE PA – Ongoing bird, wildlife, and deterrence measure monitoring within a large reclaimed industrial area along the Delaware River. Focus was on waterfowl species using industrial ponds and passerines during migratory periods.

Chronology

2007 – Present AECOM (formerly URS Corporation), Environmental Scientist
2004 – 2006 Science Applications International Corporation (SAIC), Environmental Planner

Memberships

The Wildlife Society of America
American Ornithologist's Union (AOU)
Raptor Research Foundation
Association of Field Ornithologists
Cape May Observatory/New Jersey Audubon
American Birding Association

APPENDIX C: AGENCY CORRESPONDENCE

Miller, Brian

From: Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, October 20, 2020 9:38 AM
To: Miller, Brian
Cc: Smith, Michelle (Cincinnati); Auggie Ruggiero
Subject: [EXTERNAL] First Energy, Lakeview-Greenfield 138 kV Line Rebuild Ottawa and Erie County Ohio

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# 03E15000-2021-TA-0119

Dear Mr. Miller,

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

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) to avoid impacts to 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.

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 Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@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
Field Office Supervisor

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

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

November 24, 2020

Brian Miller
AECOM
525 Vine Street
Cincinnati, Ohio 45202

Re: 20-945; Lakeview-Greenfield 138kV Transmission Line Rebuild Project

Project: The Project consists of the rebuild of 1.16 miles of an existing 138kV transmission line (two disconnected segments).

Location: The proposed project is located in Portage and Perkins Township, Ottawa and Erie Counties, 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:

Schweinitz' umbrella-sedge (*Cyperus schweinitzii*), T
Eastern pondmussel (*Ligumia nasuta*), E
Black sandshell (*Ligumia recta*), T
Threehorn wartyback (*Obliquaria reflexa*), T
Round pigtoe (*Pleurobema sintoxia*), SC
Salamander mussel (*Simpsonaias ambigua*), SC
Fawnsfoot (*Truncilla donaciformis*), T
Eastern foxsnake (*Pantherophis vulpinus*), SC
Port Clinton Lakefront Preserve – City of Port Clinton

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 Ottawa County portion of the project is within the vicinity of records for the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, and the little brown bat (*Myotis lucifugus*), a state endangered species. The Erie County portion of the project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in the area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH $\geq$ 20 if possible.

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species:

State Endangered
eastern pondmussel *(Ligumia nasuta*)

State Threatened
black sandshell (*Ligumia recta*)
fawnsfoot (*Truncilla donaciformis*)
threehorn wartyback (*Obliquaria reflexa*)

Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the following listed fish species:

State Endangered
lake sturgeon (*Acipenser fulvescens*)
cisco (*Coregonus artedi*)
longnose sucker (*Catostomus catostomus*)
pugnose minnow (*Opsopoeodus emiliae*)
spotted gar (*Lepisosteus oculatus*)
western banded killifish (*Fundulus diaphanus menona*)

State Threatened
American eel (*Anguilla rostrata*)
channel darter (*Percina copelandi*)
greater redhorse (*Moxostoma valenciennesi*)

The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat within 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 Blanding's turtle (*Emydoidea blandingii*), a state threatened species. This species inhabits marshes, ponds, lakes, streams, wet meadows, and swampy forests. Although essentially aquatic, the Blanding's turtle will travel over land as it moves from one wetland to the next. Due to the location, the type of habitat within 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. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the black-crowned night-heron *(Nycticorax nycticorax*), a state-threatened bird. Night-herons are so named because they are nocturnal, conducting most of their foraging in the evening hours or at night, and roost in trees near wetlands and waterbodies during the day. Night herons are migratory and are typically found in Ohio from April 1 through December 1 but can be found in more urbanized areas with reliable food sources year-round. Black-crowned night-herons primarily forage in wetlands and other shallow aquatic habitats, and roost in trees nearby. These night-herons nest in small trees, saplings, shrubs, or sometimes on the ground, near bodies of water and wetlands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the black tern (*Chlidonias niger*), a state endangered bird. The black tern prefers large, undisturbed inland marshes with fairly dense vegetation and pockets of open water. They nest in various kinds of marsh vegetation but cattail marshes are generally favored. Nests are built on top of muskrat houses or on top of floating vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat from April 1 to June 30 to reduce impacts to this species. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the cattle egret (*Bubulcus ibis*), a state endangered bird. Cattle egrets are not strictly wetland birds. They often forage in dry pastures and fields. Egrets nest in colonies and will build a nest out of sticks and other materials wherever it can be supported. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 15. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the common tern (*Sterna hirundo*), a state endangered bird. The preferred nesting sites of common terns are natural or man-made islands that are free of mammalian predators and human disturbance. They will also utilize mainland beaches and dredge disposal areas but only when islands are unavailable. The common tern nests in colonies. Their eggs are laid in a grass-lined depression in the sand. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the king rail (*Rallus elegans*), a state endangered bird. Nests for this species are deep bowls constructed out of grass and usually hidden very well in marsh vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a

nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

The project is within the range of the trumpeter swan (*Cygnus buccinator*), a state threatened bird. Trumpeter swans prefer large marshes and lakes ranging in size from 40 to 150 acres. They like shallow wetlands one to three feet deep with a diverse mix of plenty of emergent and submergent vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to June 15. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

Mike Pettegrew
Environmental Services Administrator (Acting)

APPENDIX D: PHOTOGRAPHIC LOG

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 1	
Date/Location: November 17, 2020	
Description: Photo Location 1 Access road entrance to the existing Lakeview Substation. Small areas of mowed grass present between sidewalks and urban developments. Facing East	

Photo No. 2	
Date/Location: November 17, 2020	
Description: Photo Location 1 Access road entrance to the existing Lakeview Substation. Small areas of mowed grass present between sidewalks and urban developments. Facing West	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 3	
Date/Location: January 14, 2020	
Description: Photo Location 2 Existing electric right-of-way dominated by a mix of upland old field and PEM wetlands. ROW is surrounded by residential properties to the west and local industry to the east. Facing East	

Photo No. 4	
Date/Location: January 14, 2020	
Description: Photo Location 2 Existing electric right-of-way dominated by a mix of upland old field and PEM wetlands. ROW is surrounded by residential properties to the west and local industry to the east. Facing West	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 5	
Date/Location: January 14, 2020	
Description: Photo Location 3 Existing electric right-of-way dominated by a mix of upland old field and PEM wetlands. ROW is surrounded by residential properties to the west and local industry to the east.	

Photo No. 6	
Date/Location: January 14, 2020	
Description: Photo Location 3 Existing electric right-of-way dominated by a mix of upland old field and PEM wetlands. ROW is surrounded by residential properties to the west and local industry to the east. Facing South	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 7	
Date/Location: October 7, 2020	
Description: Photo Location 4 Existing electric right-of-way dominated by residential upland fields and small PEM wetland pockets. ROW is surrounded by residential properties to the west and local industry to the east. Facing North	

Photo No. 8	
Date/Location: October 7, 2020	
Description: Photo Location 4 Existing electric right-of-way dominated by residential upland fields and small PEM wetland pockets. ROW is surrounded by residential properties to the west and local industry to the east. Facing South	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 9	
Date/Location: January 14, 2020	
Description: Photo Location 5 PEM wetland located between East State Street to the north and an existing railroad right-of-way to the south. Area is mowed by a residential property owner. Facing West	

Photo No. 10	
Date/Location: January 14, 2020	
Description: Photo Location 5 PEM wetland located between East State Street to the north and an existing railroad right-of-way to the south. Area is mowed by a residential property owner. Facing East	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 11	
Date/Location: January 14, 2020	
Description: Photo Location 6 View of a wetland complex (Wetland LO-09) located within the existing electric right-of-way. The wetland has a PUB section that is surrounded by both PEM and PSS wetland types. Facing North	

Photo No. 12	
Date/Location: January 14, 2020	
Description: Photo Location 6 View of a wetland complex (Wetland LO-09) located within the existing electric right-of-way. The wetland here is primarily PEM and surrounded by PSS and PUB wetland types. Facing East	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 13	
Date/Location: January 14, 2020	
Description: Photo Location 7 View of a wetland complex (Wetland LO-09) located within the existing electric right-of-way. The wetland has a PUB section that is surrounded by both PEM and PSS wetland types. Facing East	

Photo No. 14	
Date/Location: January 14, 2020	
Description: Photo Location 7 View of a wetland complex (Wetland LO-09) located within the existing electric right-of-way. The wetland here is primarily PEM and surrounded by PSS and PUB wetland types. Facing North	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 15	
Date/Location: January 14, 2020	
Description: Photo Location 8 Intermittent watercourse separates a wetland complex to the north (Wetland LO-09) and an agricultural field to the south. Facing West	

Photo No. 16	
Date/Location: January 14, 2020	
Description: Photo Location 8 Intermittent watercourse separates a wetland complex to the north (Wetland LO-09) and an agricultural field to the south. Facing East	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 17	
Date/Location: October 7, 2020	
Description: Photo Location 9 A small PEM wetland (Wetland LO-10) is located adjacent Highway 2 and an agricultural field to the north. Facing North	

Photo No. 18	
Date/Location: October 7, 2020	
Description: Photo Location 9 A small PEM wetland (Wetland LO-10) is located adjacent Highway 2 and an agricultural field to the north. Facing South	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 19	
Date/Location: October 7, 2020	
Description: Photo Location 10 View of the transition between a PEM/PSS wetland complex to the north (Wetland LO-12) and an agricultural field to the south. Wetland is within the existing electric right-of-way and is surrounded by PFO wetland. Facing North	

Photo No. 20	
Date/Location: October 7, 2020	
Description: Photo Location 10 View of the transition between a PEM/PSS wetland complex to the north (Wetland LO-12) and an agricultural field to the south. Facing South	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 21
Date/Location: November 17, 2020
Description: Photo Location 11 Agricultural field that is crossed by a PEM agricultural swale (Wetland LO-13). Facing South

Photo No. 22
Date/Location: November 17, 2020
Description: Photo Location 11 Agricultural field that is crossed by a PEM agricultural swale (Wetland LO-13). Facing West

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 23
Date/Location: November 17, 2020
Description: Photo Location 12 Existing access road used for access to the existing agricultural fields and an existing cellular tower site. Facing East

Photo No. 24
Date/Location: November 17, 2020
Description: Photo Location 12 Existing access road used for access to the existing agricultural fields and an existing cellular tower site. Facing West

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 25	
Date/Location: November 18, 2020	
Description: Photo Location 13 Access to the existing Greenfield Substation from Old Railroad Road. Facing South	

Photo No. 26	
Date/Location: November 18, 2020	
Description: Photo Location 13 Access to the existing Greenfield Substation from Old Railroad Road. Facing East	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 27	
Date/Location: October 7, 2020	
Description: Photo Location 14 View of the existing electric right-of-way adjacent to the Greenfield Substation. Fields are primarily used for agriculture and includes a small PEM wetland (Wetland LG-01). Facing North	

Photo No. 28	
Date/Location: October 7, 2020	
Description: Photo Location 14 View of the existing electric right-of-way adjacent to the Greenfield Substation. Fields are primarily used for agriculture and includes a small PEM wetland (Wetland LG-01). Facing West	

PHOTOGRAPHIC RECORD

Bird Habitat Assessment and Bat Hibernaculum Report

Client Name:	Site Location:	Project No.
First Energy Corporation	Lakeview - Greenfield 138kV Transmission Line Project	60640025

Photo No. 29	
Date/Location: November 18, 2020	
Description: Photo Location 15 Access to the existing Greenfield Substation from West Perkins Avenue. Facing West	

Photo No. 30	
Date/Location: November 18, 2020	
Description: Photo Location 15 Access to the existing Greenfield Substation from West Perkins Avenue. Facing South	

FW: 20-945; Lakeview-Greenfield 138kV Transmission Line Project

Exhibit 9

Ruggiero, Augustine <aruggiero@firstenergycorp.com>
Mon 11/22/2021 9:22 AM
To: Latina, Alex (Humphrys, Scott M) <alatina@firstenergycorp.com>

Auggie Ruggiero
Transmission Permitting
office: 330-315-6781 (8506781) | cell: 330-803-4304
aruggiero@firstenergycorp.com
341 White Pond Drive, Akron, OH 44320 | mailstop: AK-West Akron Campus

From: Miller, Brian <brian.miller1@aecom.com>
Sent: Monday, November 22, 2021 9:13 AM
To: Ruggiero, Augus ne <aruggiero@firstenergycorp.com>
Subject: [EXTERNAL] FW: 20-945; Lakeview-Greenfield 138kV Transmission Line Project

From: Mike.Pe egrew@dnr.ohio.gov <Mike.Pe egrew@dnr.ohio.gov>
Sent: Monday, November 22, 2021 8:52 AM
To: Miller, Brian <brian.miller1@aecom.com>
Cc: Samantha.Robbins@dnr.ohio.gov
Subject: [EXTERNAL] FW: 20-945; Lakeview-Greenfield 138kV Transmission Line Project

Hi Brian

Please see response below from our DOW. Thanks!

Mike Pe egrew
Environmental Services Administrator (Acting) and ODOT Program Manager
Ohio Department of Natural Resources, Office of Real Estate & Land Management
2045 Morse Road, Building E-2
Columbus, Ohio 43229
Office: (614) 265-6387
mike.pe egrew@dnr.ohio.gov
https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/real-estate/environmental-review/

From: Reardon, Nathan <Nathan.Reardon@dnr.ohio.gov>
Sent: Monday, November 22, 2021 8:50 AM
To: Pe egrew, Mike <Mike.Pe egrew@dnr.ohio.gov>
Cc: Robbins, Samantha <Samantha.Robbins@dnr.ohio.gov>
Subject: RE: 20-945; Lakeview-Greenfield 138kV Transmission Line Project

Mike,

The DOW concurs with the determina on for the winter bat hibernaculum assessment, as well as for the listed bird species. Specifically, the DOW concurs that the avoidance/minimiza on measures proposed for the upland sandpiper, the least bi ern, and the black-crowned night heron are sufficient in minimizing impacts to these species during the nes ng period. Suitable

nes ng habitat for other listed bird species is not present within the project area, and therefore, these species are not likely to be impacted by this project. If there are any ques ons, please let me know.

Thank you,
Nathan

Nathan Reardon
Compliance Coordinator
ODNR Division of Wildlife
2045 Morse Road
Columbus, OH 43229
Phone: 614-265-6741
Email: nathan.reardon@dnr.ohio.gov

From: Miller, Brian <brian.miller1@aecom.com>
Sent: Wednesday, November 17, 2021 2:55 PM
To: Tebbe, Sarah <sarah.tebbe@dnr.ohio.gov>; Stankavich, Sarah <Sarah.Stankavich@dnr.ohio.gov>; Pe egrew, Mike <Mike.Pe egrew@dnr.ohio.gov>
Cc: aruggiero@firstenergycorp.com
Subject: 20-945; Lakeview-Greenfield 138kV Transmission Line Project

Sarah T., Sarah S., and Mike P.

AECOM Technical Services, Inc. (AECOM), on behalf of ATSI, is providing addi onal informa on regarding completed habitat assessments, avoidance measures, and ATSI adherence to the recommenda ons received from environmental review completed by your agency (**ODNR Review Number: 20-943**) as part of the **Lakeview-Greenfield 138kV Transmission Line Project**. As a result, a ached is a copy of the completed **Bird Habitat Assessment and Desktop Assessment for Winter Bat Habitat Report**.

If you need anything else, please let me know.

Thank you,

Brian J. Miller
Project Manager / Senior Ecologist

D +1-412-808-1844
M +1-412-667-9172
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aecom.com

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Exhibit 10

LAKEVIEW-GREENFIELD 138 KV TRANSMISSION LINE REBUILD PROJECT

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:
American Transmission Systems, Inc.
a FirstEnergy Company
76 South Main Street
Akron, Ohio 44308

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

June 2021

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

LIST OF ACRONYMS and ABBREVIATIONS

ATSI	American Transmission Systems, Inc.
DBH	Diameter at Breast Height
°F	Degree Fahrenheit
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
IBI	Index of Biotic Integrity
KV	Kilovolts
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OAC	Ohio Administrative Code
OBL	Obligate Wetland
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High Water Mark
ORAM	Ohio Rapid Assessment Method
PAB	Palustrine Aquatic Bed
PEM	Palustrine Emergent
PML	Palustrine Moss-Lichen
PFO	Palustrine Forested
PHWH	Primary Headwater Habitat
PSS	Palustrine Scrub/Shrub
PUB	Palustrine Unconsolidated Bottom
PUS	Palustrine Unconsolidated Shore
PRB	Palustrine Rock Bottom
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-Of-Way
UPL	Upland
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWH	Warmwater Habitat

1.0 INTRODUCTION

American Transmission Systems, Incorporated (ATSI), a FirstEnergy company, is planning to rebuild the Lakeview-Greenfield 138kV Transmission Line (Project) in Ottawa and Erie Counties, Ohio. The Project includes the rebuild of approximately 1.6 miles of the existing Lakeview-Greenfield 138kV Transmission Line (two disconnected segments), in Portage Township, Ottawa County and Perkins Township, Erie County, Ohio. The first segment is a one mile rebuild of the existing transmission line starting at the Lakeview Substation and terminating at Structure 1397 in Portage Township, Ottawa County, Ohio. The second segment is 0.16-mile rebuild of the existing transmission line that originates at the Greenfield Substation and terminates at Structure 1316 in Perkins Township, Erie County, Ohio. The Project is located on Port Clinton, Vickery, and Sandusky, Ohio U.S. Geologic Survey 7.5" topographic quadrangle (Appendix A, Figure 1 – Agency Overview Map).

The Project is designed to be predominately within the existing maintained transmission line right-of-way (ROW) located mostly within active agricultural fields. Ancillary areas such as pull sites, turn arounds, laydown yards, and access roads have not been fully identified at this time. However, ATSI plans to utilize existing access roads and travel lanes within the existing maintained ROW, to the extent practicable. The Project is not expected to require substantial clearing of forested habitat, although some trimming and minimal clearing for access roads, incremental ROW widening, potential reroutes, and maintenance along the existing ROW may be necessary. In order to mitigate for potential effects to state and federal listed bat species, ATSI intends to clear trees between October 1st and March 31st to avoid impacts to the species.

On behalf of ATSI, AECOM completed the wetland delineation and stream assessment on January 14 through 17, and October 7, 2020 The extent of the wetland delineation and stream assessment conducted by AECOM is defined throughout this Wetland Delineation and Stream Assessment Report as the AECOM survey area. The survey area completed by AECOM includes a 100-ft offset of the proposed transmission lines and 50-ft corridor centered along proposed temporary access roads.

The portion of the Project, in Ottawa County, drains directly into Lake Erie and Sandusky Bay as well as Wonnell Ditch that is connected to both Lake Erie and Sandusky Bay, which is associated with the Portage River Drainage Basin. The portion within Erie County, drains towards the western direction and eventually into Mills Creek, which is associated with the Sandusky River Drainage Basin.Under the Ohio Administrative Code (OAC) Chapter 3745-1 aquatic life habitat use designation lists Mills Creek as a Warmwater Habitat (WWH). However, Wonnell Ditch and/or unnamed tributaries to Lake Erie are not listed within the Portage River Drainage Basin (State of Ohio 2018).

As per the Section 401 Water Quality Certification (WQC) for Nationwide Permit and Stream Eligibility Web Map website (Ohio Environmental Protection Agency (OEPA), the Project is located within an Eligible area and impacts to streams, if required, could be authorized by the United States Army Corps of Engineers (USACE) under the Nationwide Permit Conditions.

The Ottawa County portion of the Project is situated within both North Side Sandusky Bay [Hydrologic Unit Code (HUC): 041000111405] and Lacarpe Creek-Frontal Lake (HUC: 041000100503). Additionally, the Erie County portion of the Project is within Mills Creek (HUC: 041000110103). According to the OEPA 2020 Ohio Integrated Water Quality Monitoring and Assessment, the Project area is divided into two watershed reports, which include the Portage River and Toussaint River as well as Sandusky River and Sandusky Bay Tributaries (OEPA 2020).

2.0 METHODOLOGY

Prior to conducting field surveys, digital and published county Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and USGS 7.5-minute topographic maps were reviewed as an exercise to identify the occurrence and location of potential wetland areas (Figure 2). The purpose of the field survey was to assess whether wetlands and other "waters of the U.S." are present within the Project's survey area, which consisted of a 100-ft offset of the proposed transmission lines and 50-ft corridor centered along access roads (Figures 2 and 3).

AECOM ecologists walked the AECOM Survey Area, access roads, and work areas to conduct a wetland delineation and stream assessment. During the field survey, the physical boundaries of observed water features, if identified, were recorded using sub-meter capable Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy.

2.1 WETLAND DELINEATION

The AECOM survey aera was evaluated according to the procedures outlined in the USACE *1987 Wetland Delineation Manual (1987 Manual)* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (Regional Supplement)* (USACE 2012). The Regional Supplement was released in August 2010 by the USACE to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The *1987 Manual and Regional Supplement* define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are placed where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for any of the identified wetlands, AECOM utilized the routine delineation method described in the *1987 Manual and Regional Supplement* that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

Land uses observed within the AECOM survey aera were assigned a general classification based upon the principal land characteristics of the location as observed through aerial photography review and observations during the field surveys.

2.1.1 Soils

Soils were examined for hydric soil characteristics using a spade shovel to extract soil samples. A *Munsell Soil Color Chart* (Kollmorgen Corporation 2010) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

2.1.2 Hydrology

The *1987 Manual* requires that an area be inundated or saturated to the surface for an absolute minimum of five percent of the growing season (areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The *Regional Supplement* states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (12-in. depth) is 41 degrees Fahrenheit (˚F) or higher as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The *Regional Supplement* also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (five years out of ten, or 50 percent probability) date of the last and first 28˚F air temperature in the spring and fall, respectively. The National Weather Service WETS data obtained from the NRCS National Water and Climate Center reveals for Ottawa and Erie Counties that growing season in an average year lasts from April 13 to November 8, or about 208 days. In the Project area, five percent of the growing season equates to approximately ten days (USDA-NRCS 2020).

