

LETTER OF NOTIFICATION - REXFORD 138 KV EXTENSION PROJECT

Appendix D Copies of Letters of Notification to Public Officials
December 18, 2015

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December 15, 2015

Puskarich Public Library
Ms. Sandi Thompson, Director
200 East Market Street
Cadiz, OH 43907

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Ms. Thompson:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Rexford Extension 138kV Transmission Line Project, Public Utilities Commission of Ohio Case Number 15-2036-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission line. This new transmission line will provide electricity to the Sunoco-Hopedale Plant. AEP Ohio Transco will build the new line using standard single circuit 138-kV structures. The Rexford Extension 138-kV transmission line will be approximately two miles long. The new line will be most likely located in Green Township in Harrison County. This project will be an approximate \$4 million investment by AEP Ohio Transco. Construction is anticipated to begin in January 2016.

We ask that this Letter of Notification be made available to the public.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,



Brett E. Schmied
Project Outreach Specialist

cc: Bethany McCrea, Project Manager

December 15, 2015

Harrison County Board of Commissioners
Mr. William H. Host
Mr. Dale Ray Norris
Mr. Don Rae Bethel
101 Market Street
Cadiz, OH 43907

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Commissioners:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Rexford Extension 138kV Transmission Line Project, Public Utilities Commission of Ohio Case Number 15-2036-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission line. This new transmission line will provide electricity to the Sunoco-Hopedale Plant. AEP Ohio Transco will build the new line using standard single circuit 138-kV structures. The Rexford Extension 138-kV transmission line will be approximately two miles long. The new line will be most likely located in Green Township in Harrison County. This project will be an approximate \$4 million investment by AEP Ohio Transco. Construction is anticipated to begin in January 2016.

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Project Outreach Specialist

cc: Bethany McCrea, Project Manager

December 15, 2015

Harrison County Engineer
Mr. Robert K. Sterling
32500 Cadiz-Dennison Road
Scio, OH 43988

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Mr. Sterling:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

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Project Outreach Specialist

cc: Bethany McCrea, Project Manager

December 15, 2015

Green Township Trustee
Mr. John J. Seleski
80495 Croskey Road
Cadiz, OH 43907

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Mr. Seleski:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

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Brett E. Schmied
Project Outreach Specialist

cc: Bethany McCrea, Project Manager

December 15, 2015

Green Township Trustee
Mr. Vee Jay Beadling, Sr.
607 East Street
Hopedale, OH 43976

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Mr. Beadling:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

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Project Outreach Specialist

cc: Bethany McCrea, Project Manager

December 15, 2015

Green Township Trustee
Mr. James E. Ward
308 Hilltop Street
Hopedale, OH 43976

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Mr. Ward:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

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Project Outreach Specialist

cc: Bethany McCrea, Project Manager

December 15, 2015

Green Township Fiscal Officer
Ms. Jacqueline A. Tipton
528 Virginia Street
Hopedale, OH 43976

RE: Letter of Notification
Rexford Extension 138kV Transmission Line Project
Case Number: 15-2036-EL-BLN

Dear Ms. Tipton:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company, Inc., (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

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LETTER OF NOTIFICATION - REXFORD 138 KV EXTENSION PROJECT

Appendix E Ecological Features Inventory Report
December 18, 2015

Appendix E Ecological Features Inventory Report

**Rexford 138 KV Line Extension
Project, Harrison County, Ohio**

**Ecological Features Inventory
Report**



Prepared for:
American Electric Power
700 Morrison Road
Gahanna, OH 43230

Prepared by:
Stantec Consulting Services Inc.
11687 Lebanon Road
Cincinnati, Ohio 45241

December 18, 2015

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1.0 INTRODUCTION

American Electric Power (AEP) is proposing to extend the existing Rexford 138kV transmission line in Harrison County, Ohio, and connect it with a proposed Sunoco Customer Satisfaction facility (Figure 1, Appendix A). The proposed project area is located east of State Route 151, along the northern and southern sides of Giacobbi Road, in Harrison County, Ohio. The project will include an approximate 100-foot permanent right-of-way along the 0.84 mile project length. The proposed Project area (Figure 1) was surveyed for wetlands, waterbodies, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on November 17, 2015.

2.0 METHODS

2.1 WETLAND DELINEATION

Prior to conducting field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, and aerial imagery mapping. Stantec completed a wetland delineation in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

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

2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR), and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix B – Agency Correspondence). To assess potential impacts to rare,

REXFORD 138 KV LINE EXTENSION PROJECT, HARRISON COUNTY, OHIO

threatened, or endangered species, Stantec walked the proposed Project area and collected information on existing habitat within the Project area and the potential for these habitats to be used by these species.

3.0 RESULTS

Stantec completed field surveys on November 17, 2015, for wetlands, waterbodies, and threatened and endangered species or their habitat. Figure 2 shows the delineated wetland and waterbodies identified within the Project area and Figure 3 shows the habitats identified within the Project area during rare, threatened, and endangered species habitat assessment surveys (Appendix A). Representative photos of the wetland, streams, and other habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 2). Completed wetland determination, ORAM, and HHEI data forms are included in Appendix D.

3.1 TERRESTRIAL HABITAT

Table 1. Vegetation Communities and Land Cover Found within the Rexford 138kV Line Extension Project Study Area, Harrison County, Ohio

Vegetative Communities and Land Cover Types within the Study Area:	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Acres Within Project Study Area
Early Succession/Old Field	Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	2.79
Mesophytic Hardwood Forest	Intermediate Disturbance (dominated by plants that typify a stable phase of a native community that persists under some disturbance)	No	10.73
Industrial Land	Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	5.64
Total			19.16

REXFORD 138 KV LINE EXTENSION PROJECT, HARRISON COUNTY, OHIO

3.2 WETLANDS

Table 2. Summary of Wetland Resources Found within the Rexford 138kV Line Extension Project Study Area, Harrison County, Ohio

Wetland Name	Photo Numbers	Isolated?	Wetland Classification ¹	ORAM ² Score	ORAM ² Category	Delineated Area (acres)	Impacted Area (acres)
W01MKA	9-10	No	PEM ²	30	2	0.11	0.03
¹ Wetland classification is based on Cowardin et al. 1979.							
² PEM = Palustrine Emergent Wetland							
³ ORAM = Ohio Rapid Assessment Method							

3.3 STREAMS

Table 3. Summary of Stream Resources Found within the Rexford 138kV Line Extension Project Study Area, Harrison County, Ohio

Stream Name	Photo Numbers	Receiving Waters	Stream Classification ¹	Stream Flow Regime	Stream Evaluation Method	Stream Evaluation Score	OHWM Width (feet) ²	Delineated Length (feet)	Impacted Area (feet)
S01MK	1-4	Cross Creek	R4SB3/4	Intermittent	HHEI	59	3	278	20
S02MK	5-6	Cross Creek	R4SB6/3	Ephemeral	HHEI	32	5	986	0
S03MK	7-8	Cross Creek	R4SB6/3	Ephemeral	HHEI	32	3	250	0
¹ Stream classification is based on Federal Register/Vol. 67, No. 10 (2002)									
² OHWM = Ordinary High Water Mark									

3.4 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Ohio State-Listed Species within the Rexford 138kV Line Extension Project Study Area, Harrison County, Ohio

Common Name	Scientific Name	State ¹ Listing	Known to Harrison County?	Known Within One Mile of Project Area? ²	Habitat Preference	Habitat Observed in Project Area?	ODNR Comments/ Recommendations
Philadelphia panic grass	<i>Panicum philadelphicum</i>	E	Yes	No	Diverse habitat preferences from dry soil of open woods, fields, rocky/sandy ground, to moist soil on shores of lakes and streams (ODNR Division of Natural Areas and Preserves 2015a).	Yes	No comments
Narrow-leaved blue-eyed-grass	<i>Sisyrinchium mucronatum</i>	T	Yes	No	Variety of open, moist habitats such as fields, meadows, open woods, sandy places, moist calcareous flats, and open boggy thickets; also disturbed areas (ODNR Division of Natural Areas and Preserves 2015b).	No	No comments
Drummond's aster	<i>Symphyotrichum drummondii</i>	T	Yes	No	Open to semi-open habitats, often in dry, calcareous substrates, in prairies, open woods, woods edges, thickets, and roadsides (ODNR Division of Natural Areas and Preserves 2015c).	Yes	No comments
Bobcat	<i>Lynx rufus</i>	T	Yes	No	Mixed deciduous-coniferous and hardwood forests; rock ledges; brushy and rocky woodlands broken by fields, old roads and farmland (Connecticut Department of Energy and Environmental Protection 2015).	Yes	No comments
Bobolink	<i>Dolichonyx oryzivorus</i>	SC	Yes	No	Grassy hayfields and pastures, clover/alfalfa fields, wet prairies, and grassy marsh margins; fallow fields composed of grasses and weeds (ODNR Division of Wildlife 2015a).	No	No comments
Henslow's sparrow	<i>Ammodramus henslowii</i>	SC	Yes	No	Large, contiguous blocks of grassland habitat for insects and seeds; breed in large areas of grassland (ODNR Division of Wildlife 2015b).	No	No comments
Sharp-shinned hawk	<i>Accipiter striatus</i>	SC	Yes	No	Nests are platforms made of twigs and bark; typically located in conifer trees and high off the ground (ODNR Division of Wildlife 2015c).	No	No comments
Sora rail	<i>Porzana carolina</i>	SC	Yes	No	Freshwater marshes with tall stands of cattails and sedges (ODNR Division of Wildlife 2015d).	No	No comments
Indiana bat	<i>Myotis sodalis</i>	E	Yes	No	Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007).	Yes	ODNR recommends clearing trees between October 1 and March 31 to avoid potential adverse effects to this species; if trees must be cut in the summer months, ODNR recommends a net survey between June 1 and August 15 – prior to tree cutting.
Upland sandpiper	<i>Bartramia longicauda</i>	E	Yes	No	Dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through Conservation Reserve Program (CRP).	No	Construction in suitable nesting habitat should be avoided during the species' nesting period of April 15 through July 31; if no suitable habitat will be impacted, then the project is not likely to impact upland sandpiper.
Black bear	<i>Ursus americanus</i>	E	Yes	No	Wide variety of heavily wooded habitats, ranging from swamps and wetlands to dry upland hardwood and coniferous forests. Although they will utilize open areas, bears prefer wooded cover with a dense understory (ODNR Division of Wildlife 2015e).	Yes	Due to the mobility of this species, the project is not likely to impact black bear.