The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the *1987 Manual* and *Regional Supplement.* Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as, drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE 2012).

2.1.3 Vegetation

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the U.S. Army Corps of Engineers *2018 National Wetland Plant List* (Lichvar et al. 2016), which encompasses the area of the Project. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. Recent USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE 2012).

2.1.4 Wetland Classifications

Wetlands were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). If wetlands were identified within the survey area; they would typically be classified as freshwater, palustrine systems, which include non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. The common palustrine wetland classification types are as follows:

- ***PEM*** – Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

- ***PSS*** – Palustrine scrub/shrub wetlands are characterized by woody vegetation that is less than three inches diameter at breast height (DBH), and greater than 3.28 feet tall. The woody angiosperms (i.e., small trees or shrubs) in this broad-leaved deciduous community have relatively wide, flat leaves that are shed annually during the cold or dry season.

- ***PFO*** – Palustrine forested wetlands are characterized by woody vegetation that is three inches or more DBH, regardless of total height. These wetlands generally include an overstory of broad-leaved and needle-leaved trees, an understory or young saplings and shrubs, and an herbaceous layer.

- ***PUB*** – Palustrine unconsolidated bottom wetlands includes all open water wetlands and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. Palustrine open water wetlands are characterized by the lack of large stable surfaces for plant and animal attachment.

- ***PAB*** – Palustrine aquatic bed wetlands are characterized by plants that grow principally on or below the surface of the water for most of the growing season in most years. These plants are best developed in relatively permanent water or under conditions of repeated flooding.

- ***PML*** – Palustrine moss-lichen wetlands include areas where mosses or lichens cover at least 30 percent of substrates other than rock and where emergents, shrubs, or trees alone or in combination cover less than 30 percent.

- ***PUS*** – Palustrine unconsolidated shore wetlands are characterized by substrates lacking vegetation except for pioneer plants that become established during brief periods when growing conditions are favorable. Unconsolidated shore wetlands have less than 30% areal coverage of vegetation and less than 75 percent areal cover of stones, boulders or bedrock.

- ***PRB*** – Palustrine rock bottom wetlands includes all wetlands and deepwater habitats with substrates having an aerial cover of stones, boulders, or bedrock 75 percent or greater and vegetative cover of less than 30 percent. Rock bottom wetlands and deepwater habitats are characterized by substrates predominantly made up of stones, boulders, or bedrock.

For some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation is listed.

2.1.5 Ohio Rapid Assessment Method v. 5.0

The Ohio Environmental Protection Agency (OEPA) *Ohio Rapid Assessment Method for Wetlands* v. 5.0 (*ORAM*) was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under *ORAM* resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to 64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack 2001).

Category 1 Wetlands

Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low

species diversity, no significant habitat or wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has a limited potential for restoration or is of low ecological functionality.

Category 2 Wetlands

Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past but have been degraded to Category 2 status.

Category 3 Wetlands

Wetlands that are assigned to Category 3 have "...superior habitat, or superior hydrological or recreational functions." They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. A wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit "superior" hydrologic functions (e.g., flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.2 STREAM CROSSINGS

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and "designated uses" to all waters of the U.S. upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high-water mark (OHWM). The USACE defines OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE 2005).

Stream assessments were conducted using the methods described in the OEPA's Methods for Assessing Habitat in Flowing Waters: Using OEPA's *Qualitative Habitat Evaluation Index* (Rankin 2006) and *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 4.1* (Ohio EPA 2020).

2.2.1 OEPA Qualitative Habitat Evaluation Index

The qualitative habitat evaluation index (QHEI) is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (*e.g.,* macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive quantitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for a particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile, if natural pools are greater than 15.75 inches, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the OEPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 mi^2) versus larger streams (L are those with a watershed area greater than 20 mi^2). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L) (Rankin 2006).

2.2.2 OEPA Primary Headwater Habitat Evaluation Index

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The headwater habitat evaluation index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a "defined bed and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 mi2 (259ha), and a maximum depth of water pools equal to or less than 15.75 inches" (Ohio EPA 2020).

Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessments result in a score (0 to 100) that is converted to a specific PHWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PHWH Streams", 30 to 69.9 are "Class 2 PHWH Streams", and 70 to 100 are "Class 3 PHWH Streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. According to the OEPA, if the stream score falls into a class and the scorer feels that based on site observations that score does not reflect the actual stream class, a decision-making flow chart can be used to determine appropriate PHWH stream class using the HHEI protocol (Ohio EPA 2020). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

Class 1 PHWH Streams: Class 1 PHWH Streams are those that have "normally dry channels with little or no aquatic life present" (Ohio EPA 2020). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class 2 PHWH Streams: Class 2 PHWH Streams are equivalent to "warm-water habitat" streams. This stream class has a "moderately diverse community of warm-water adapted native fauna either present seasonally or on an annual basis" (Ohio EPA 2020). These species communities are composed of vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering, headwater temporary, and/or temperature facultative species.

Class 3 PHWH Streams: Class 3 PHWH Streams usually have perennial water flow with cool-cold water adapted native fauna. The community of Class 3 PHWH Streams is comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

2.2.3 401 Eligibility Watersheds

Under the 401 Water Quality Certification for the 2017 and 2021 Nationwide Permits (NWP), OEPA has limited the use of the expedited permits for impacts to high quality streams in Ohio. OEPA has developed a map/shapefile which designates Ohio watersheds into three categories:

Ineligible Areas: If any stream proposed to be impacted is located in an ineligible area, then impacts to that stream are not eligible for coverage under the NWPs and an individual 401 WQC will be required from OEPA.

Possibly Eligible Areas: Any stream proposed to be impacted which is located in a possibly eligible area will require additional field screenings. The pH value must be collected and a QHEI or HHEI assessment must be performed on the stream. Flow charts provided in the OEPA Final Signed WQC NWP 2017 (Ohio EPA 2017) will then be used to determine if stream impacts will be eligible for coverage under the NWP or if an individual 401 WQC is required.

Eligible Areas: Any impacts to streams located in eligible areas are eligible for coverage under the NWP.

3.0 RESULTS

AECOM delineated a total of 15 wetland complexes including 10 PEM wetlands, three PSS wetlands, one PEM/PSS wetland complex, and one PEM/PSS/PUB wetland complex. Additionally, AECOM identified a total of three perennial streams within the AECOM survey area. These wetlands and streams are discussed in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils within each wetland were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Surveys of Ottawa and Erie Counties, Ohio (USDA NRCS 2018) and the NRCS Hydric Soils Lists of Ohio, three soil map units are listed as hydric soils within the AECOM survey area. Additionally, two other soil maps units are listed as hydric inclusions due to displaying hydric soils with a minor component of the soil map unit (USDA NRCS 2018). Table 1 provides a detailed overview of all soil series and soil map units within the Project survey area. Soil map units located within the AECOM survey area are shown on Figures 2.

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE PROJECT'S SURVEY AREA

Soil Series[1]	Symbol[1]	Map Unit Description[1]	Topographic Setting[2]	Hydric[3]	Hydric Component (%)
Bono	Bo	Bono silty clay	Depressions	Yes	Bono (95 %)
Fulton	FuA	Fulton silty clay loam, 0 to 2 percent slopes	Depressions on lake plains	Yes*	Toledo (5%)
Shinrock	SkC2	Shinrock silty clay loam, 6 to 12 percent slopes, eroded	Depressions on lake plains	Yes*	Milford (10%)
Toledo	To	Toledo silty clay, 0 to 1 percent slopes	Lakebeds (relicts)	Yes	Toledo, Lenawee (93%)
Toledo	ToA	Toledo silty clay, 0 to 1 percent slopes	Lakebeds (relics)	Yes	Toledo, Lenawee (93%)
Udorthents	Ud	Udorthents, gently sloping	-	No	-

NOTES:
(1) Data sources include:
USDA. NRCS. 2019. Web Soil Survey. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
USDA. NRCS. 2018. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/
USDA. SCS. 1989. Soil Survey of Trumbull County, Ohio
(2) Web Soil Survey provides the Topographic Setting for each soil map unit.
(3) Soils that are identified as hydric with an asterisk represent soils with hydric inclusions within the identified topographic settings.

3.1.2 National Wetland Inventory Map Review

According to NWI maps of the Port Clinton, Vickery, and Sandusky, Ohio quadrangles, the AECOM survey area contains three mapped NWI wetlands. The mapped NWI wetlands include two palustrine emergent, persistent, seasonally flooded (PEM1C), one riverine, unknown perennial, unconsolidated bottom, permanently flooded (R5UBH), and one riverine, unknown perennial, unconsolidated bottom, semi permanently flooded, excavated (R5UBFx). The NWI mapped wetlands were field verified as the following:

- The NWI mapped wetland, PEM1C (Figure 2-2), was field verified as a PEM wetland complex located within the existing right-of-way, LO-09 (Figure 3-2).
- The NWI mapped wetland, PEM1C (Figure 2-3), was field verified as a PEM wetland complex located within the existing right-of-way, LO-09 (Figure 3-2).
- The NWI mapped wetland, R5UBH (Figure 2-4), located near the existing Structure 1397, was field verified as being a channelized stream within an agricultural field, Stream LO-03, as well as Wetland LO-13 (Figure 3-4).
- The NWI mapped wetland, R5UBFx (Figure 2-5), located near the Lakeview substation, and crosses the existing right-of-way. The stream was field verified as Stream LO-01 (Figure 3-5).

The locations of these NWI mapped and delineated wetlands are displayed on Figure 2 and 3, respectively with photographs provided in Appendix D.

3.1.3 Delineated Wetlands

During the delineation, AECOM identified a total of 15 wetlands, ranging in size from 0.001 acre to 1.939 acres, within the AECOM survey area. Some wetland boundaries extended beyond the survey area, but only the wetland area identified within the AECOM survey area was assessed. Wetland complex that were identified as continuing outside the survey area and are directly connected to other identified unique wetland habitats within the survey area include:

- Wetland LO-01, Wetland LO-02, Wetland LO-03, and Wetland LO-04 are the same wetland complex that are connected outside of AECOM's survey area;
- Wetlands LO-07, LO-09a/b/c, and LO-10 are the same wetland complex that are connected by a depressional area along the edge of an existing railroad ditch and outside of AECOM's survey area; and
- Wetlands LO-11, LO-12 and LO-13 are connected by a swale/depression along Highway 2.

As a result, the connected wetland complexes were scored together as a cumulative ORAM score and seperate USACE datapoints were collected to represent the unique wetland habitat within the complexes. As a result, a total of 15 unique wetland crossings were identified that are composed of four different wetland habitat types. These habitat types include 10 PEM wetlands, three PSS wetlands, one PEM/PSS wetland, and one PEM/PSS/PUB wetland complex. Table 2 provides a summary of the delineated wetlands within the AECOM survey area.

The locations and approximate extent of the wetlands identified within the AECOM survey area are shown on Figures 3. Completed USACE wetland determination and ORAM forms are provided in Appendices A and B, respectively. Color photographs taken of each wetland habitat have been provided in Appendix D.

TABLE 2
DELINEATED WETLANDS WITHIN THE PROJECT'S SURVEY AREA

Wetland Name	Latitude	Longitude	Cowardin Classification[1]	NWI Classification	ORAM Score[2]	ORAM Category[2]	Acreage within Survey Area	Acreage within 100-ft ROW	Figure 3 Sheet Number
Wetland LG-01	41.432325	-82.729113	PEM	N/A	14	Category 1	0.107	0.042	6
Wetland LO-01	41.512650	-82.914993	PEM	N/A	24	Category 1	1.306	0.640	1
Wetland LO-02	41.512136	-82.915062	PSS	N/A			0.254	0.252	1
Wetland LO-03	41.511972	-82.915261	PEM	N/A			0.274	0.066	1
Wetland LO-04	41.509865	-82.915919	PEM	N/A			0.056	0.018	2
Wetland LO-05	41.509147	-82.915840	PEM	N/A	14	Category 1	0.044	0	2
Wetland LO-06	41.508642	-82.916060	PEM	N/A	14	Category 1	0.041	0.016	2
Wetland LO-07	41.508123	-82.915952	PSS	N/A	28.5	Category 1	0.135	0.127	2
Wetland LO-08	41.508444	-82.918891	PSS	N/A	21	Category 1	0.001	0	2
Wetland LO-09	41.508409	-82.918692	PEM	PEM1C	28.5	Category 1	1.601	0.746	2, 3
	41.508332	-82.918240	PSS	PEM1C			0.399	0.068	2, 3
	41.507219	-82.916225	PUB	PEM1C			0.639	0.433	2, 3
Wetland LO-10	41.504430	-82.916852	PEM	N/A			0.332	0.172	3
Wetland LO-11	41.503238	-82.917258	PEM	N/A	37.5	Category 2	0.147	0.089	3
Wetland LO-12	41.502252	-82.917352	PEM	N/A			1.939	1.517	3,4
	41.502966	-82.916991	PSS	N/A			0.592	0.151	3,4
Wetland LO-13	41.494527	-82.933613	PEM	R5UBH			0.012	0	4
Wetland LO-40	41.514439	-82.915737	PEM	N/A	9	Category 1	0.001	0	1
Total: 15	**PEM: 10; PSS: 3; PEM/PSS: 1; PEM/PSS/PUB: 1**						**7.88**	**4.34**	

Cowardin Classification[1]: PEM = palustrine emergent; PSS = palustrine scrub/shrub, PUB = palustrine unconsolidated bottom, and PFO = palustrine forested
ORAM Category[2:] The Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms

3.1.4 Delineated Wetlands ORAM V5.0 Results

Within the Project's survey area, 14 wetlands are identified as Category 1 and one is Category 2. Wetland LO-40 had the lowest ORAM score, 9, while Wetland LO-11, LO-12, and LO-13 received the highest score of 37.5. Additionally, several wetlands were identified as continuing outside of the survey area and were included within the scoring boundary of the ORAM assessment with entire boundaries estimated via desktop and site investigations. The scoring boundary extents for each resource are displayed in the attached drawing included in the 10-page ORAM forms in Attachment B. A summary of classified ORAM scores has been provided below as well as in Table 2 and Table 3.

TABLE 3

SUMMARY OF DELINEATED WETLANDS WITHIN PROJECT'S SURVEY BOUNDARY

Cowardin Wetland Type[1]	ORAM Category 1	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within Project's Survey Area	Acreage within 100-Foot ROW
PEM	10	0	0	10	2.32	1.04
PSS	3	0	0	3	0.39	0.38
PEM/PSS	0	1	0	1	2.53	1.67
PEM/PSS/PUB	1	0	0	1	2.64	1.25
Sub-Total	**1**	**10**	**0**	**15**	**7.88**	**4.34**

1. Cowardin classification: PFO = palustrine forested, PSS = palustrine scrub/shrub, PEM = palustrine emergent
2. No wetlands were identified within the survey area associated with the Riverbend Substation expansion.

Category 1 Wetlands

Twelve Category 1 wetlands (Wetland LG-01, Wetland LO-01, Wetland LO-02, Wetland LO-03, Wetland LO-04, Wetland LO-05, Wetland LO-06, Wetland LO-07, Wetland LO-08, Wetland LO-09, Wetland LO-10, and Wetland LO-40) were identified within the Project survey area. The lowest scoring Category 1 wetland was Wetland LO-40, with a score of 9 and the highest scoring Category 1 wetlands were Wetland LO-07, Wetland LO-08, Wetland LO-09 complex, and Wetland LO-10, with a score of 28.5. The wetlands exhibited very narrow or narrow upland buffers and high to low intensity of surrounding land use (e.g., 2nd growth forest, young forest, fallow fields, agricultural fields, and urban or industrial land). The wetlands also exhibited poor, fair, or poor to fair plant community development with a sparse to extensive percentage of invasive species, and characteristically had habitat and hydrology recovering from previous manipulation due to mowing, clear cutting, selective cutting and disturbances from railroads and other railroads and/or roads.

Category 2 Wetlands

A total of three Category 2 wetland (Wetland LO-11, Wetland LO-12 complex, and Wetland LO-13) were identified within the Project survey area. The wetlands had a score of 37.5. These wetlands exhibited narrow upland buffers and low to high intensity of surrounding land use (e.g. 2nd growth forest, young forest, fallow fields, agricultural lands, and urban or industrial land). The wetlands also exhibited moderately good plant community development with an extensive percentage of invasive species. Both habitat and hydrology of the wetland area displayed recovering from previous manipulation due to mowing, agricultural practices, and other likely disturbances including tree/sapling removal as well as stormwater input from the surrounding railroads and/or roads.

Category 3 Wetlands

No Category 3 wetlands were identified within the Project boundary.

3.2 STREAM CROSSINGS

AECOM identified three streams, totaling 1,559 linear feet, within the AECOM survey boundary, as listed in Table 3. The streams are comprised of three perennial streams. The locations of the streams identified within the AECOM survey areas are shown on Figure 3. For the extent of this assessment, please see the HHEI forms provided in Appendix C.

HHEI evaluations were conducted on all four of the streams within the AECOM survey area. QHEI evaluations were not conducted on any of the streams within the AECOM survey area. AECOM evaluations were conducted at or near the crossing for each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

TABLE 3
DELINEATED STREAMS WITHIN THE PROJECT'S SURVEY AREA

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used[1]	Score	Class or Narrative Description[2]	Bank Full Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for Nationwide Permits[3]	Linear Feet Within Survey Area	Linear Feet Within 100-ft ROW	Figure 3 Sheet Number
Stream LO-01	41.51208	-82.91535	Unnamed Tributary (UNT) to Lake Erie	Perennial	HHEI	60	Modified Class II	11	18	Eligible	565	277	1
Stream LO-02	41.50583	-82.91653	UNT to Lake Erie	Perennial	HHEI	63	Modified Class II	6	22	Eligible	943	101	3
Stream LO-03	41.49848	-82.91816	UNT to Lake Erie	Perennial	QHEI	21	Very Poor	7	12	Eligible	51	0	4
Total: 3											**1,559**	**378**	

1. HHEI = Headwater Habitat Evaluation Index
2. Class or Narrative Description provides the designated beneficial uses for assessed resources identified within the Ohio Administrative Code Chapter 3745-1 Water Quality Standards. In absence of a listed designation for a resource, AECOM included the Category assessment identified by the OEPA's Qualitative Habitat Evaluation Index (Rankin 2006) or Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 4.1.
3. As defined by OEPA Division of Surface Water Stream Eligibility Map. Available online at: http://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=e6b46d29a38f46229c1eb47deefe49b6

3.2.1 Qualitative Habitat Evaluation Index

One qualitative stream, totaling 51 linear feet, was identified within the Project's survey boundary. This stream was categorized as Very Poor. Completed HHEI forms for each stream are provided in Appendix C. Representative color photographs of selected streams were taken during the field survey and are provided in Appendix D.

3.2.2 Primary Headwater Habitat Evaluation Index

Two headwater streams, totaling 1,508 linear feet, were identified within the Project's survey boundary. These streams were categorized as two Modified Class 2 PHWM streams. Completed HHEI forms for each stream are provided in Appendix C. Representative color photographs of selected streams were taken during the field survey and are provided in Appendix D.

Class 1 PHWH Stream – No Class 1 streams were identified within the Project survey boundary.

Modified Class 2 PHWH Streams – Two streams, totaling 1,508 linear feet within the Project's survey boundary, with scores ranging from 60 to 63 were identified during the field investigations. Both streams exhibited perennial flow regime. The substrates primarily consisted of silt and cobble with lesser amounts of gravel and artificial. The streams showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the streams receiving a Modified designation. The maximum pool depth ranged from 18 to 22 inches, and average bankfull widths ranged from 6 to 11 feet.

Class 3 PHWH Stream - No Class 3 streams were identified within the Project survey boundary.

3.3 PONDS

No ponds were surveyed within the AECOM survey area.

4.0 SUMMARY

The ecological survey of the AECOM survey area identified a total of 15 wetlands and three streams. The five wetland habitat types within AECOM survey area include a total of 10 PEM wetlands, three PSS wetlands, one PEM/PSS wetland complex, and one PEM/PSS/PUB wetland complex. Of these, 12 were identified as Category 1 wetlands and three as Category 2 wetlands. No ORAM Category 3 wetlands were identified. Furthermore, the initial coordination for state and federal listed species as well as species specific surveys have been completed. The review of listed species and their critical habitat has been completed and incorporated within the ORAM scores presented within this report, if applicable. The coordination and species specific reports completed for this Project are prepared as standalone documents and can be provided upon request.

The three streams identified within the AECOM survey area included three perennial streams. Two streams were identified using HHEI methodology as Modified Class II Streams and the stream identified using QHEI methodology as a Very Poor Warmwater Stream.

On June 22, 2020, the Navigable Waters Protection Rule under the Clean Water Act (CWA) was modified and in most cases, excluded ephemeral stream as being jurisdictional waters of the United States. Therefore, the jurisdictional status of ephemeral streams shall be left to the federal review, if required, and AECOM has preliminarily determined that all assessed streams and wetlands within the AECOM survey area are jurisdictional (i.e., waters of the U.S.). The locations of the streams and wetlands identified within the survey area are shown on Figure 3. However, Wetland LG-01 may be considered isolated and may warrant further review by the OEPA if impacts occurs to this feature.