¹E= Endangered; T= Threatened; SC= Species of Concern
²According to correspondence from ODNR Natural Heritage Database – Appendix B

Table 5. Summary of Potential Federally Listed Species within the Rexford 138kV Line Extension Project Study Area, Harrison County, Ohio

Common Name	Scientific Name	Federal Listing ¹	Known to Harrison County?	Habitat Preference	Habitat Observed in Project Area?	USFWS Comments/ Recommendations
Indiana bat	<i>Myotis sodalis</i>	E	Yes	Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007).	Yes	Due to the type, size and location of the project, and the proposed removal of trees between October 1 and March 31, USFWS does not anticipate adverse effects.
Northern long-eared bat	<i>Myotis septentrionalis</i>	T	Yes	Roosting habitat and maternity roosts in dead or live trees, snags with cavities, peeling or exfoliating bark, split tree trunk and/or branches, occasional roosting habitat in structures such as barns and sheds, and foraging habitat in upland and lowland woodlots and tree lined corridors (USFWS 2015).	Yes	Due to the type, size and location of the project, and the proposed removal of trees between October 1 and March 31, USFWS does not anticipate adverse effects.
E=endangered; T=threatened						

4.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species or their habitats within the Project study area on November 17, 2015. During the field surveys, one palustrine emergent wetland totaling approximately 0.11 acres and three streams totaling approximately 1,514 linear feet in length were delineated within the Project area. The wetland was classified as a Category 2 wetland.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project study area at the time of the fieldwork. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

The Project area includes potential habitat for Philadelphia panic grass, Drummond's aster, bobcat, and black bear. However, no occurrences of Philadelphia panic grass, Drummond's aster, bobcat, or black bear are known from the Project area or a one-mile radius of it, according to correspondence received from the ODNR (Appendix B). Additionally, due to the mobility of the bobcat and black bear, this project is not likely to impact these species. No occurrences of these species were encountered during the field survey.

The Project area also includes potential roosting and foraging habitat for the Indiana bat and northern long-eared bat. However, the ODNR (Appendix B) has no records of these species within the Project area or a one-mile radius of it. Due to the presence of potential habitat for these species, the USFWS and ODNR recommends clearing trees between October 1 and March 31 to avoid potential adverse effects to these species. If suitable trees must be cut during the summer months, the ODNR and USFWS recommended a bat mist net survey be conducted between June 1 and August 15, prior to any tree cutting (Appendix B).

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

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

The ODNR (Appendix B) also noted the project is located within the range of a state endangered bird, the upland sandpiper (*Bartramia longicauda*). Nesting upland sandpipers utilize large expanses of dry grasslands and pastures. The ODNR stated that, if this type of habitat will be impacted by the Project, construction in those areas should be avoided during the species' nesting period of April 15 through July 31. No potentially suitable nesting habitat for the upland sandpiper was identified by Stantec within the Project study area.