The information contained in this wetland delineation report is for a survey area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, an addendum that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the Project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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FIGURES

Existing Lakeview Substation
41.5133
-82.9148

Structure 1397
41.4989
-82.9176

Ottawa County

PORT CLINTON

PORTAGE

Gypsum

Hickory Grove

Port Clinton

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LEGEND

- Existing Substation
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- AECOM Survey Area

0 0.5 1
Miles

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 1
OVERVIEW MAP
PAGE 1 OF 2

JOB NO. 60640025

AECOM

Structure 1316
41.4324
-82.7307

Existing Greenfield Substation
41.4327
-82.728

Erie County

LEGEND

- Existing Substation
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- AECOM Survey Area

0 0.5 1
Miles

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 1
OVERVIEW MAP
PAGE 2 OF 2

JOB NO. 60640025

AECOM

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L2UBH

163

578

Lakeview

Lakeview Substation

1458

R5UBFx

Substation

PUBG

PUBG

1457

PUBG

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LEGEND

- Existing Structures
- Existing Substation
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- National Wetland Inventory (NWI)

MUSYM

- Bo
- Ud

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 2
SHEET 1 of 6
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60640025

AECOM

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LEGEND

- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- National Wetland Inventory (NWI)

MUSYM

- Bo
- To
- Ud

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 2
SHEET 2 of 6
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60640025

AECOM

LEGEND

- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- National Wetland Inventory (NWI)

MUSYM

- Bo
- To

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

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Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 2
SHEET 3 of 6
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60640025

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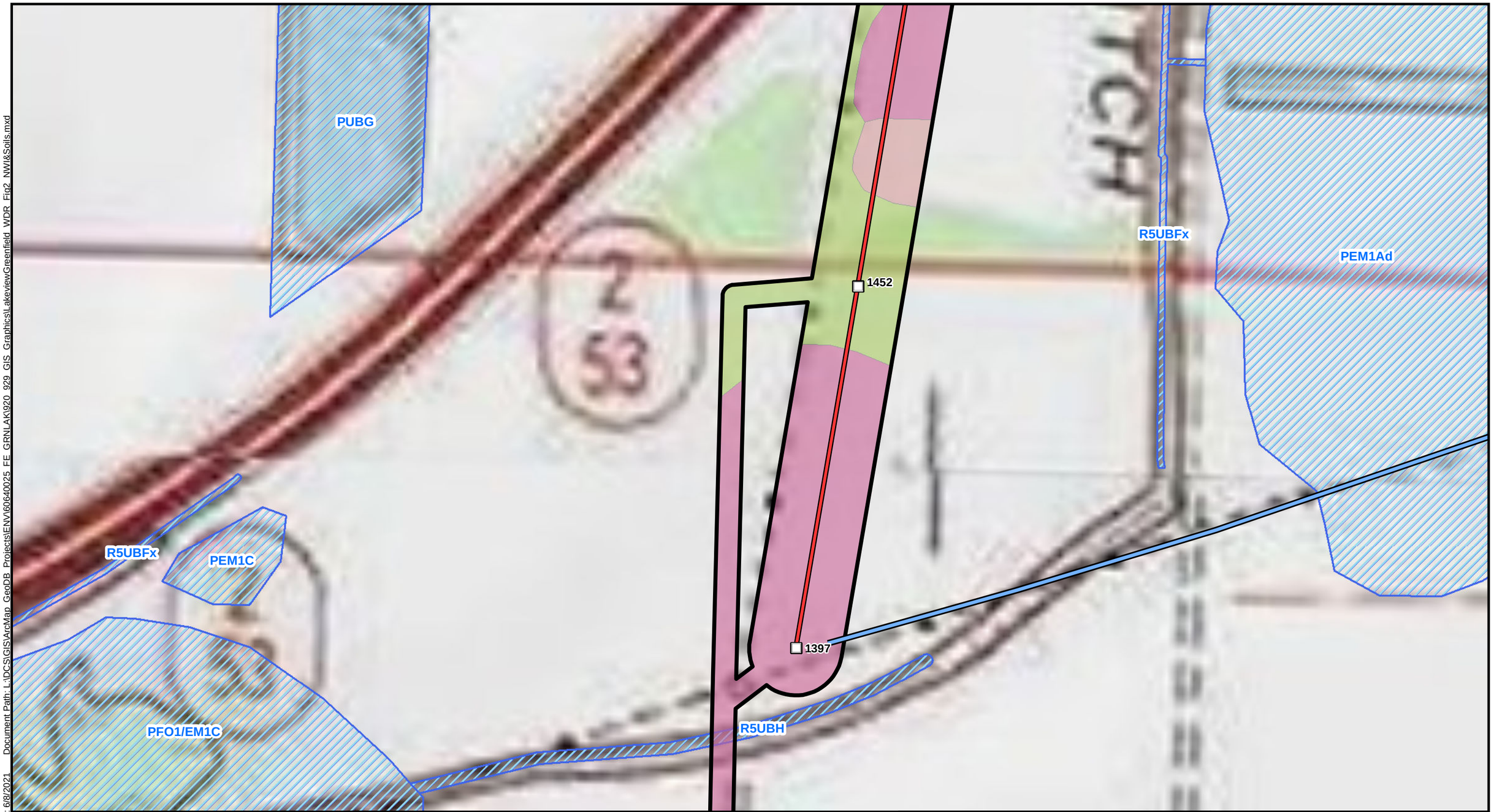

LEGEND

- Existing Structures
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- National Wetland Inventory (NWI)

MUSYM

- Bo
- To
- Ud

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

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Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 2
SHEET 4 of 6
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60640025

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LEGEND

National Wetland Inventory (NWI)

MUSYM

- Bo
- To

0 200 400

Feet

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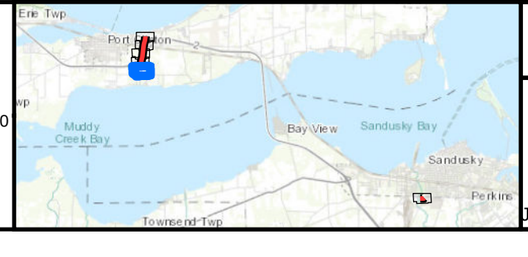

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Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 2
SHEET 5 of 6
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60640025

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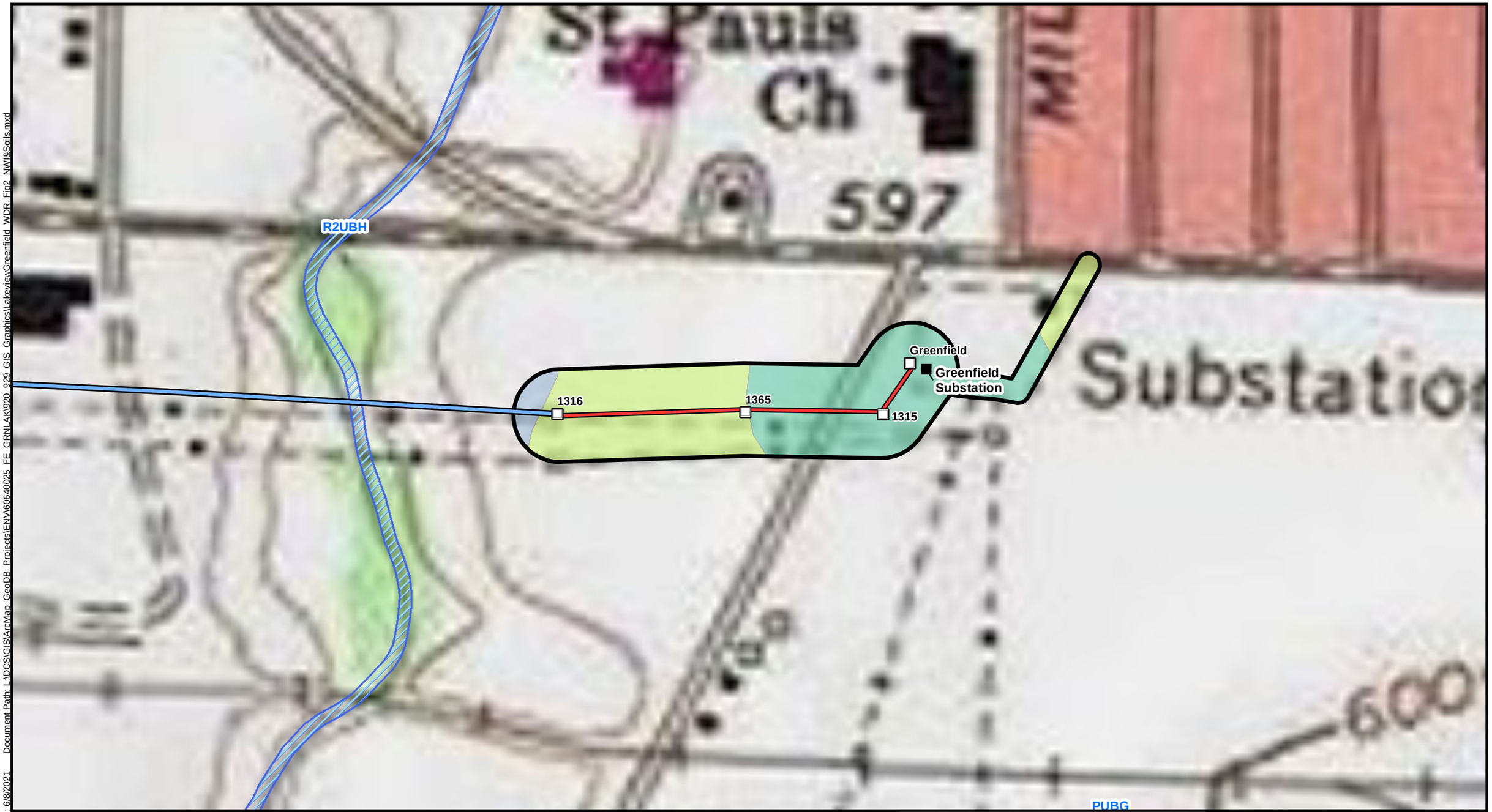

LEGEND

- Existing Structures
- Existing Substation
- Existing Greenfield-Ottawa 138kV Transmission Line (Not Proposed for Rebuild)
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- National Wetland Inventory (NWI)

MUSYM

- FuA
- SkC2
- ToA

0 200 400
Feet

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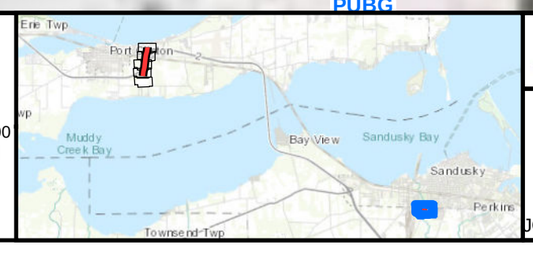

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Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 2
SHEET 6 of 6
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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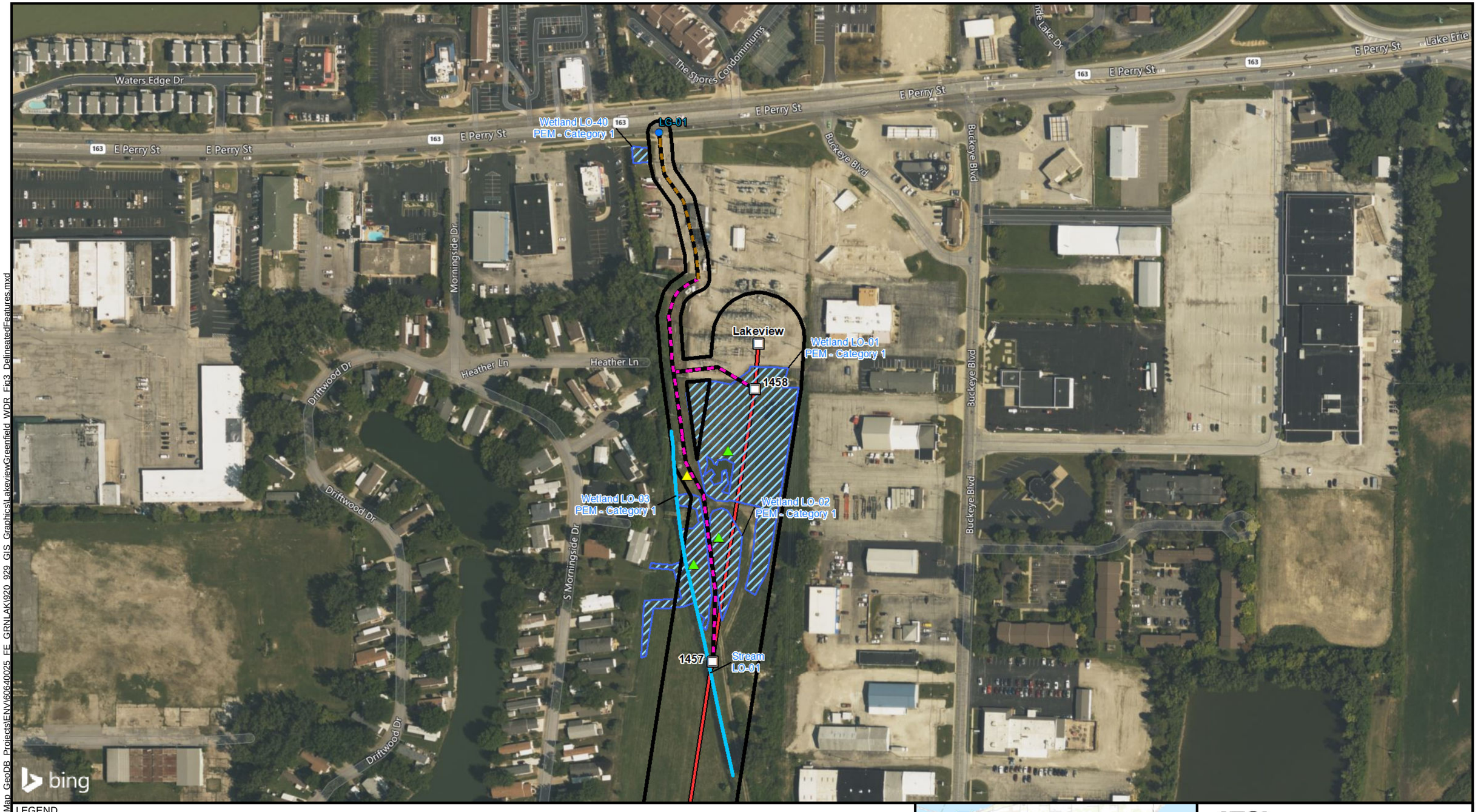

LEGEND

- Access Entrance
- Upland Data Point
- Wetland Data Point
- Existing Substation
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Paved Access Road
- Proposed Temporary Access Road
- Delineated Stream (HHEI)
- Delineated Wetland

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, ESRI World Imagery (Clarity)

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 3
SHEET 1 of 6
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60640025

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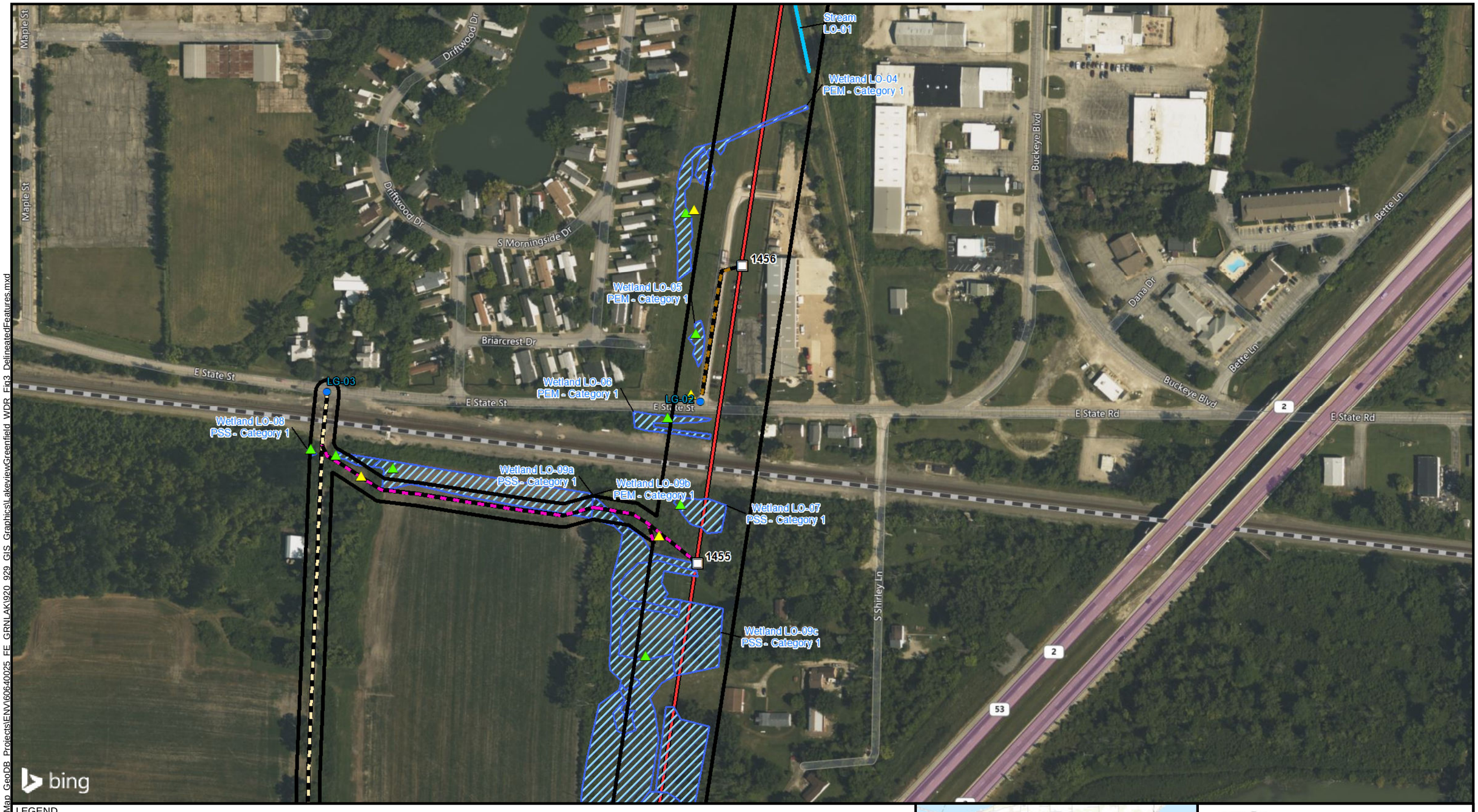

LEGEND

- Access Entrance
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- Wetland Data Point
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- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Paved Access Road
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Stream (HHEI)
- Delineated Wetland

0 200 400
Feet

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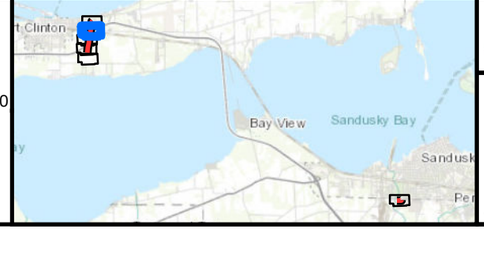

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Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 3
SHEET 2 of 6
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60640025

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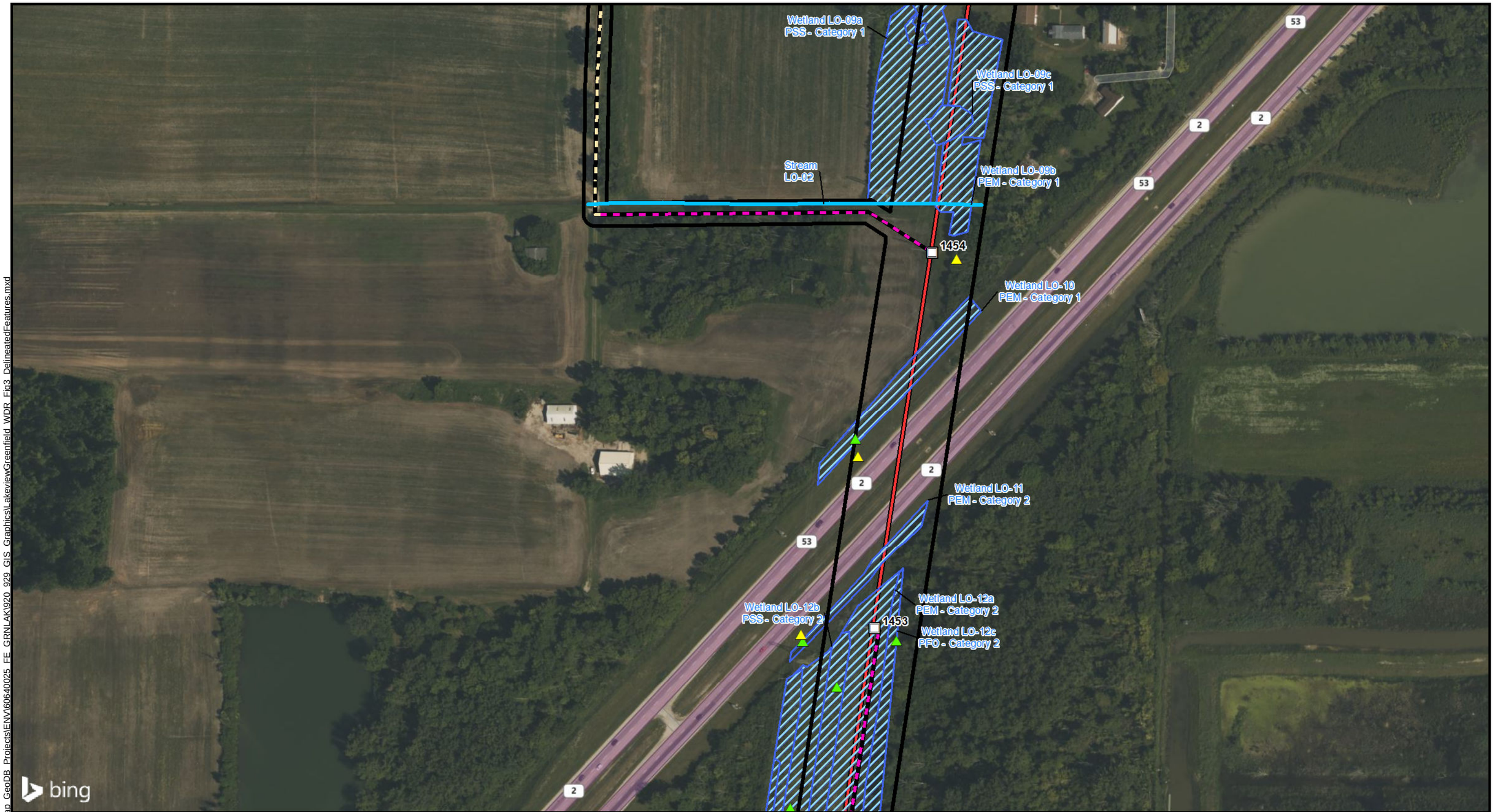
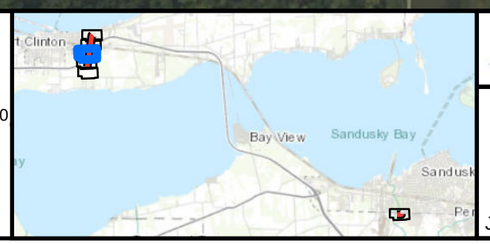


LEGEND

- Access Entrance
- Upland Data Point
- Wetland Data Point
- Existing Substation
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Stream (HHEI)
- Delineated Wetland

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, ESRI World Imagery (Clarity)



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Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 3
SHEET 3 of 6
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60640025

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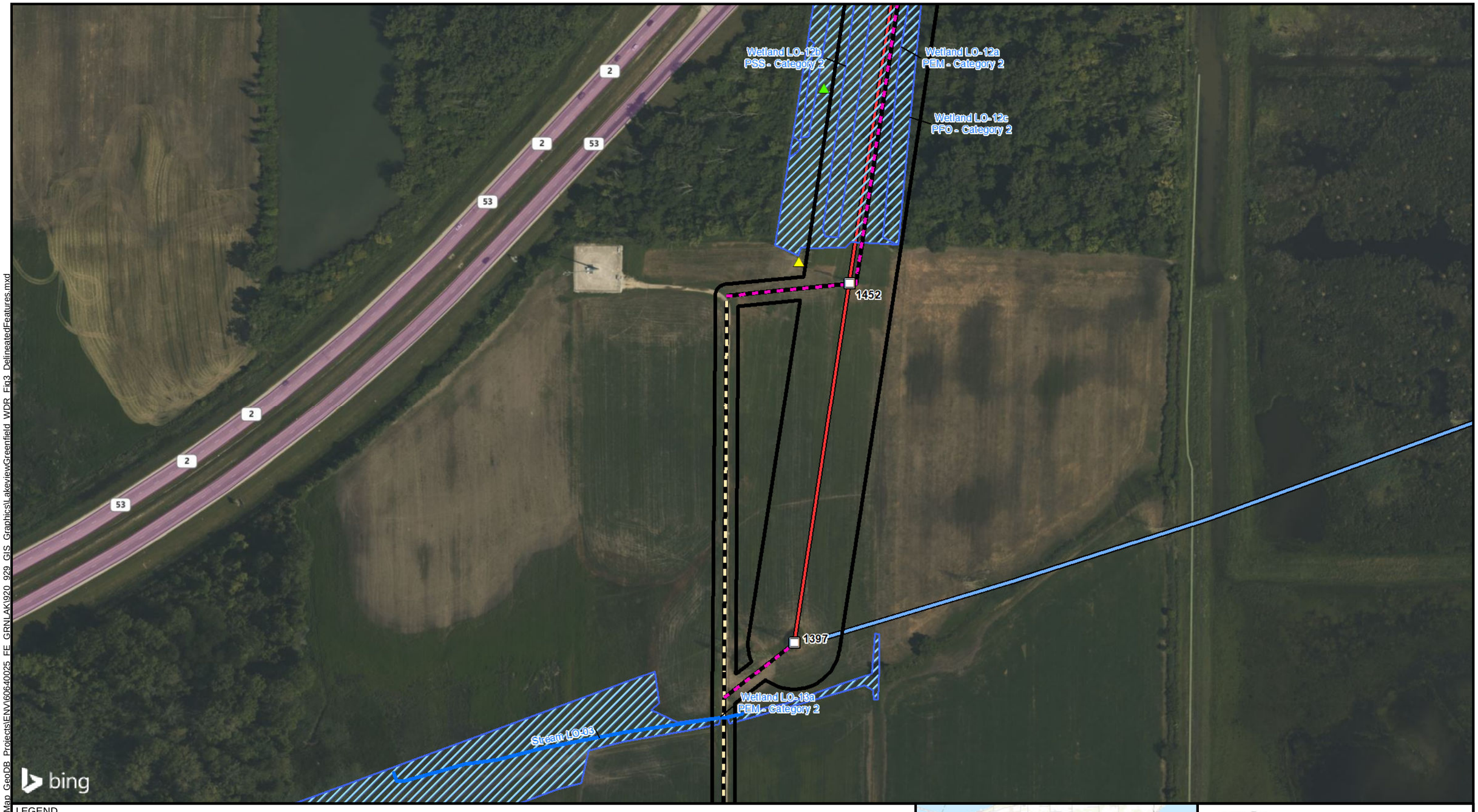

LEGEND

- Access Entrance
- Upland Data Point
- Wetland Data Point
- Existing Substation
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Stream (HHEI)
- Delineated Wetland

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, ESRI World Imagery (Clarity)

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 3
SHEET 4 of 6
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60640025

AECOM

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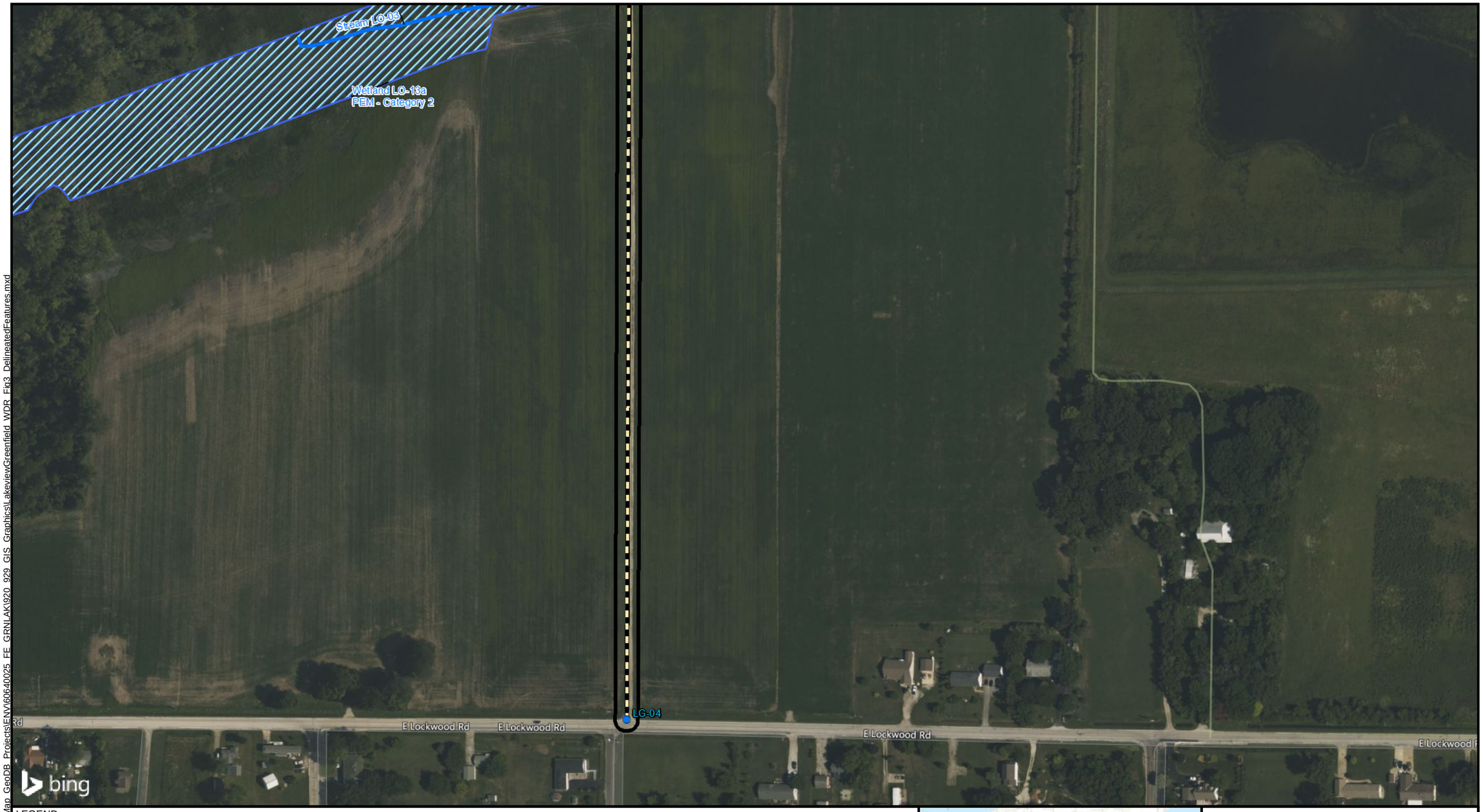


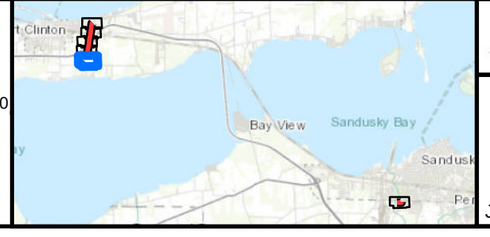
LEGEND

- Access Entrance
- Upland Data Point
- Wetland Data Point
- Existing Substation
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Delineated Stream (HHEI)
- Delineated Wetland

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, ESRI World Imagery (Clarity)



ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 3
SHEET 5 of 6
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60640025

AECOM

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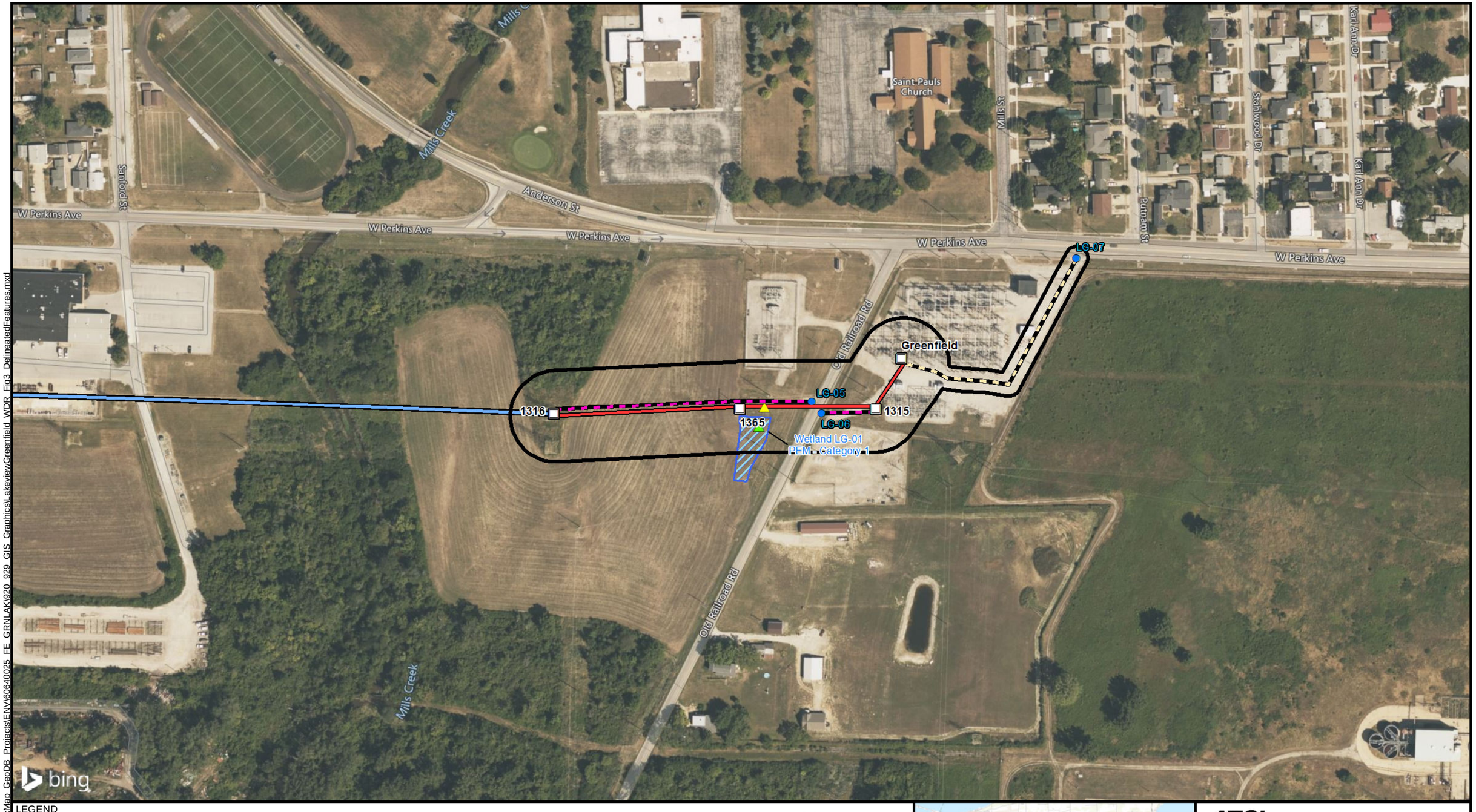

LEGEND

- Access Entrance
- Upland Data Point
- Wetland Data Point
- Existing Substation
- Existing Structures
- Proposed Rebuild of Lakeview-Greenfield 138kV Transmission Line
- Existing Gravel Access Road
- Proposed Temporary Access Road
- Delineated Stream (HHEI)
- Delineated Wetland

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, ESRI World Imagery (Clarity)

ATSI

Lakeview-Greenfield 138 kV Transmission Line Rebuild Project

FIGURE 3
SHEET 6 of 6
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60640025

AECOM

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APPENDIX A

U.S. ARMY CORPS OF ENGINEERS WETLAND AND UPLAND FORMS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138 kV Project **City/County:** Erie **Sampling Date:** 07-Oct-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LG-01**

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range: S.** **T.** 6N **R.** 23

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.432325 **Long.:** -82.729113 **Datum:** WGS84

Soil Map Unit Name: ToA; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** NA

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LG-01 (W-201007-MRK-001) is a PEM wetland located within an depression surrounded by agriculture. The depression is collecting surface runoff from the surrounding hay field. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Setaria pumila.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

NA

Remarks:

The source of hydrology is surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: W-MRK-201007-001 PEM

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Setaria pumila*	75	☑	FAC
2. *Echinochloa crus-galli*	50	☑	FAC
3. *Trifolium pratense*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	130	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	125	x 3 =	375
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	130 (A)		395 (B)

Prevalence Index = B/A = 3.038

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation is disturbed annually by agricultural practices that may include mowing and soil tilling. Vegetation has been recently mowed. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-201007-001 PEM

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 [1]	Loc²	Texture	Remarks
0-10	10YR	3/1	90	10YR	5/8	10	C	M,PL	Silty Clay Loam	5% oxidized rhizospheres
10-16	10YR	5/2	80	10YR	5/8	20	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☑ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138 kV Project **City/County:** Erie **Sampling Date:** 07-Oct-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** Wetland LG-01 UPL

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range:** S. T. 6N R. 23

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.432444 **Long.:** -82.729070 **Datum:** WGS84

Soil Map Unit Name: ToA; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** NA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland LG-01 (W-MRK-201007-001). Upland data was collected within the existing transmission line right-of-way, near an existing sub station in a maintained hayfield.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: W-MRK-201007-001 UPL

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Dactylis glomerata*	50	☑	FACU
2. *Phleum pratense*	50	☑	FACU
3. *Festuca pratensis*	40	☑	FACU
4. *Taraxacum officinale*	25	☐	FACU
5. *Trifolium pratense*	25	☐	FACU
6. *Echinochloa crus-galli*	10	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	200	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	190	x 4 =	760
UPL species	0	x 5 =	0
Column Totals:	200 (A)		790 (B)

Prevalence Index = B/A = 3.950

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-201007-001 UPL

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 [1]	Loc²	Texture	Remarks
0-16	10YR	3/2	100					Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-01**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.5 % / 0.3 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.512650 **Long.:** -82.914993 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-01 (W-200114-MRK-001 PEM). This PEM wetland is located within a depression adjacent to a perennial watercourse. The surrounding area is part of the watercourse floodplain within the existing transmission line right-of-way and urbanized landscape. Wetland hydrology is supported by seasonal flooding of the perennial stream (LO-01) and a perched water table. Soils are mixed with rock and debris from past construction. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phragmites australis.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ◉ No ○	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	7

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is seasonal flooding and a high water table.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-01

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Phragmites australis*	100	☑	FACW
2. *Phalaris arundinacea*	40	☑	FACW
3. *Solidago canadensis*	15	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	155	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	140	x 2 =	280	
FAC species	0	x 3 =	0	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	155	(A)	340	(B)

Prevalence Index = B/A = 2.194

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-01

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 [1]	Loc[2]	Texture	Remarks
0-18	10YR	4/1	90	10YR	4/6	10	C	M	Silty Clay Loam	30% rock and fill material

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil is mixed with rock, brick, and other debris from past construction. Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area located south of the existing substation was identified as meeting the federal definition of a wetland. The soil profile of this wetland habitat was identified as being significantly disturbed by previous construction activities due to presence of rock, brick, and other debris.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-02**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.5 % / 0.3 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.512136 **Long.:** -82.915062 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-02 (W-200114-MRK-002 PSS). This PSS wetland is located within a depression in the floodplain of the perennial stream, LO-01. Wetland LO-02 is separated from LO-03 and the perennial stream by a small grass travel lane within the existing ROW. Hydrology connection between these resources were observed as seasonal flooding. The surrounding area is relatively flat within the existing transmission line right-of-way and urbanized developments. Wetland hydrology is supported by seasonal flooding and a perched water table. Soils in the area are mixed with rock and other debris from past construction. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Cornus racemosa and Phalaris arundinacea.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):		
Water Table Present?	Yes ◉	No ○	Depth (inches):	7	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	7	**Wetland Hydrology Present?** Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is seasonal flooding and a high water table.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-02

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus racemosa*	30	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	30	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	60	☑	FACW
2. *Phragmites australis*	25	☑	FACW
3. *Epilobium coloratum*	10	☐	OBL
4. *Carex sp.*	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	95	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	10	x 1 =	10	
FACW species	85	x 2 =	170	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	125	(A)	270	(B)

Prevalence Index = B/A = 2.160

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Absolute cover of Carex sp is 30%. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-02

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 [1]	Loc[2]	Texture	Remarks
0-18	10YR	4/1	90	10YR	4/6	10	C	M	Silty Clay Loam	30% rock and fill material

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil is mixed with rock, brick, and other debris from past construction. Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area located south of the existing substation was identified as meeting the federal definition of a wetland. The soil profile of this wetland habitat was identified as being significantly disturbed by previous construction activities due to presence of rock, brick, and other debris.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-03**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.5 % / 0.3 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.511972 **Long.:** -82.915261 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-03 (W-200114-MRK-003 PEM). This PEM wetland is located within a depression that drains directly in the fringe wetland habitat of Wetland LO-03 located along the perennial watercourse (LO-01). The surrounding area is part of the watercourse floodplain within the existing transmission line right-of-way. Wetland hydrology is supported by seasonal flooding and a perched water table. Soils are mixed with rock and debris from past construction. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phalaris arundinacea.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	2
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is seasonal flooding and a high water table.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-03

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	60	☑	FACW
2. *Phragmites australis*	20	☐	FACW
3. *Scirpus atrovirens*	20	☐	OBL
4. *Juncus effusus*	10	☐	OBL
5. *Carex sp.*	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

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: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30	
FACW species	80	x 2 =	160	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	190	(B)

Prevalence Index = B/A = 1.727

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Absolute cover of Carex sp is 40%. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-03

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 [1]	Loc[2]	Texture	Remarks
0-18	10YR	4/1	90	10YR	4/6	10	C	M	Silty Clay	20% mixed rock and fill material

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil is mixed with rock, brick, and other debris from past construction. Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area located south of the existing substation was identified as meeting the federal definition of a wetland. The soil profile of this wetland habitat was identified as being significantly disturbed by previous construction activities due to presence of rock, brick, and other debris.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-01, 02, 03 UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 0.5 % / 0.3 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.512501 **Long.:** -82.915318 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland LO-01 (W-200114-MRK-001), Wetland LO-02 (W-200114-MRK-002), and Wetland LO-03 (W-200114-MRK-003). Upland is located in the existing transmission line right-of-way, surrounded by residential and commercial properties.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-01, 02, 03 UPL

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Dactylis glomerata*	80	☑	FACU
2. *Cirsium arvense*	25	☑	FACU
3. *Potentilla simplex*	25	☑	FACU
4. *Plantago major*	20	☐	FACU
5. *Daucus carota*	10	☐	UPL
6. *Rumex crispus*	5	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	165	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	5	x 3 =	15	
FACU species	150	x 4 =	600	
UPL species	10	x 5 =	50	
Column Totals:	165	(A)	665	(B)

Prevalence Index = B/A = 4.030

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-01, 02, 03 UPL

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 [1]	Loc[2]	Texture	Remarks
0-6	10YR	3/3	100					Silt Loam	25% rock and fill material
6-8	10YR	5/3	100					Sandy Loam	50% rock and fill material

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Shovel refusal at 8 inches due to rock and fill material. The soil profile was identified as being significantly disturbed by previous construction activities due to presence of rock, brick, and other debris.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-04**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.509865 **Long.:** -82.915919 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-04 (W-200114-MRK-004 PEM). This PEM wetland begins within a shallow swale, located along the mowed edge of existing right-of-way. Swale becomes deeper and more well defined at the center of existing right-of-way. Swale is collecting surface runoff from the surrounding area and drains to a perennial watercourse just outside of the current study area. LO-04 is hydrologically and directly connected to the fringe wetland area of LO-03 located outside of the survey area. The wetland and surrounding upland field is mowed during the dry season. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phalaris arundinacea and Eleocharis palustris.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	2
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is seasonal flooding and surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-04

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Dactylis glomerata*	40	☑	FACU
2. *Eleocharis palustris*	30	☑	OBL
3. *Phalaris arundinacea*	30	☑	FACW
4. *Trifolium repens*	10	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	30	x 1 =	30
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	110 (A)		290 (B)

Prevalence Index = B/A = 2.636

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation is regularly mowed during the dry season. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-04

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 [1]	Loc[2]	Texture	Remarks
0-16	2.5Y	4/1	95	2.5Y	4/4	5	C	M	Clay	