5.0 REFERENCES

- Connecticut Department of Energy and Environmental Protection. 2015. Bobcat (*Lynx rufus*). Available at <http://www.ct.gov/deep/cwp/view.asp?a=2723&q=325974>. Accessed 25 November 2015.)
- Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, D.C. Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Issuance of Nationwide Permits; Notice, 67 Fed. Reg. 10 (January 15, 2002). *Federal Register: The Daily Journal of the United States*.
- Mack, J.J. 2001. Ohio Rapid Assessment Method for Wetlands, Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.
- Ohio Department of Natural Resources (ODNR) Division of Wildlife. 2015a. Bobolink. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/birds/bobolink>. Accessed 20 November 2015.
- ODNR Division of Wildlife. 2015b. Henslow's sparrow. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/birds/henslows-sparrow>. Accessed 20 November 2015.
- ODNR Division of Wildlife. 2015c. Sharp-shinned Hawk. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/birds/sharp-shinned-hawk>. Accessed 20 November 2015.
- ODNR Division of Wildlife. 2015d. Sora. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/birds/sora>. Accessed 20 November 2015.
- ODNR Division of Wildlife. 2015e. Black bear. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/mammals/black-bear>. Accessed 2 December 2015.
- ODNR Division of Natural Areas and Preserves. 2015a. PANICUM PHILADELPHICUM Bernh. Philadelphia Panic-grass. Available at http://naturepreserves.ohiodnr.gov/portals/dnap/pdf/Rare_Plant_Abstracts/Panicum_philadelphicum.pdf. Accessed 20 November 2015.
- ODNR Division of Natural Areas and Preserves. 2015b. SISYRINCHIUM MUCRONATUM Michx. Narrow-leaved Blue-eyed-grass. Available at http://naturepreserves.ohiodnr.gov/portals/dnap/pdf/Rare_Plant_Abstracts/SISYRINCHIUM_MUCRONATUM.pdf. Accessed 20 November 2015.

REXFORD 138 KV LINE EXTENSION PROJECT, HARRISON COUNTY, OHIO

- ODNR Division of Natural Areas and Preserves. 2014. ASTER DRUMMONDII Lindl. Drummond's Aster. Available at <http://naturepreserves.ohiodnr.gov/rareplants>. Accessed 20 November 2015.
- United States Fish and Wildlife Service (USFWS). 2007. Indiana bat (*Myotis sodalis*) draft recovery plan: First revision. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. 258 pp.
- USFWS. 2015. 2015 Range-wide Indiana Bat Summer Survey Guidelines, April 2015. Available at [http://www.fws.gov/arkansas-es/docs/FINAL%202015%20Indiana%20Bat%20Summer%20Survey%20Guidelines%20\(with%20blue%20revisions\)%2004-01-2015.pdf](http://www.fws.gov/arkansas-es/docs/FINAL%202015%20Indiana%20Bat%20Summer%20Survey%20Guidelines%20(with%20blue%20revisions)%2004-01-2015.pdf). Accessed 20 November 2015.
- U.S. Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0), ed. J.F. Berkowitz, J.S. Wakely R.W. Lichvar, C.V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Appendix A Figures