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil is mixed with rock, brick, and other debris from past construction. Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area located south of the existing substation was identified as meeting the federal definition of a wetland. The soil profile of this wetland habitat was identified as being significantly disturbed by previous construction activities due to the presence of rock, brick, and other debris.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-04 UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.509886 **Long.:** -82.915856 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland LO-04 (W-200114-MRK-004). Upland is located in the existing transmission line right-of-way, surrounded by residential and commercial properties. Right-of-way is mowed on a regular basis.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-04 UPL

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Poa pratensis*	50	☑	FACU
2. *Dactylis glomerata*	40	☑	FACU
3. *Trifolium repens*	20	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	110	x 4 =	440	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	440	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation is mowed on a regular basis within the right-of-way.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-04 UPL

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	3/2	60	10YR	4/4	40			Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The presence of hydric soils was identified due to naturally problematic circumstance of being within an active floodplain area. However, the area was not identified as meeting the criteria for a wetland due to the absence of hydrology and dominance of hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-05**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.509147 **Long.:** -82.915840 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-05 (W-200114-MRK-005 PEM). This PEM wetland is located within a shallow, localized depression, situated in a 100-year floodplain. Wetland is mowed along with the surrounding upland on a regular basis during the dry season. Depression is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	2
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is seasonal flooding and surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-05

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Eleocharis palustris*	50	☑	OBL
2. *Dactylis glomerata*	30	☑	FACU
3. *Phalaris arundinacea*	30	☑	FACW
4. *Trifolium repens*	10	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	120	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	50	x 1 =	50
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	120 (A)		270 (B)

Prevalence Index = B/A = 2.250

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation is mowed within the transmission right-of-way on a regular basis during the dry season. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-05

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 [1]	Loc[2]	Texture	Remarks
0-16	2.5Y	4/1	95	2.5Y	4/4	5	C	M	Clay	

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-06**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508642 **Long.:** -82.916060 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-06 (W-200114-MRK-006 PEM). This PEM wetland begins within the roadside ditch along East State Street and parallels the roadway. The swales also connects to a second swale along the adjacent railroad. The swales are collecting surface runoff and directing water to stormwter drains outside of the study area. The wetland boundary follows edge of swale and hydrophytic vegetation dominated by Phalaris arundinacea and Phragmites australis.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	2	
Water Table Present?	Yes ◉ No ○	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-06

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	90	☑	FACW
2. *Phragmites australis*	75	☑	FACW
3. *Eleocharis palustris*	20	☐	OBL
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	185	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	20	x 1 =	20
FACW species	165	x 2 =	330
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	185 (A)		350 (B)

Prevalence Index = B/A = 1.892

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-06

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	4/1	90	10YR	5/8	10	C	M,PL	Silty Clay Loam	5% oxidized rhizospheres

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-05 & LO-06 UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** none **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508782 **Long.:** -82.915877 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetlands LO-05 (W-200114-MRK-005) and LO-06 (W-200114-MRK-006). Upland is located in the existing transmission line right-of-way, surrounded by residential and commercial properties. Right-of-way is mowed on a regular basis.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-05 & LO-06 UPL

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Poa pratensis*	60	☑	FACU
2. *Dactylis glomerata*	30	☑	FACU
3. *Trifolium repens*	25	☐	FACU
4. *Plantago major*	20	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	135	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	135	x 4 =	540	
UPL species	0	x 5 =	0	
Column Totals:	135	(A)	540	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation is mowed on a regular basis within the right-of-way.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-05 & LO-06 UPL

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 [1]	Loc[2]	Texture	Remarks
0-14	10YR	3/1	100						Silt Loam	
14-18	10YR	4/2	90	10YR	5/4	10	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

The presence of hydric soils was identified due to naturally problematic circumstance of being within an active floodplain area. However, the area was not identified as meeting the criteria for a wetland due to the absence of hydrology and dominance of hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 15-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-07**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508123 **Long.:** -82.915952 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-07 (W-200115-MRK-001 PSS). This PSS wetland is located in a depression between an existing railroad right-of-way and a man-made berm. Surrounding area is part of a 100 year floodplain. A ditch along the side of the railroad is collecting hydrology and drains into this wetland with additional hydrologic input from seeps located along the toe-of-slope. The wetland continues outside of the survey area to the east and into a forested wetland. This portion of the forested wetland is directly connected to LO-09 wetland complex. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Cornus racemosa and Phalaris arundinacea.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	2
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff and toe-of-slope spring seeps.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-07

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus racemosa*	30	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	30	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	45	☑	FACW
2. *Phragmites australis*	30	☑	FACW
3. *Lythrum salicaria*	25	☑	OBL
4. *Carex scoparia*	20	☐	FACW
5. *Scirpus atrovirens*	20	☐	OBL
6. *Epilobium coloratum*	10	☐	OBL
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	150	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	55	x 1 =	55	
FACW species	95	x 2 =	190	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	180	(A)	335	(B)

Prevalence Index = B/A = 1.861

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-07

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	4/1	90	10YR	5/8	10	C	M,PL	Silty Clay Loam	5% oxidized rhizospheres

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 15-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-07 UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.507937 **Long.:** -82.916124 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point forWetland LO-07 (W-200115-MRK-001). Surrounding land use is existing transmission line and railroad right-of-way. Data point is located on top of a man-made berm located within the middle of the existing transmission line right of way between Wetlands LO-07 and LO-09.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-07 UPL

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Lonicera morrowii*	50	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	50	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Arctium lappa*	25	☑	UPL
2. *Apocynum cannabinum*	25	☑	FAC
3. *Solidago canadensis*	25	☑	FACU
4. *Glechoma hederacea*	25	☑	FACU
5. *Ambrosia artemisiifolia*	20	☐	FACU
6. *Dactylis glomerata*	10	☐	FACU
7. *Daucus carota*	10	☐	UPL
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	140	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	130	x 4 =	520
UPL species	35	x 5 =	175
Column Totals:	190 (A)		770 (B)

Prevalence Index = B/A = 4.053

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-07 UPL

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 [1]	Loc[2]	Texture	Remarks
0-12	10YR	3/1	100					Silt Loam	25% gravel

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Due to the absence of hydrology, hydrophytic vegetation, and hydric soils the area was identified as not meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-08**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508444 **Long.:** -82.918891 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-08 (W-200114-MRK-007 PSS). This PSS wetland begins within a swale that is parallel to the existing railroad and is open-ended to the west. Water drains to a culvert and flows under the existing driveway to another wetland located on the east side of the driveway. The wetland boundary follows edge of swale.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	4
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-08

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	20	☑	FAC
2. *Cornus amomum*	20	☑	FACW
3. *Sambucus nigra*	15	☑	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Impatiens capensis*	20	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	20	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		170 (B)

Prevalence Index = B/A = 2.267

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-08

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	4/2	85	10YR	5/4	15	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-09a**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508409 **Long.:** -82.918692 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** PEM1C

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-09a (W-200114-MRK-008 PSS). PSS section of a PEM/PSS/PUB wetland complex that begins within a swale parallel to the existing railroad right-of-way. The area is flat where water overflows the banks of a swale and into an agricultural field. Water drains to the east, and eventually into the existing transmission line right-of-way. Another section of PSS wetland is located within the existing right-of-way and this sample point is also representative of the portion within the existing right-of-way. This section of the wetland follows a depression that drains to a watercourse to the south. The wetland complex continues outside of the study area and is directly connected to Wetland LO-07 and Wetland LO-10. The wetland boundary follows edge of swale and hydrophytic vegetation dominated by Acer negundo and Cornus amomum.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	6
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-09a

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer negundo*	20	☑	FAC
2. *Cornus amomum*	20	☑	FACW
3. *Sambucus nigra*	15	☑	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Impatiens capensis*	20	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	20	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	55	x 2 =	110	
FAC species	20	x 3 =	60	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	75	(A)	170	(B)

Prevalence Index = B/A = 2.267

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-09a

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	4/2	85	10YR	5/4	15	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-09b**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508332 **Long.:** -82.918240 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** PEM1C

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

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-09b (W-200114-MRK-008 PEM). PEM section of a PEM/PSS/PUB wetland complex that begins within a swale parallel to the existing railroad right-of-way. The area is flat where water overflows the banks of a swale and into an agricultural field. Water drains to the east, and eventually into the existing transmission line right-of-way and this sample point is also representative of the portion within the existing right-of-way. Another section of PEM wetland is located within the existing right-of-way. This section of the wetland follows a depression that drains to a watercourse to the south. The wetland complex continues outside of the study area and is directly connected to Wetland LO-07 and Wetland LO-10. The wetland boundary follows edge of swale and hydrophytic vegetation dominated by Phalaris arundinacea and Setaria pumila.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	6
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff. Tilling of soil from agriculture has allowed water to overflow the existing swale and drain into the field.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-09b

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	60	☑	FACW
2. *Setaria pumila*	40	☑	FAC
3. *Phragmites australis*	20	☐	FACW
4. *Impatiens capensis*	20	☐	FACW
5. *Lysimachia nummularia*	10	☐	FACW
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	150	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	110	x 2 =	220
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		340 (B)

Prevalence Index = B/A = 2.267

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation is disturbed by agriculture. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-09b

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	4/2	85	10YR	5/4	15	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soils are slightly mixed due to agriculture. Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-09c**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.507219 **Long.:** -82.916225 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** PEM1C

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-09c (W-200114-MRK-008 PUB). The PUB sections of the PEM/PSS/PUB wetland complex are located within the existing transmission right-of-way and drain from north to southern direction. The sample taken within the northern PUB section is representative of conditions within the southern PUB section. The northern PUB portion is open-ended to the east and the southern PUB boundary was fully delineated. The PUBs generally drain towards the southern direction and eventually discharges into Stream LO-02. The wetland complex continues outside of the study area and is directly connected to Wetland LO-07 and Wetland LO-10.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	24	
Water Table Present?	Yes ◉	No ○	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is spring seeps, surface runoff, and seasonal flooding.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-09c

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	75	☑	FACW
2. *Phragmites australis*	75	☑	FACW
3. *Scirpus cyperinus*	20	☐	OBL
4. *Asclepias incarnata*	10	☐	OBL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	180	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	30	x 1 =	30
FACW species	150	x 2 =	300
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	180 (A)		330 (B)

Prevalence Index = B/A = 1.833

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation is primarily limited to the pond edge. See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-09c

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	4/1	85	10YR	5/6	15	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 14-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-08 & LO-09 UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.508282 **Long.:** -82.918492 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetlands LO-08 (W-200114-MRK-007) and LO-09 (W-200114-MRK-008). The sample point is located east of the private drive and directly north of the boundary of LO-09, located within a fallow field and adjacent to an agricultural field.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-08 & LO-09 UPL

Tree Stratum (Plot size: None)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Setaria pumila*	75	☑	FAC
2. *Poa pratensis*	50	☑	FACU
3. *Cirsium arvense*	25	☐	FACU
4. *Phytolacca americana*	10	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	160	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	75	x 3 =	225	
FACU species	85	x 4 =	340	
UPL species	0	x 5 =	0	
Column Totals:	160	(A)	565	(B)

Prevalence Index = B/A = 3.531

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-08 & LO-09 UPL

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	3/1	100					Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

The presence of hydric soils was identified due to naturally problematic circumstance of being within an active floodplain area. However, the area was not identified as meeting the criteria for a wetland due to the absence of hydrology and dominance of hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 16-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-10**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.504430 **Long.:** -82.916852 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-11 (W-200116-MRK-010 PEM). This PEM wetland is located on the north side of Highway 2 and that originates from Wetland LO-09 complex draining into the swale along the highway. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Typha angustifolia and Phalaris arundinacea.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	6
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Source of hydrology is surface runoff and seasonal flooding.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-10

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Typha angustifolia*	75	☑	OBL
2. *Phalaris arundinacea*	40	☑	FACW
3. *Epilobium coloratum*	10	☐	OBL
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	125	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	85	x 1 =	85
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		165 (B)

Prevalence Index = B/A = 1.320

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-10

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 [1]	Loc[2]	Texture	Remarks
0-6	2.5Y	5/1	90	10YR	5/8	10	C	M,PL	Silty Clay	5% oxidized rhizspheres
6-18	2.5Y	5/1	85	10YR	5/8	15	C	M	Silty Clay	

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 16-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-10 UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 3.0 % / 1.7 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.504329 **Long.:** -82.916831 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland LO-10 (W-200116-MRK-010). Surrounding land use is highway right-of-way and agriculture.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-10 UPL

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Setaria pumila*	75	☑	FAC
2. *Dactylis glomerata*	50	☑	FACU
3. *Festuca pratensis*	40	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	165	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	75	x 3 =	225	
FACU species	90	x 4 =	360	
UPL species	0	x 5 =	0	
Column Totals:	165	(A)	585	(B)

Prevalence Index = B/A = 3.545

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation is disturbed annually due to agricultural practices.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-10 UPL

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	3/1	100					Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Due to the absence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as not meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 16-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-11**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.503238 **Long.:** -82.917258 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-11 (W-200116-MRK-009 PEM). This PEM wetland is located along a swale that abuts Highway 2 and continues outside of the survey area to the east and west. Outside of the survey area, the wetland continues and is directly connected to Wetland LO-12 and LO-13 complexes. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phalaris arundinacea.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ○	Depth (inches):	3
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff and seasonal flooding.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-11

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	50	☑	FACW
2. *Typha angustifolia*	40	☑	OBL
3. *Eleocharis palustris*	10	☐	OBL
4. *Phragmites australis*	10	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	50	x 1 =	50
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		170 (B)

Prevalence Index = B/A = 1.545

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-11

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 [1]	Loc[2]	Texture	Remarks
0-6	2.5Y	4/1	90	10YR	5/8	10	C	M,PL	Silty Clay	5% oxidized rhizspheres
6-18	2.5Y	5/1	85	10YR	5/8	15	C	M	Silty Clay	

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 15-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-12a**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.502252 **Long.:** -82.917352 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-12a (W-200115-MRK-003 PEM). PEM section of a PEM/PSS/PFO wetland complex, located in a depression within the existing transmission line right-of-way. Wetland is open-ended to the east and west. Water is draining from the east across the existing right-of-way, and into the PFO wetland to the west. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phalaris arundanacea and Phragmites australis.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):		
Water Table Present?	Yes ◉ No ○	Depth (inches):	2	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	2	

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

NA

Remarks:

Source of hydrology is surface runoff and spring seeps.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-12a

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	90	☑	FACW
2. *Phragmites australis*	50	☑	FACW
3. *Microstegium vimineum*	25	☐	FAC
4. *Euthamia graminifolia*	20	☐	FAC
5. *Epilobium coloratum*	5	☐	OBL
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	190	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	x 1 =	5	
FACW species	140	x 2 =	280	
FAC species	45	x 3 =	135	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	190	(A)	420	(B)

Prevalence Index = B/A = 2.211

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-12a

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 [1]	Loc[2]	Texture	Remarks
0-16	2.5Y	3/1	90	10YR	4/6	10	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 15-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-12b**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.502966 **Long.:** -82.916991 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-12a (W-200115-MRK-003 PSS). PSS section of a PEM/PSS/PFO wetland complex, located in a depression within the existing transmission line right-of-way. PSS portion is made up of two separate sections of scrub/shrub that parallel the area between transmission lines in the right-of-way. Wetland is open-ended to the east and west. Towards the west, the wetland continues along the edge of Highway 2 and eventually connects directly with Wetland LO-13. Towards the east, the wetland continues through fallow fields and connects directly to a man-made pond (abandoned query). Water is draining from the east across the existing right-of-way, and into the PFO wetland to the west. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Cornus racemosa and Cornus amomum.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ◉ No ○	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	2

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

Source of hydrology is surface runoff and spring seeps.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-12b

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus racemosa*	20	☑	FAC
2. *Cornus amomum*	20	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	90	☑	FACW
2. *Phragmites australis*	50	☑	FACW
3. *Microstegium vimineum*	25	☐	FAC
4. *Euthamia graminifolia*	20	☐	FAC
5. *Epilobium coloratum*	5	☐	OBL
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	190	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	x 1 =	5	
FACW species	160	x 2 =	320	
FAC species	65	x 3 =	195	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	230	(A)	520	(B)

Prevalence Index = B/A = 2.261

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-12b

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 [1]	Loc[2]	Texture	Remarks
0-16	2.5Y	3/1	90	10YR	4/6	10	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 16-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** Wetland LO-11 and LO-12 UPL

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 3.0 % / 1.7 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.503278 **Long.:** -82.917274 **Datum:** NAD83

Soil Map Unit Name: To; Toledo silty clay, 0 to 1 percent slopes **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland LO-11 (W-200116-MRK-009). Surrounding land use is highway right-of-way and agriculture.
Upland data point for Wetland LO-12

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-11 and LO-12 UPL

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Setaria pumila*	75	☑	FAC
2. *Dactylis glomerata*	50	☑	FACU
3. *Festuca pratensis*	40	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	165	= Total Cover	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	165 (A)		585 (B)

Prevalence Index = B/A = 3.545

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation is disturbed annually due to agricultural practices.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-11 and LO-12 UPL

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 [1]	Loc[2]	Texture	Remarks
0-16	10YR	5/3	95	10YR	5/6	5	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Due to the absence of hydrology, hydrophytic vegetation, and hydric soils, the area was identified as not meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 15-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-13a**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.494527 **Long.:** -82.933613 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** PFO1/EM1C

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-13a (W-200115-MRK-002 PEM). PEM section of a PEM/PFO wetland complex located in a depression within the floodplain of a perennial watercourses Stream LO-03 and LO-04. Hydrology is draining towards these streams. Additionally, the boundary of the wetland continues outside of the survey to the north and south of the existing transmission line right-of-way. Portions outside of the row contain PFO wetland habitats. The wetland also receives additional input from a connective wetland swale located along Highway 2 that connects this complex to Wetland LO-12 and Wetland LO-11. The overall wetland boundary follows the edge of depression and hydrophytic vegetation dominated by Phragmites australis and Phalaris arundinacea.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches): 6	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 6	

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

NA

Remarks:

Source of hydrology is surface runoff, seasonal flooding, and a high water table.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-13a

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: N)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Phragmites australis*	100	☑	FACW
2. *Phalaris arundinacea*	75	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	175	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	175	x 2 =	350	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	175	(A)	350	(B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-13a

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 [1]	Loc[2]	Texture	Remarks
0-16	2.5Y	3/1	85	10YR	4/6	15	C	M,PL	Silty Clay	5% oxidized rhizospheres

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydric soils the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 15-Jan-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland LO-13a/b UPL**

Investigator(s): M.R.Kline, L.Bilski **Section, Township, Range: S.** **T.** 6N **R.** 17

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR L **Lat.:** 41.498388 **Long.:** -82.918379 **Datum:** NAD83

Soil Map Unit Name: Bo; Bono silty clay **NWI classification:** N/A

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

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland (W-200115-MRK-002). Surroundng land use is existing transmission line right-of-way and agriculture. Data point is located in an agricultural field used for row crops.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-13a/b UPL

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Glycine max*	100	☑	UPL
2. *Trifolium repens*	50	☑	FACU
3. *Glechoma hederacea*	25	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	175	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	75	x 4 =	300	
UPL species	100	x 5 =	500	
Column Totals:	175	(A)	800	(B)

Prevalence Index = B/A = 4.571

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Soybean crop has been harvested from last season.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-13a/b UPL

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 [1]	Loc[2]	Texture	Remarks
0-16	2.5Y	3/1	90	10YR	5/6	10	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Tilled agricultural field was likely part of the adjacent wetland complex in the past. Due to the absence of hydrology, hydrophytic vegetation, and hydric soils the area was identified as not meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 17-Nov-20

Applicant/Owner: First Energy **State:** OH **Sampling Point:** **Wetland LO-40**

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range: S.** **T.** 6N **R.** 17E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.514439 **Long.:** -82.915737 **Datum:** WGS84

Soil Map Unit Name: Ud: Udorthents, gently sloping **NWI classification:** NA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland LO-40 (W-201117-MRK-001). This PEM wetland is located in a small depression along a perennial watercourse. The primary source of wetland hydrology is from surface runoff from the surrounding area collecting in a slight depression. The vegetation is dominated by Epilobium coloratum, Typha angustifolia, and Leersia oryzoides.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-40

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: none)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Epilobium coloratum*	50	☑	OBL
2. *Typha angustifolia*	40	☑	OBL
3. *Leersia oryzoides*	50	☑	OBL
4. *Cyperus esculentus*	10	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	150	**= Total Cover**	
Woody Vine Stratum (Plot size: none)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	140	x 1 =	140	
FACW species	10	x 2 =	20	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	150	(A)	160	(B)

Prevalence Index = B/A = 1.067

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D of the Wetland Delineation and Stream Assessment Report for representative photographs of the habitat and soil profile.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-40

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 [1]	Loc[2]	Texture	Remarks
0-14	10YR	3/1	85	10YR	4/2	15	C	M	Silt Loam	25% mixed rock

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Due to the presence of hydrology, hydrophytic vegetation, and hydri soils, the area was identified as meeting the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Lakeview-Greenfield 138kV Transmission Line **City/County:** Ottawa **Sampling Date:** 17-Nov-20

Applicant/Owner: First Energy **State:** OH **Sampling Point:** **Wetland LO-40 UPL**

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range: S.** **T.** 6N **R.** 17E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.514478 **Long.:** -82.9156773 **Datum:** WGS84

Soil Map Unit Name: Ud: Udorthents, gently sloping **NWI classification:** NA

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland LO-40 (W-201117-MRK-001). Surrounding land use is commercial property. The upland vegetation is dominated by Festuca pratensis, Trifolium repens, and Dactylis glomerata.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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 ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland LO-40 UPL

Tree Stratum (Plot size: None)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: none)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Festuca pratensis*	50	☑	FACU
2. *Trifolium repens*	40	☑	FACU
3. *Dactylis glomerata*	25	☑	FACU
4. *Plantago major*	10	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	125	**= Total Cover**	
Woody Vine Stratum (Plot size: none)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	125 (A)		500 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

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

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

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 (1m) tall..

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: Wetland LO-40 UPL

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 [1]	Loc[2]	Texture	Remarks
0-8	10YR	3/2	100					Silt Loam	50% mixed rock

[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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Rock refusal at 8 inches. Due to the absence of hydrology, hydrophytic vegetation, and hydri soils, the area was identified as not meeting the federal definition of a wetland.

APPENDIX B

OEPA WETLAND 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 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:	**M.R.Kline, L.H.Jacks**
Date:	**10/7/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	**matthew.kline@aecom.com**
Name of Wetland:	**LG-01**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depressed**

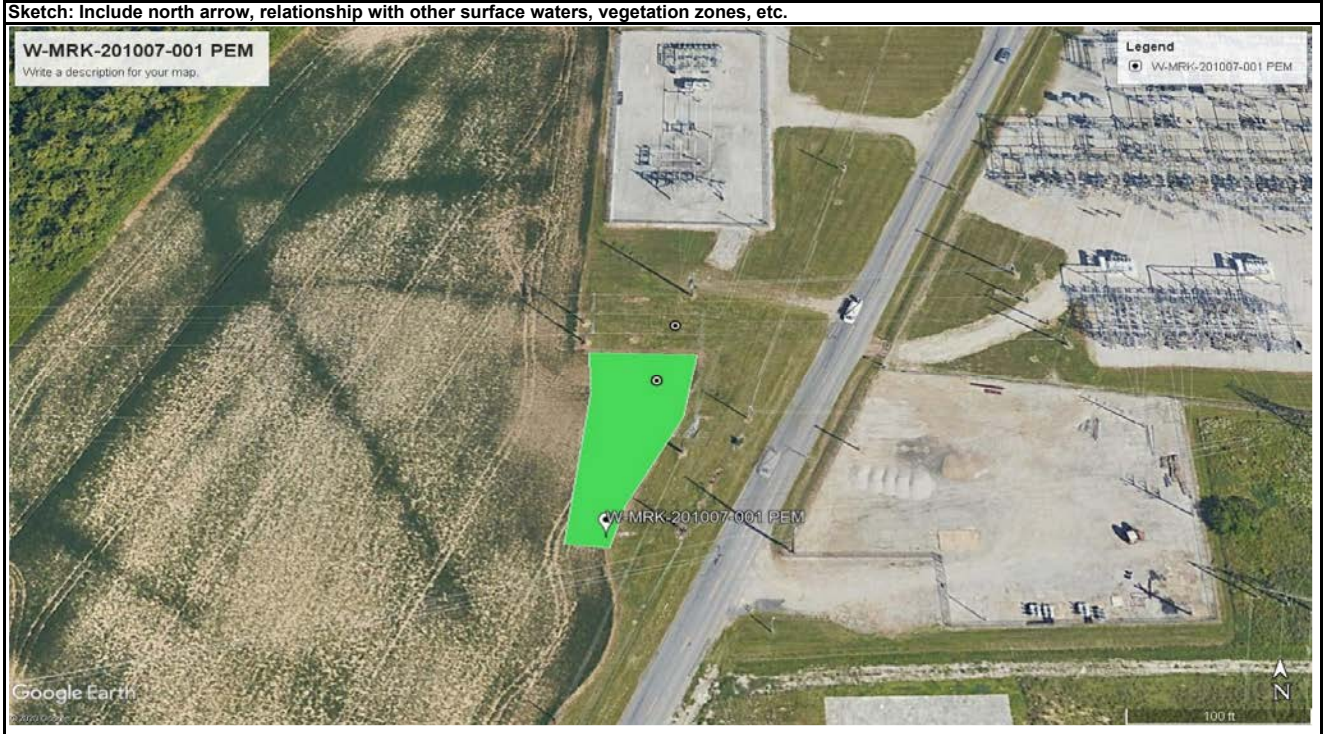
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

Lat/Long or UTM Coordinate:	**41.432325**
USGS Quad Name:	**-82.729113**
County:	**Erie**
Township:	**Perkins**
Section and Subsection:	**6N, 23W**
Hydrologic Unit Code:	**Mills Creek - HUC 12 (041000110103)**
Site Visit:	**10/7/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LG-01		
Wetland Size (delineated acres):	0.16	Wetland Size (Estimated total acres):	0.16

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



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located within an isolated depression surrounded by agriculture. The depression is collecting surface runoff from the surrounding hay field. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Setaria pumila.

Final score:	14	Category:	1

Wetland ID:	LG-01

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LG-01

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

Wetland ID:	LG-01

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

Wetland ID:	LG-01

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LG-01

Site:	Lakeview-Greenfield 138 kV	Rater(s):	M.R.Kline, L.H.Jacks	Date:	10/7/2020

Field ID:

W-MRK-201007-001 PEM

Delineated acres:	0.16
Total acres:	0.16

Metric 1. Wetland Area (size).

1.0 (max 6 pts) | 1.0 (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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1.0 (max 14 pts.) | 2.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

8.0 (max 30 pts.) | 10.0 (subtotal)

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

- [ ] High pH groundwater (5)
- [x] 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)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] 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
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

3.0 (max 20 pts.) | 13.0 (subtotal)

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] 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)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

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

13.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LG-01

Site:	Lakeview-Greenfield 138 kV	Rater(s):	M.R.Kline, L.H.Jacks	Date:	10/7/2020

Field ID:
W-MRK-201007-001 PEM

13.0
subtotal this page

0.0 max 10 pts. **13.0** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1.0 max 20pts. **14.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

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

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

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

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

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

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

14.0 **TOTAL (Max 100 pts)**
1 **Category**

Wetland ID:	LG-01

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	1		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	8		
	Metric 4. Habitat	3		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	14		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LG-01

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.

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 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.

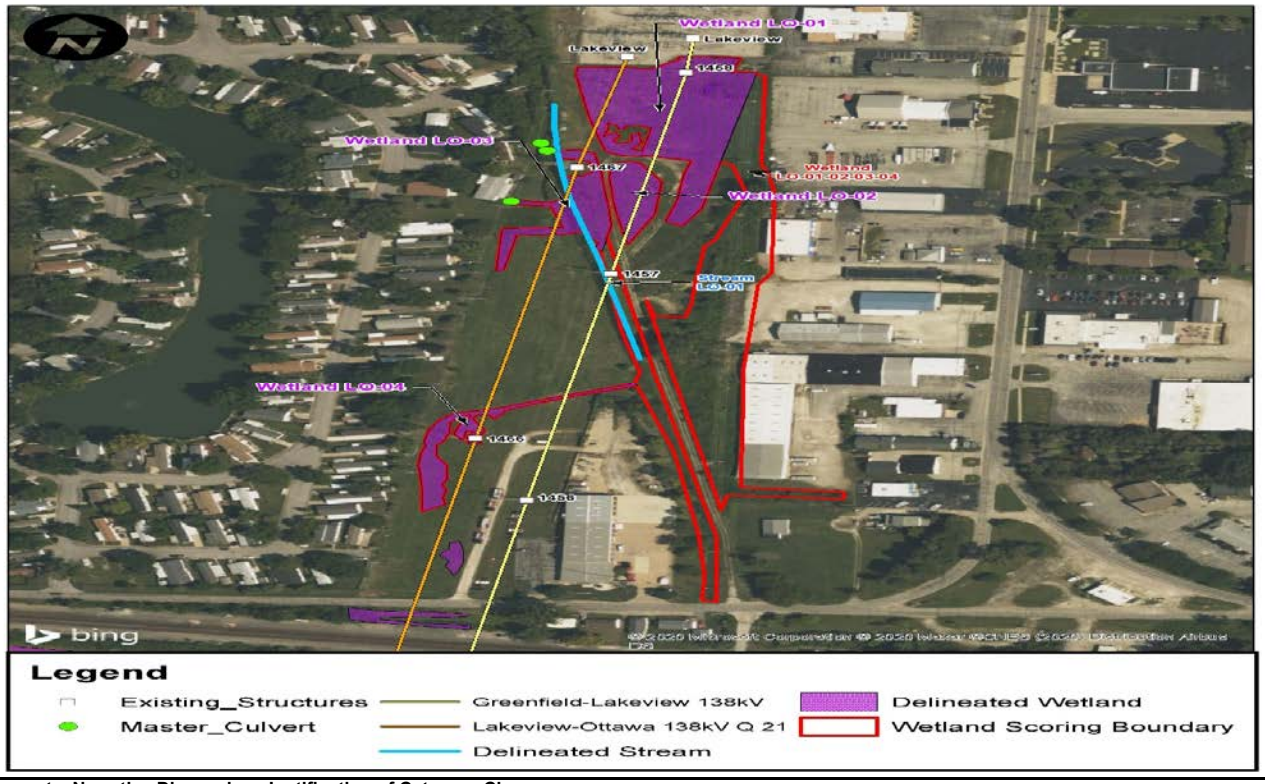
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual 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:	**M.R.Kline, L.Bilski**
Date:	**1/14/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-01, LO-02, LO-03, and LO-04**
Vegetation Communit(ies):	**PEM and PSS**
HGM Class(es):	**Depressed**
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.	
Lat/Long or UTM Coordinate:	**41.512485, -82.914883**
USGS Quad Name:	**Port Clinton**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Lacarpe Creek-Frontal Lake Erie (041000100503)**
Site Visit:	**1/14/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-01, LO-02, LO-03, and LO-04		
Wetland Size (delineated acres):	2.32	Wetland Size (Estimated total acres):	4.82

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



Comments, Narrative Discussion, Justification of Category Changes:

Wetland LO-01 (PEM), LO-02 (PSS), LO-03 (PEM), and LO-04 (PEM) are a single wetland complex that is adjacent and/or abutting a perennial watercourse. The wetland complex is located in a depressional floodplain area that has periodic flooding and presence of a perched water table. The boundary of the wetland continues outside of the survey area and the four segments of this wetland complex are directly connected to each other. All wetlands are situated within an existing overhead electric utility ROW and have recent disturbances from mowing and/or runoff from the surrounding urban areas.

Final score:	24	Category:	1

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

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

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

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

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14/2020

Field ID:

W-200114-MRK-001, W-200114-MRK-002, W-200114-MRK-003, W-200114-MRK-004

Delineated acres:	2.32
Total acres:	4.82

Metric 1. Wetland Area (size).

3.0 (max 6 pts) | 3.0 (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)
- [x] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1.0 (max 14 pts.) | 4.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

16.0 (max 30 pts.) | 20.0 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7.0 (max 20 pts.) | 27.0 (subtotal)

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

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

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] 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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

27.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14/2020

Field ID:

W-200114-MRK-001, W-200114-MRK-002, W-200114-MRK-003, W-200114-MRK-004

27.0
subtotal this page

0.0 | **27.0** — **Metric 5. Special Wetlands.**

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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-3.0 | **24.0** — **Metric 6. Plant communities, interspersion, microtopography.**

max 20pts. | subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
0	Shrub
	Forest
	Mudflats
	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 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

24.0	**TOTAL (Max 100 pts)**
1	**Category**

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

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	3		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	16		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	-3		
	TOTAL SCORE	24		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-01, LO-02, LO-03, and LO-04

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.

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 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:	**M.R.Kline, L.H.Jacks**
Date:	**1/14/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-05**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depressed**

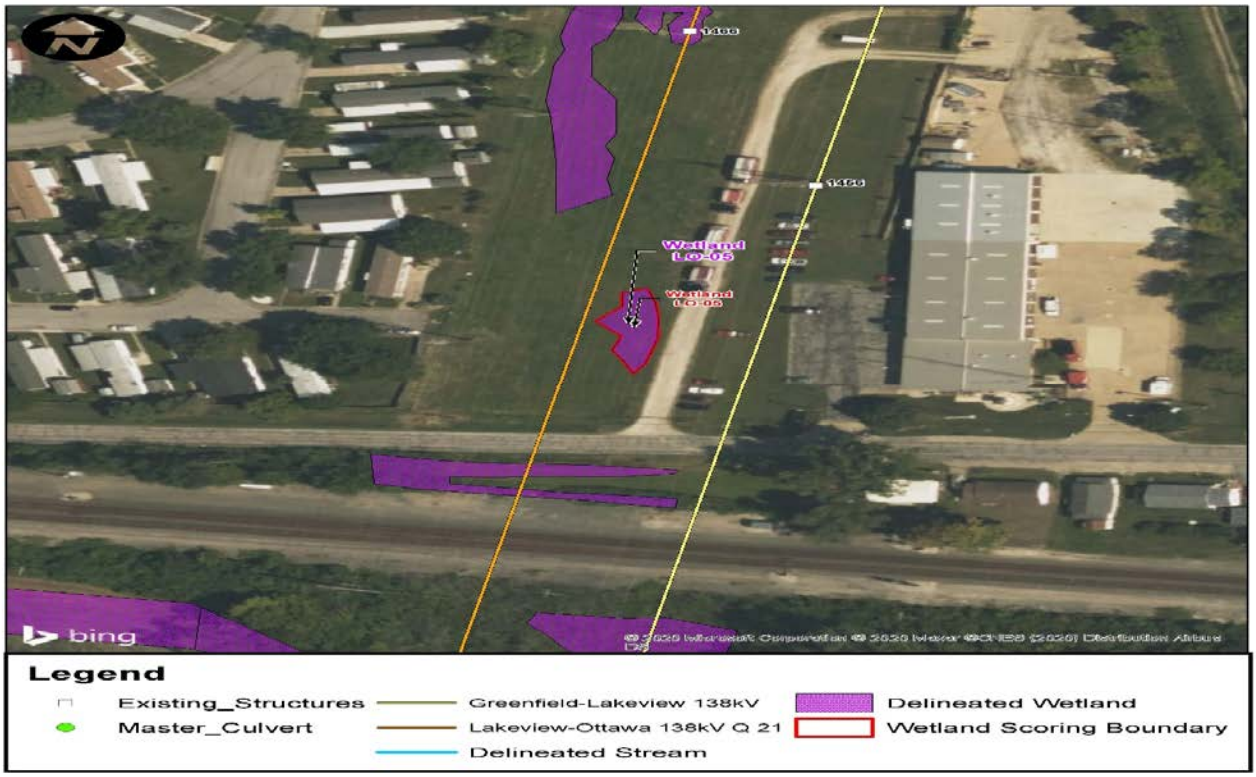
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

Lat/Long or UTM Coordinate:	**41.509124, -82.915833**
USGS Quad Name:	**Port Clinton**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Lacarpe Creek-Frontal Lake Erie (041000100503)**
Site Visit:	**1/14/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-05		
Wetland Size (delineated acres):	0.04	Wetland Size (Estimated total acres):	0.04

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



Comments, Narrative Discussion, Justification of Category Changes:

Wetland LO-05 (PEM) is located in a shallow isolated depression that is frequently mowed during the drier seasons. The depression collects surface water runoff from the surrounding areas and is situated within a 100-year floodplain.

Final score:	14	Category:	1

Wetland ID:	LO-05

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LO-05

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

Wetland ID:	LO-05

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

Wetland ID:	LO-05

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-05

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.H.Jacks	Date:	1/14/2020

Field ID:

W-200114-MRK-005 PEM

Delineated acres:	0.04
Total acres:	0.04

Metric 1. Wetland Area (size).

0.0 (subtotal) / 0.0 (max 6 pts)

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.

2.0 (subtotal) / 2.0 (max 14 pts.)

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

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

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

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

Metric 3. Hydrology.

8.0 (subtotal) / 10.0 (max 30 pts.)

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.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

6.0 (subtotal) / 16.0 (max 20 pts.)

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

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

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

16.0 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-05

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.H.Jacks	Date:	1/14/2020

Field ID:

W-200114-MRK-005 PEM

16.0
subtotal this page

0.0 / **16.0** **Metric 5. Special Wetlands.**

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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-2.0 / **14.0** **Metric 6. Plant communities, interspersion, microtopography.**

max 20pts. 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)
	Low (1)
x	None (0)

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

14.0 **TOTAL (Max 100 pts)**

1 **Category**

Wetland ID:	LO-05

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	2		
	Metric 3. Hydrology	8		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	-2		
	TOTAL SCORE	14		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-05

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.

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 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:	**M.R.Kline, L.Bilski**
Date:	**1/14/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-06**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depressed**

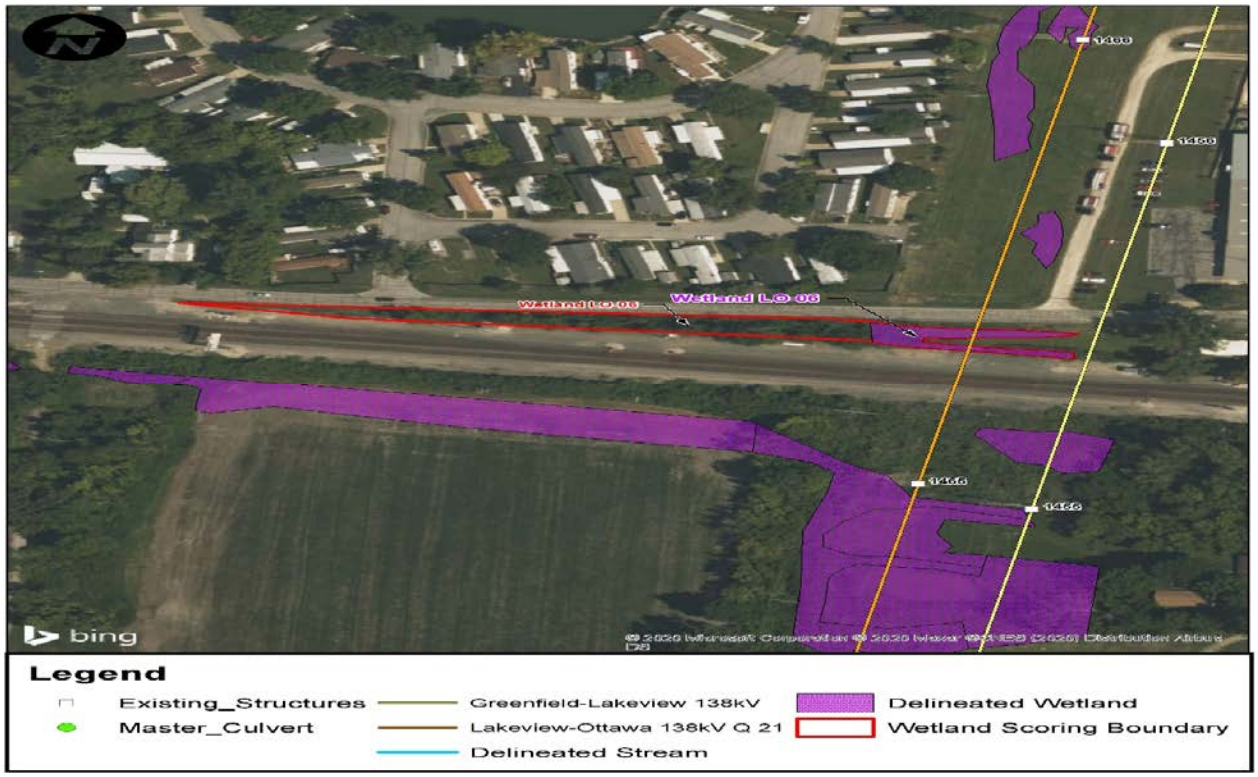
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

Lat/Long or UTM Coordinate:	**41.508617, -82.916227**
USGS Quad Name:	**Port Clinton**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Lacarpe Creek-Frontal Lake Erie (041000100503)**
Site Visit:	**1/14/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-06		
Wetland Size (delineated acres):	0.10	Wetland Size (Estimated total acres):	0.41

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



Comments, Narrative Discussion, Justification of Category Changes:

Wetland LO-06 (PEM) begins within the roadside ditch along East State Street and parallels the roadway. The wetland swales also connect to a second swale along the adjacent railroad. The swales are collecting surface runoff and directing water to stormwater drains outside of the study area. The wetland boundary follows edge of swale and hydrophytic vegetation dominated by Phalaris arundinacea and Phragmites australis.

Final score:	14	Category:	1

Wetland ID:	LO-06

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LO-06

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

Wetland ID:	LO-06

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

Wetland ID:	LO-06

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-06

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14/2020

Field ID:

W-200114-MRK-006 PEM

Delineated acres:	0.10
Total acres:	0.41

Metric 1. Wetland Area (size).

2.0 (max 6 pts) | 2.0 (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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1.0 (max 14 pts.) | 3.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

8.0 (max 30 pts.) | 11.0 (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.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

6.0 (max 20 pts.) | 17.0 (subtotal)

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

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

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

17.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-06

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14/2020

Field ID:

W-200114-MRK-006 PEM

17.0
subtotal this page

0.0 **17.0** **Metric 5. Special Wetlands.**

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 Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-3.0 **14.0** **Metric 6. Plant communities, interspersion, microtopography.**

max 20pts. 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 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

14.0 **TOTAL (Max 100 pts)**

1 **Category**

Wetland ID:	LO-06

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	2		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	8		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	-3		
	TOTAL SCORE	14		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-06

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.

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 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

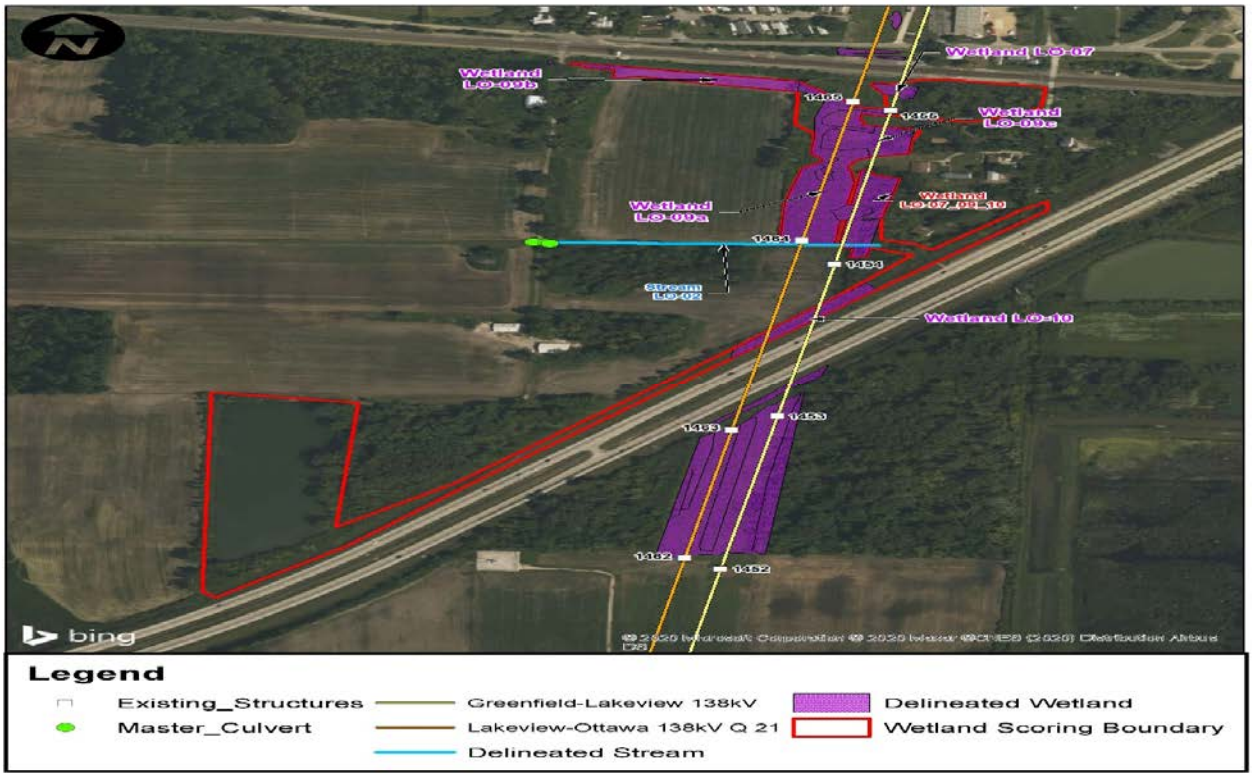
Background Information	
Name:	**M.R.Kline, L.Bilski**
Date:	**1/14 thru 1/16/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-07, LO-09a, LO-09b, LO-09c, LO-10**
Vegetation Communit(ies):	**PEM, PSS, and PUB**
HGM Class(es):	**Depressed**
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

Lat/Long or UTM Coordinate:	**41.507346 , -82.916243**
USGS Quad Name:	**Port Clinton**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Town of Gypsum-Frontal Sandusky Bay (041000111405)**
Site Visit:	**1/14 thru 1/16/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-07, LO-09a, LO-09b, LO-09c, LO-10		
Wetland Size (delineated acres):	4.69	Wetland Size (Estimated total acres):	17.77

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



Comments, Narrative Discussion, Justification of Category Changes:

Wetland LO-07 (PSS), LO-09a/b/c (PSS/PEM/PUB), and LO-10 (PEM) are composed of a single wetland complex that is hydrologycially and directly connected. The PSS portion of LO-07 is located along a depressional area along the edge of an exisitng railroad ROW that drains towards the north and into a ditch along the railroad. LO-09a/b/c drains is directly cononected to LO-07 located along the western side of the existing electric ROW and survey area. LO-09-a/b/c was idnetified along the edge of an agricultural field and hydrology drains towards the east. Towards the southern end of the LO-09a/b/c complex a direct conenction to LO-10 (PEM) was observed. The wetland LO-09a/b/c drains directly into LO-10, which is located along the edge of the agricutlural field and berm of highway.

Final score:	29.5	Category:	1

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

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

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

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

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14 thru 1/16/2020

Field ID:

W-200115-MRK-001, W-200114-MRK-008, W-200116-MRK-010

Delineated acres:	4.69
Total acres:	17.77

Metric 1. Wetland Area (size).

4.0 / 4.0 (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)
- [x] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3.0 / 7.0 (max 14 pts. / subtotal)

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

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

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

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

Metric 3. Hydrology.

14.5 / 21.5 (max 30 pts. / subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >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)
- [x] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7.0 / 28.5 (max 20 pts. / subtotal)

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

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

Check all disturbances observed

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

28.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14 thru 1/16/2020

Field ID:

W-200115-MRK-001, W-200114-MRK-008, W-200116-MRK-010

28.5
subtotal this page

0.0 max 10 pts. | **28.5** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1.0 max 20pts. | **29.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

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

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

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer 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.

1	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

29.5 TOTAL (Max 100 pts)

1 Category

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

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	4		
	Metric 2. Buffers and surrounding land use	3		
	Metric 3. Hydrology	14.5		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	29.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-07, LO-09a, LO-09b, LO-09c, LO-10

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.

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 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

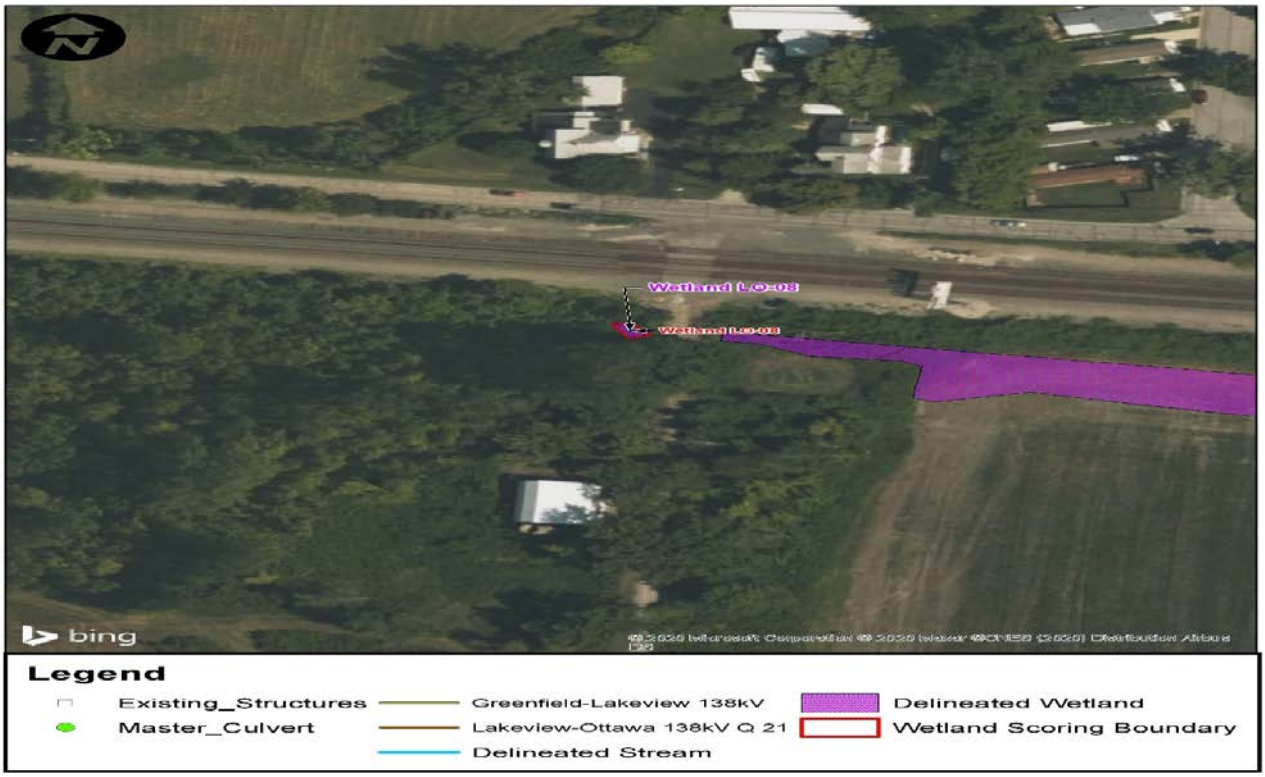
Background Information	
Name:	**M.R.Kline, L.Bilski**
Date:	**1/14/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-08**
Vegetation Communit(ies):	**PSS**
HGM Class(es):	**Depressed**
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

Lat/Long or UTM Coordinate:	**41.508412 , -82.918907**
USGS Quad Name:	**Port Clinton**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Town of Gypsum-Frontal Sandusky Bay (041000111405)**
Site Visit:	**1/14/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-08		
Wetland Size (delineated acres):	<0.01	Wetland Size (Estimated total acres):	<0.01

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



Comments, Narrative Discussion, Justification of Category Changes:

Wetland LO-08 (PSS) is a small wetland that originates within a swale that is parallel to a existing railroad grad and open-ended to the west. The hydrology is sourced from the swale collecting runoff within a swale along the edge of the railroad. The eastern boundary of the wetland end at the boundary of the existing gravel private drive.

Final score:	21	Category:	1

Wetland ID:	LO-08

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LO-08

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

Wetland ID:	LO-08

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

Wetland ID:	LO-08

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-08

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14/2020

Field ID:

W-200114-MRK-007 PSS

Delineated acres:	<0.01
Total acres:	<0.01

Metric 1. Wetland Area (size).

0.0 / 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.

3.0 / 3.0 (max 14 pts. / subtotal)

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

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

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

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

Metric 3. Hydrology.

8.0 / 11.0 (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.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7.0 / 18.0 (max 20 pts. / subtotal)

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

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

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] 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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

18.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-08

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/14/2020

Field ID:

W-200114-MRK-007 PSS

18.0
subtotal this page

0.0 | **18.0** **Metric 5. Special Wetlands.**

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 Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 5 Qualitative Rating (-10)

3.0 | **21.0** **Metric 6. Plant communities, interspersion, microtopography.**

max 20pts. subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [1] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] 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 Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [x] 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

21.0 **TOTAL (Max 100 pts)**

1 **Category**

Wetland ID:	LO-08

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	3		
	Metric 3. Hydrology	8		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	3		
	TOTAL SCORE	21		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-08

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.

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 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.

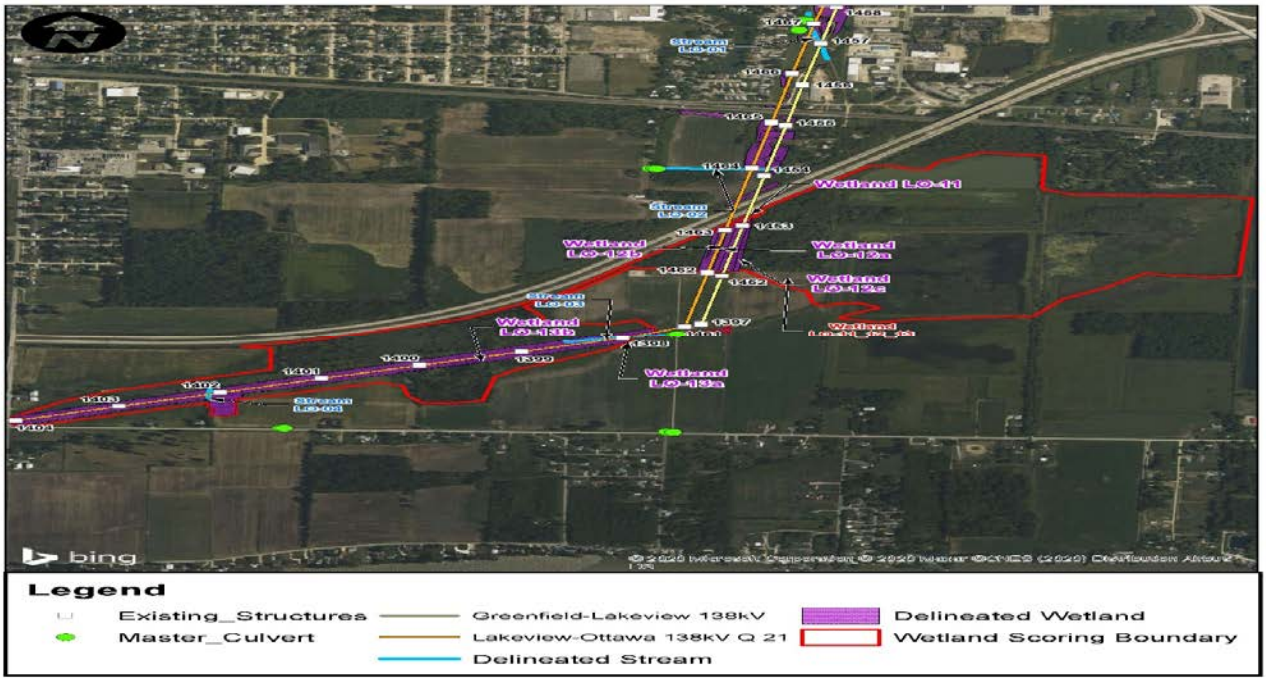
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual 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:	**M.R.Kline, L.Bilski**
Date:	**1/15/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-11, LO-12, and LO-13**
Vegetation Communit(ies):	**PEM/PSS/PFO**
HGM Class(es):	**Depressed**
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.	
Lat/Long or UTM Coordinate:	**41.502379, -82.917017**
USGS Quad Name:	**Port Clinton and Vickery**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Town of Gypsum-Frontal Sandusky Bay (041000111405)**
Site Visit:	**1/15/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-11, LO-12, and LO-13		
Wetland Size (delineated acres):	21.23	Wetland Size (Estimated total acres):	211.00

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



Comments, Narrative Discussion, Justification of Category Changes:

Wetland LO-11, LO-12, and LO-13 are a single wetland complex connected by a swale/depression along Highway 2. The Wetland LO-11 represents the PEM conditions of the connective swale within the survey area that continues to the east and west that provides the direct connection to both LO-12 and LO-13. The Wetland LO-12 is composed of PEM. PSS, and PFO wetland habitats situated on the south side of Highway 2 and directly north of an active agricultural field. The Wetland LO-13 is situated within an agricultural field and open ends to the north and south with a stream that runs through the wetland complex. The general drainage of this system is from the east to the west where it discharges into a large man-made pond. This wetland complex was not identified as being directly connected to Wetland LO-14 due to difference in hydrologic sources and quantity/volume of hydrology. For instance, the hydrologic input is for LO-11, LO-12, and LO-13 is directly contributed by a riverine complex. Whereas, LO-14 (located east Fulton Street) is directly influenced by Sandusky Bay.

Final score:	37.5	Category:	2

Wetland ID:	LO-11, LO-12, and LO-13

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetlandbeing 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.

Wetland ID:	LO-11, LO-12, and LO-13

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

Wetland ID:	LO-11, LO-12, and LO-13

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

Wetland ID:	LO-11, LO-12, and LO-13

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-11, LO-12, and LO-13

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/15/2020

Field ID:

W-200115-MRK-002-003, W-200115-MRK-002, W-200116-MRK-009

Delineated acres:	21.23
Total acres:	211.00

Metric 1. Wetland Area (size).

6.0 (max 6 pts) | 6.0 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

4.0 (max 14 pts.) | 10.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

16.5 (max 30 pts.) | 26.5 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >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)
- [x] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8.0 (max 20 pts.) | 34.5 (subtotal)

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

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

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

34.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-11, LO-12, and LO-13

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.Bilski	Date:	1/15/2020

Field ID:

W-200115-MRK-002-003, W-200115-MRK-002, W-200116-MRK-009

34.5
subtotal this page

0.0 max 10 pts. | **34.5** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3.0 max 20pts. | **37.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

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

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

	High (5)
	Moderately high(4)
x	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer 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.

1	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

37.5 TOTAL (Max 100 pts)

2 Category

Wetland ID:	LO-11, LO-12, and LO-13

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	6		
	Metric 2. Buffers and surrounding land use	4		
	Metric 3. Hydrology	16.5		
	Metric 4. Habitat	8		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	3		
	TOTAL SCORE	37.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-11, LO-12, and LO-13

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	

Category 3

End of Ohio Rapid Assessment Method for Wetlands.

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

Instructions

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

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as 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:	**M.R.Kline, L.H.Jacks**
Date:	**11/17/2020**
Affiliation:	**AECOM**
Address:	**Foster Plaza 6, 681 Anderson Drive, Suite 120, Pittsburgh, PA 15220**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**LO-40**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depression**

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

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

Lat/Long or UTM Coordinate:	**41.514408, -82.915702**
USGS Quad Name:	**Port Clinton**
County:	**Ottawa**
Township:	**Portage**
Section and Subsection:	**6N, 17E**
Hydrologic Unit Code:	**Lacarpe Creek-Frontal Lake Erie (041000100503)**
Site Visit:	**11/17/2020**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	LO-40		
Wetland Size (delineated acres):	0.01	Wetland Size (Estimated total acres):	0.01

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

Comments, Narrative Discussion, Justification of Category Changes:

A small PEM wetland located in a depression located on the edge of an existing substation paved entrance and south of E Parry Street. The wetland is located in a frequently mowed lawn and the boundary of the wetland was fully delineated. The source of hydrology is from precipitation and surface runoff from the nearby developed/impervious surfaces that collect within this depressional area.

Final score:	9	Category:	1

Wetland ID:	LO-40

Scoring Boundary Worksheet

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

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

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

Wetland ID:	LO-40

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

Wetland ID:	LO-40

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

Wetland ID:	LO-40

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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.

Wetland ID:	LO-40

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.H.Jacks	Date:	11/17/2020

Field ID:

W-201117-MRK-001 PEM

Delineated acres:	0.01
Total acres:	0.01

Metric 1. Wetland Area (size).

0.0 (subtotal) / 0.0 (max 6 pts)

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.

1.0 (subtotal) / 1.0 (max 14 pts.)

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

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

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

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

Metric 3. Hydrology.

5.0 (subtotal) / 6.0 (max 30 pts.)

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)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] 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
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

3.0 (subtotal) / 9.0 (max 20 pts.)

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] 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)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

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

9.0 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	LO-40

Site:	Lakeview-Greenfield	Rater(s):	M.R.Kline, L.H.Jacks	Date:	11/17/2020

Field ID:

W-201117-MRK-001 PEM

9.0
subtotal this page

0.0 max 10 pts. | **9.0** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0.0 max 20pts. | **9.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

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)
	Low (1)
x	None (0)

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high 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

9.0 TOTAL (Max 100 pts)

1 Category

Wetland ID:	LO-40

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	1		
	Metric 3. Hydrology	5		
	Metric 4. Habitat	3		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	0		
	TOTAL SCORE	9		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	LO-40

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 C

OEPA HHEI STREAM FORMS

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **63**

SITE NAME/LOCATION: Lakeview-Greenfield 138kV Transmission Line
SITE NUMBER: | RIVER BASIN: Portage | DRAINAGE AREA (mi²): 0.01
LENGTH OF STREAM REACH (ft): 200 | LAT.: 41.50583 | LONG.: -82.91653 | RIVER CODE: N/A | RIVER MILE: N/A
DATE: 01/14/20 | SCORER: MRK, LB | COMMENTS: HH-200114-MRK-002 Perennial

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
Stream is channelized, flows along an active agriculture field

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☑	SILT [3 pts]	80
☐	BOULDER (>256 mm) [16 pts]	0	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☑	COBBLE (65-256 mm) [12 pts]	15	☐	CLAY or HARDPAN [0 pt]	0
☐	GRAVEL (2-64 mm) [9 pts]	5	☐	MUCK [0 pts]	0
☐	SAND (<2 mm) [6 pts]	0	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15 **(A)** Substrate Percentage Check **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points
Substrate Max = 40: 18
A + B

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

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

COMMENTS: OHWM=26" **MAXIMUM POOL DEPTH** (Inches): 22.00

Pool Depth Max = 30: 25

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

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

COMMENTS: OHWM width=5' **AVERAGE BANKFULL WIDTH** (Feet): 6.00

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS: left bank-PSS wetland in ROW, right bank-Agriculture field

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):
☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)
COMMENTS: Stream flow is slow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):
☑ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☑ EWH Name: Lake Erie Distance from Evaluated Stream 0.75

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

USGS Quadrangle Name: Port Clinton NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Ottawa Township / City: 6N, 17E

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/11/20 Quantity: 0.50

Photograph Information: _____

Elevated Turbidity? (Y/N): Y Canopy (% open): 100

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

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

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

Additional comments/description of pollution impacts: _____

Water is slightly turbid

BIOTIC EVALUATION

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

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

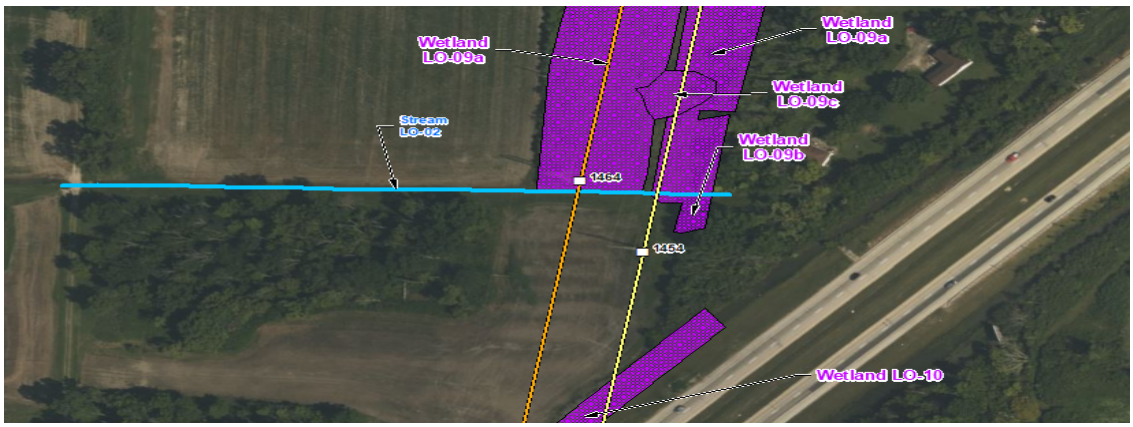
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

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

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

FLOW →



Save as pdf Reset Form

Stream LO-03 Very poor

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 21

Stream & Location: Ottawa County **RM:** _ _ _._ **Date:** 1-15-20

QH-200115-MRK-001a Perennial **Scorers Full Name & Affiliation:** MRK, LB

River Code:_ _ _- _ _ _- _ _ _ **STORET #:**_ _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 41.49848, -82.91816 **Office verified location** ☐

1] SUBSTRATE

Check **ONLY Two** substrate *TYPE BOXES*; estimate % or note every type present

Check ONE (*Or 2 & average*)

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]			☐ ☐ HARDPAN [4]		
☐ ☐ BOULDER [9]			☐ ☐ DETRITUS [3]		
☐ ☐ COBBLE [8]			☐ ☐ MUCK [2]		
☐ ☑ GRAVEL [7]	10		☑ ☐ SILT [2]	90	
☐ ☐ SAND [6]			☐ ☐ ARTIFICIAL [0]		
☐ ☐ BEDROCK [5]					

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☑ 3 or less [0]

ORIGIN	SILT / EMBEDDEDNESS	QUALITY
☐ LIMESTONE [1]		☑ HEAVY [-2]
☐ TILLS [1]		☐ MODERATE [-1]
☑ WETLANDS [0]		☐ NORMAL [0]
☐ HARDPAN [0]		☐ FREE [1]
☐ SANDSTONE [0]		☑ EXTENSIVE [-2]
☐ RIP/RAP [0]		☐ MODERATE [-1]
☐ LACUSTURINE [0]		☐ NORMAL [0]
☐ SHALE [-1]		☐ NONE [1]
☐ COAL FINES [-2]		

Substrate 5 *Maximum 20*

Comments Stream is channelized

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

0 UNDERCUT BANKS [1]	0 POOLS > 70cm [2]	0 OXBOWS, BACKWATERS [1]
0 OVERHANGING VEGETATION [1]	0 ROOTWADS [1]	0 AQUATIC MACROPHYTES [1]
0 SHALLOWS (IN SLOW WATER) [1]	0 BOULDERS [1]	1 LOGS OR WOODY DEBRIS [1]
0 ROOTMATS [1]		

AMOUNT

Check ONE (*Or 2 & average*)

☐ EXTENSIVE >75% [11]
☐ MODERATE 25-75% [7]
☑ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Cover 4 *Maximum 20*

Comments Agricultural field adjacent to both stream bank

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☑ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☑ RECOVERING [3]	☐ LOW [1]
☑ NONE [1]	☑ POOR [1]	☑ RECENT OR NO RECOVERY [1]	

Channel 6 *Maximum 20*

Comments

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for *EACH BANK* (*Or 2 per bank & average*)

River right looking downstream

L	R	EROSION
☑	☑	NONE / LITTLE [3]
☐	☐	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

L	R	RIPARIAN WIDTH
☐	☐	WIDE > 50m [4]
☐	☐	MODERATE 10-50m [3]
☐	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☑	☑	NONE [0]

L	R	FLOOD PLAIN QUALITY
☐	☐	FOREST, SWAMP [3]
☐	☐	SHRUB OR OLD FIELD [2]
☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☑	☑	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Riparian 3 *Maximum 10*

Comments Riparian zone is agriculture

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check **ONE** (*ONLY!*)

☐ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☑ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH Check ONE (*Or 2 & average*)

☐ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☑ POOL WIDTH > RIFFLE WIDTH [0]

CURRENT VELOCITY Check ALL that apply

☐ TORRENTIAL [-1]	☐ SLOW [1]
☐ VERY FAST [1]	☑ INTERSTITIAL [-1]
☐ FAST [1]	☐ INTERMITTENT [-2]
☐ MODERATE [1]	☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current 0 *Maximum 12*

Comments Stream flow is slow, stream is channelized, no riffles present

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☑ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☑ BEST AREAS < 5cm [metric=0]		☑ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☑ EXTENSIVE [-1]

Riffle / Run 0 *Maximum 8*

Comments Heavy silt from agricultural fields

6] GRADIENT (ft/mi)

DRAINAGE AREA (mi²)

☑ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: **%GLIDE:** **%RUN:** 100 **%RIFFLE:**

Gradient 3 *Maximum 10*

A] SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam?*, Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

METHOD

- ☐ BOAT
- ☐ WADE
- ☐ L. LINE
- ☑ OTHER

STAGE

1st -sample pass-	2nd
☐ HIGH	☐
☐ UP	☐
☑ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

200 feet

CLARITY

1st --sample pass--	2nd
☑ < 20 cm	☐
☐ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

CANOPY

- ☑ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

1st pass 2nd _____ cm

C] REC

B] AESTHETIC

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☑ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

ION AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

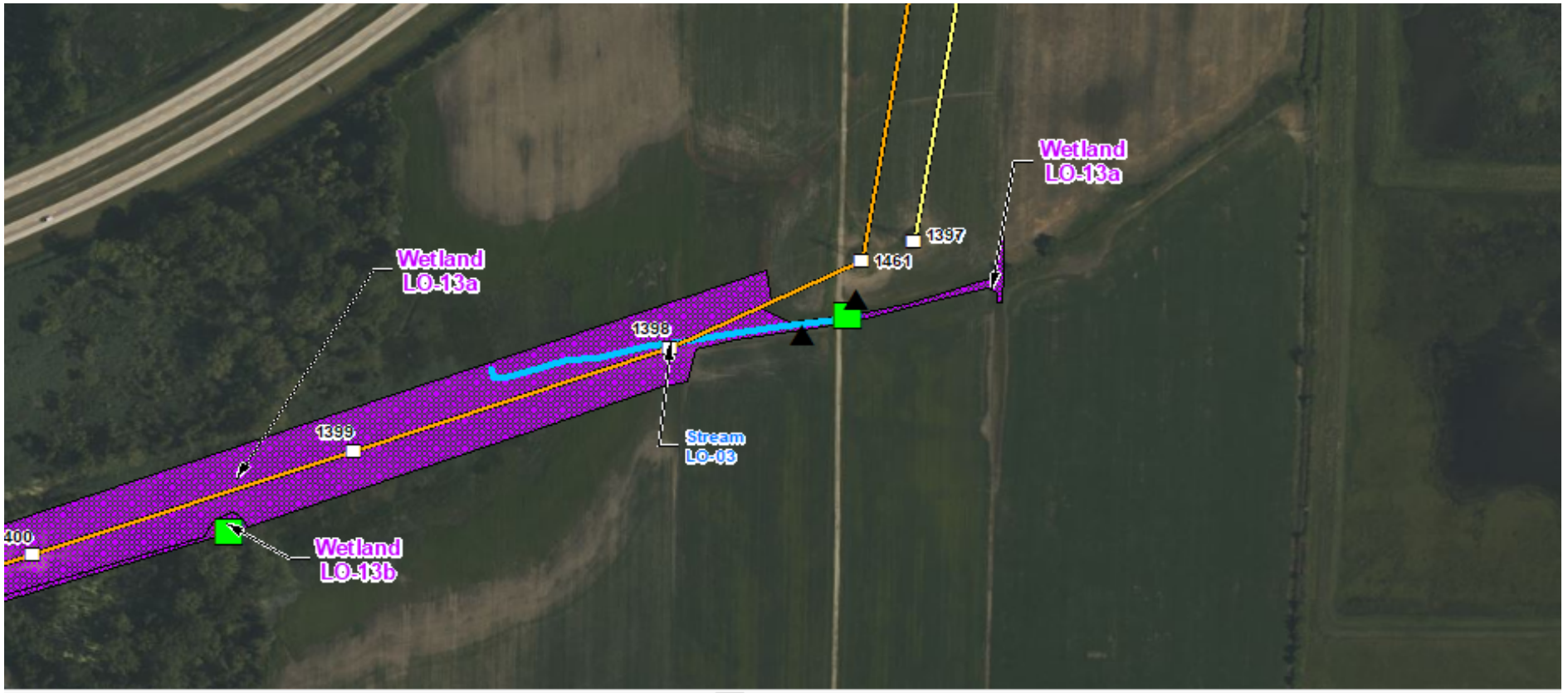
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width 5'
- $\bar{x}$ depth 12"
- max. depth 20"
- $\bar{x}$ bankfull width 7'
- bankfull $\bar{x}$ depth 3.5'
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Le *Tree:*

Stream Drawing:



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **60**

SITE NAME/LOCATION: Lakeview-Greenfield 138kV Transmission Line
SITE NUMBER: | RIVER BASIN: Portage | DRAINAGE AREA (mi²): 0.13
LENGTH OF STREAM REACH (ft): 200 | LAT.: 41.51208 | LONG.: -82.91535 | RIVER CODE: N/A | RIVER MILE: N/A
DATE: 01/14/20 | SCORER: MRK, LB | COMMENTS: HH-200114-MRK-001 Perennial

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY
Stream is channelized, banks are concrete

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☑	SILT [3 pt]	40
☐	BOULDER (>256 mm) [16 pts]	5	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☑	COBBLE (65-256 mm) [12 pts]	25	☐	CLAY or HARDPAN [0 pt]	0
☐	GRAVEL (2-64 mm) [9 pts]	10	☐	MUCK [0 pts]	0
☐	SAND (<2 mm) [6 pts]	0	☐	ARTIFICIAL [3 pts]	20

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30 (A) | Substrate Percentage Check | (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points
Substrate Max = 40: 20
A + B

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

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

COMMENTS: OHWM=21" **MAXIMUM POOL DEPTH** (Inches): 18.00

Pool Depth Max = 30: 20

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

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

COMMENTS: OHWM width=9 **AVERAGE BANKFULL WIDTH** (Feet): 11.00

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS: left bank-Residential trailer park, right bank-Transmission line ROW

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):
☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)
COMMENTS: Stream flow is slow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):
☑ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☑ EWH Name: Lake Erie Distance from Evaluated Stream 0.25

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

USGS Quadrangle Name: Port Clinton NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Ottawa Township / City: 6N, 17E

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/11/20 Quantity: 0.50

Photograph Information: upstream, downstream, substrate

Elevated Turbidity? (Y/N): Y Canopy (% open): 100

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

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

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

Additional comments/description of pollution impacts:

Water is slightly turbid

BIOTIC EVALUATION

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

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

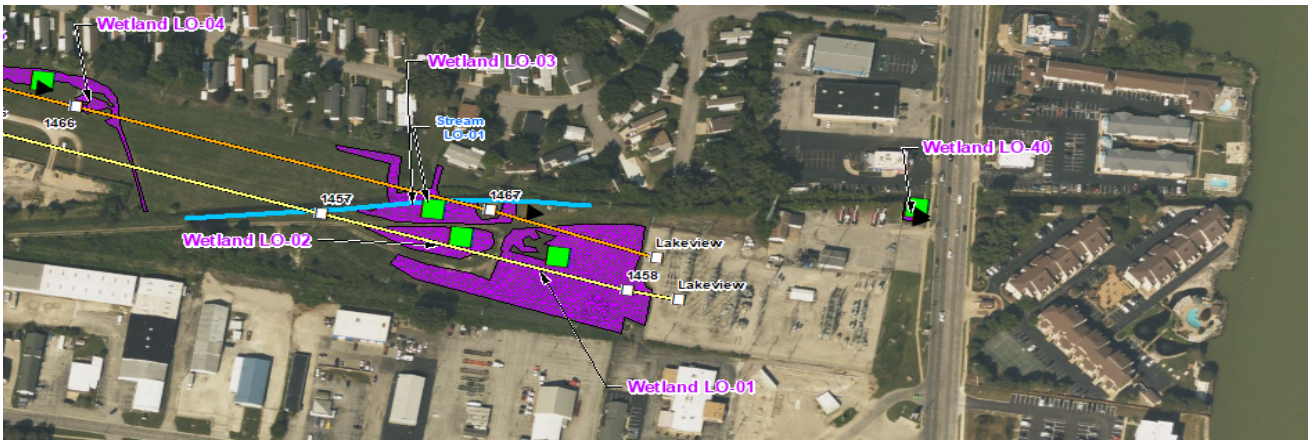
Comments Regarding Biology:

Macroinvertebrates were not sampled due to water depth.

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

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

FLOW →



Save as pdf Reset Form

APPENDIX D

REPRESENTATIVE STREAMS AND WETLANDS PHOTOGRAPH

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

October 7, 2020

Description:

Photograph 1.

Wetland
LG-01

PEM

Category 1

Facing North

Date:

October 7, 2020

Description:

Photograph 2.

Wetland
LG-01

PEM

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

October 7, 2020

Description:

Photograph 3.

Wetland
LG-01

PEM

Category 1

Facing West

Date:

October 7, 2020

Description:

Photograph 4.

Wetland
LG-01

PEM

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:
October 7, 2020

Description:

Photograph 5.

Wetland
LG-01

PEM

Category 1

Soil Profile

Date:

January 14, 2020

Description:

Photograph 6.

Wetland
LO-01

PEM

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 7.

Wetland
LO-01

PEM

Category 1

Facing South

Date:

January 14, 2020

Description:

Photograph 8.

Wetland
LO-01

PEM

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 9.

Wetland
LO-01

PEM

Category 1

Facing West

Date:

January 14, 2020

Description:

Photograph 10.

Wetland
LO-01

PEM

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 11.

Wetland
LO-02

PEM

Category 1

Facing North

Date:

January 14, 2020

Description:

Photograph 12.

Wetland
LO-02

PEM

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 13.

Wetland
LO-02

PEM

Category 1

Facing East

Date:

January 14, 2020

Description:

Photograph 14.

Wetland
LO-02

PEM

Category 1

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 15.

Wetland
LO-02

PEM

Category 1

Soil Profile

Date:

January 14, 2020

Description:

Photograph 16.

Wetland
LO-03

PEM

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 17.

Wetland
LO-03

PEM

Category 1

Facing South

Date:

January 14, 2020

Description:

Photograph 18.

Wetland
LO-03

PEM

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 19.

Wetland
LO-03

PEM

Category 1

Facing West

Date:

January 14, 2020

Description:

Photograph 20.

Wetland
LO-03

PEM

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 21.

Wetland
LO-04

PEM

Category 1

Facing North

Date:

January 14, 2020

Description:

Photograph 22.

Wetland
LO-04

PEM

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 23.

Wetland
LO-04

PEM

Category 1

Facing East

Date:

January 14, 2020

Description:

Photograph 24.

Wetland
LO-04

PEM

Category 1

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 25.

Wetland
LO-04

PEM

Category 1

Soil Profile

Date:

January 14, 2020

Description:

Photograph 26.

Wetland
LO-05

PEM

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 27.

Wetland
LO-05

PEM

Category 1

Facing South

Date:

January 14, 2020

Description:

Photograph 28.

Wetland
LO-05

PEM

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 29.

Wetland
LO-05

PEM

Category 1

Facing West

Date:

January 14, 2020

Description:

Photograph 30.

Wetland
LO-05

PEM

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 31.

Wetland
LO-06

PEM

Category 1

Facing North

Date:

January 14, 2020

Description:

Photograph 32.

Wetland
LO-06

PEM

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 33.

Wetland
LO-06

PEM

Category 1

Facing East

Date:

January 14, 2020

Description:

Photograph 34.

Wetland
LO-06

PEM

Category 1

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 35.

Wetland
LO-06

PEM

Category 1

Soil Profile

Date:

January 15, 2020

Description:

Photograph 36.

Wetland
LO-07

PSS

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 37.

Wetland
LO-07

PSS

Category 1

Facing South

Date:

January 15, 2020

Description:

Photograph 38.

Wetland
LO-07

PSS

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 39.

Wetland
LO-07

PSS

Category 1

Facing West

Date:

January 15, 2020

Description:

Photograph 40.

Wetland
LO-07

PSS

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 41.

Wetland
LO-08

PSS

Category 1

Facing North

Date:

January 14, 2020

Description:

Photograph 42.

Wetland
LO-08

PSS

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 43.

Wetland
LO-08

PSS

Category 1

Facing East

Date:

January 14, 2020

Description:

Photograph 44.

Wetland
LO-08

PSS

Category 1

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 45.

Wetland
LO-08

PSS

Category 1

Soil Profile

Date:

January 14, 2020

Description:

Photograph 46.

Wetland
LO-09a

PEM

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 47.

Wetland
LO-09a

PEM

Category 1

Facing South

Date:

January 14, 2020

Description:

Photograph 48.

Wetland
LO-09a

PEM

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 49.

Wetland
LO-09a

PEM

Category 1

Facing West

Date:

January 14, 2020

Description:

Photograph 50.

Wetland
LO-09a

PEM

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 51.

Wetland
LO-09b

PSS

Category 1

Facing North

Date:

January 14, 2020

Description:

Photograph 52.

Wetland
LO-09b

PSS

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 53.

Wetland
LO-09b

PSS

Category 1

Facing East

Date:

January 14, 2020

Description:

Photograph 54.

Wetland
LO-09b

PSS

Category 1

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 55.

Wetland
LO-09b

PSS

Category 1

Soil Profile

Date:

January 14, 2020

Description:

Photograph 56.

Wetland
LO-09c

PUB

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 57.

Wetland
LO-09c

PUB

Category 1

Facing South

Date:

January 14, 2020

Description:

Photograph 58.

Wetland
LO-09c

PUB

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Photograph 59.

Wetland
LO-09c

PUB

Category 1

Facing West

Date:

January 14, 2020

Description:

Photograph 60.

Wetland
LO-09c

PUB

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 16, 2020

Description:

Photograph 61.

Wetland
LO-10

PEM

Category 1

Facing North

Date:

January 16, 2020

Description:

Photograph 62.

Wetland
LO-10

PEM

Category 1

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 16, 2020

Description:

Photograph 63.

Wetland
LO-10

PEM

Category 1

Facing East

Date:

January 16, 2020

Description:

Photograph 64.

Wetland
LO-10

PEM

Category 1

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 16, 2020

Description:

Photograph 65.

Wetland
LO-10

PEM

Category 1

Soil Profile

Date:

January 16, 2020

Description:

Photograph 66.

Wetland
LO-11

PEM

Category 2

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 16, 2020

Description:

Photograph 67.

Wetland
LO-11

PEM

Category 2

Facing South

Date:

January 16, 2020

Description:

Photograph 68.

Wetland
LO-11

PEM

Category 2

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 16, 2020

Description:

Photograph 69.

Wetland
LO-11

PEM

Category 2

Facing West

Date:

January 16, 2020

Description:

Photograph 70.

Wetland
LO-11

PEM

Category 2

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 71.

Wetland
LO-12a

PEM

Category 2

Facing North

Date:

January 15, 2020

Description:

Photograph 72.

Wetland
LO-12a

PEM

Category 2

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 73.

Wetland
LO-12a

PEM

Category 2

Facing East

Date:

January 15, 2020

Description:

Photograph 74.

Wetland
LO-12a

PEM

Category 2

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 75.

Wetland
LO-12a

PEM

Category 2

Soil Profile

Date:

January 15, 2020

Description:

Photograph 76.

Wetland
LO-12b

PSS

Category 2

Facing Northeast

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 77.

Wetland
LO-12b

PSS

Category 2

Facing South

Date:

January 15, 2020

Description:

Photograph 78.

Wetland
LO-12b

PSS

Category 2

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Photograph 79.

Wetland
LO-12b

PSS

Category 2

Facing West

Date:

January 15, 2020

Description:

Photograph 80.

Wetland
LO-12b

PSS

Category 2

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

November 17, 2020

Description:

Photograph 81.

Wetland
LO-13

PEM

Category 2

Facing North

Date:

November 17, 2020

Description:

Photograph 82.

Wetland
LO-13

PEM

Category 2

Facing South

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

November 17, 2020

Description:

Photograph 83.

Wetland
LO-13

PEM

Category 2

Facing East

Date:

November 17, 2020

Description:

Photograph 84.

Wetland
LO-13

PEM

Category 2

Facing West

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

November 17, 2020

Description:

Photograph 85.

Wetland
LO-13

PEM

Category 2

Soil Profile

Date:

November 17, 2020

Description:

Photograph 86.

Wetland
LO-40

PEM

Category 1

Facing North

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

November 17, 2020

Description:

Photograph 87.

Wetland
LO-40

PEM

Category 1

Facing South

Date:

November 17, 2020

Description:

Photograph 88.

Wetland
LO-40

PEM

Category 1

Facing East

AECOM

PHOTOGRAPHIC RECORD
Wetlands

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

November 17, 2020

Description:

Photograph 89.

Wetland
LO-40

PEM

Category 1

Facing West

Date:

November 17, 2020

Description:

Photograph 90.

Wetland
LO-40

PEM

Category 1

Soil Profile

AECOM

PHOTOGRAPHIC RECORD
Stream

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Stream LO-01

Perennial

Modified Class 2

Upstream

Date:

January 14, 2020

Description:

Stream LO-01

Perennial

Modified Class 2

Downstream

AECOM

PHOTOGRAPHIC RECORD
Stream

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 14, 2020

Description:

Stream LO-01

Perennial

Modified Class 2

Substrate

Date:

January 14, 2020

Description:

Stream LO-02

Perennial

Modified Class 2

Upstream

AECOM

PHOTOGRAPHIC RECORD
Stream

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:
January 14, 2020

Description:

Stream LO-02

Perennial

Modified Class 2

Downstream

Date:

January 14, 2020

Description:

Stream LO-02

Perennial

Modified Class 2

Substrate

AECOM

PHOTOGRAPHIC RECORD
Stream

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Stream LO-03

Perennial

Very poor

Upstream

Date:

January 15, 2020

Description:

Stream LO-03

Perennial

Very poor

Downstream

AECOM

PHOTOGRAPHIC RECORD
Stream

Client Name:	Site Location:	Project No.
American Transmission Systems, Inc, a FirstEnergy Company	Lakeview-Greenfield 138 kV Transmission Line Rebuild Project	60640025

Date:

January 15, 2020

Description:

Stream LO-03

Perennial

Very poor

Substrate

Date:

Description:

Intentionally left blank

Legend

- Greenfield-Lakeview 138kV Structures
- Greenfield-Lakeview 138kV Line
- Project Area
- Flood Zone

0 ¼ ½ ¾ 1 Miles

N

Greenfield-Lakeview 138kV Transmission Line Reconductor and Rebuild Project

Map Created on: 12/1/2021

Exhibit 11

FirstEnergy

Legend

- Greenfield-Lakeview 138kV Structures
- Greenfield-Lakeview 138kV Line
- Project Area
- Flood Zone

0 ¼ ½ ¾ 1 Miles

N

Map Created on: 12/1/2021

Greenfield-Lakeview 138kV Transmission Line Reconductor and Rebuild Project

Exhibit 11

FirstEnergy