A.1 FIGURE 1

A.2 FIGURE 2

A.3 FIGURE 3

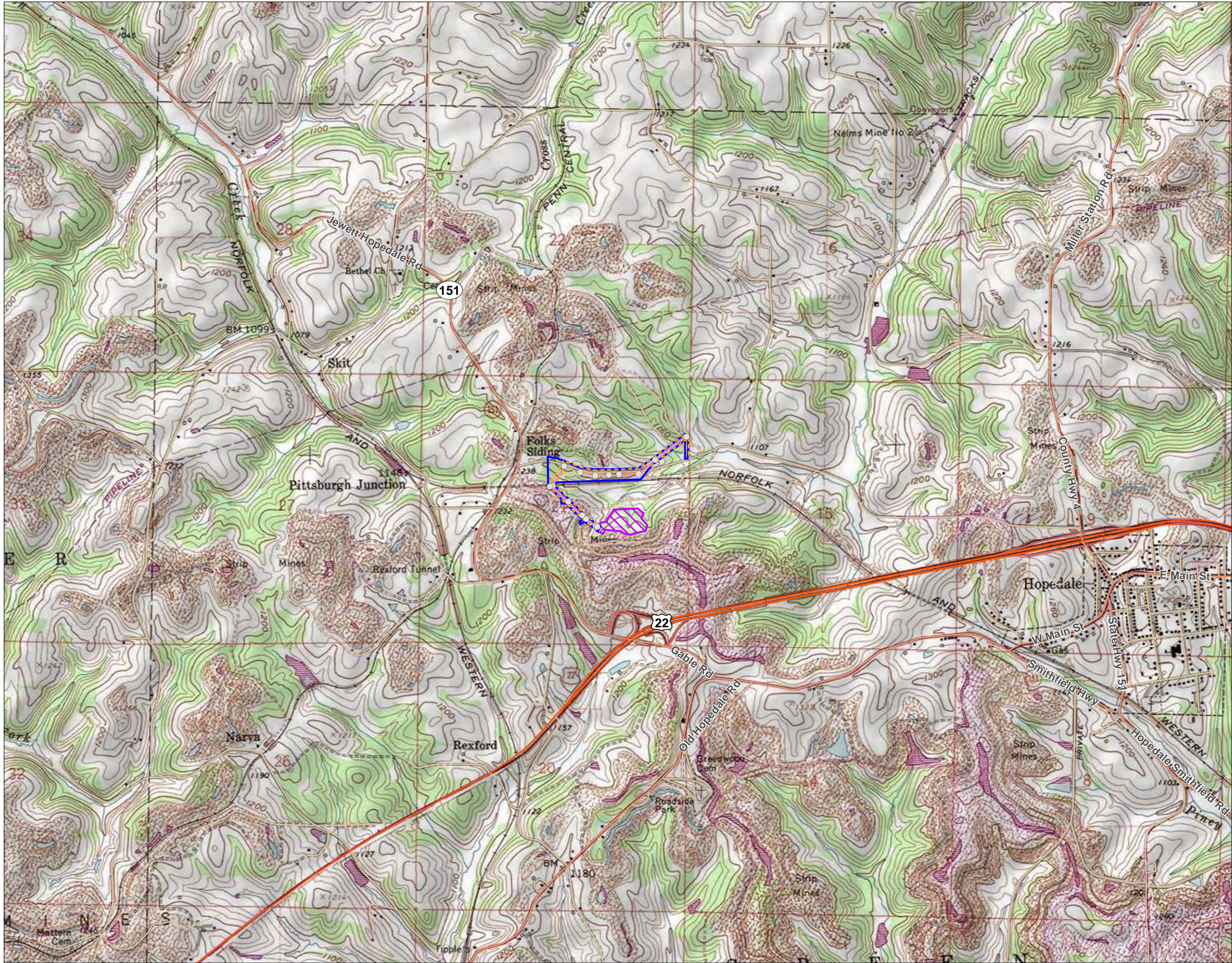
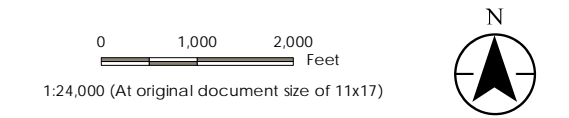


Figure No.
1
Title
Project Location Map

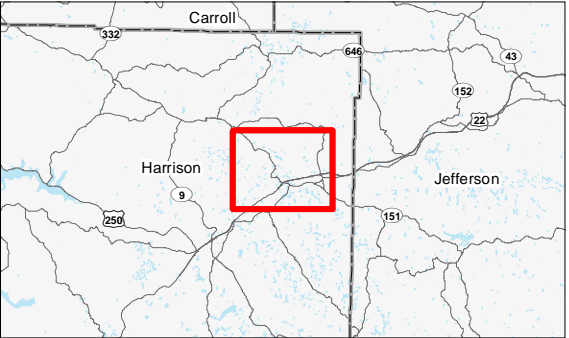
Client/Project
**American Electric Power
Rexford 138kV Line Extension Project**

Project Location
T10N, R4W, S21
Harrison Co., OH

193704100
Prepared by MCP on 2015-11-10
Technical Review by MP on 2015-11-11
Independent Review by DJG on 2015-11-16



- Legend**
- Study Area
 - 100ft ROW
 - Proposed Pole Location
 - Proposed 138kV Transmission Line
 - Proposed Sunoco Facility



- Notes**
- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 - Data Sources Include: Stantec, AEP, NADS
 - Background: USGS 7.5' Topographic Quadrangles





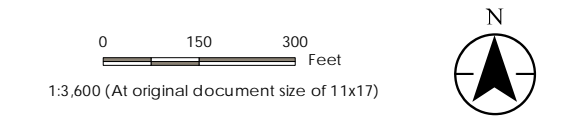
Figure No.
2

Title
**Wetland & Stream
Delineation Map**

Client/Project
American Electric Power
Rexford 138kV Line Extension Project

Project Location
T10N, R4W, S21
Harrison Co., OH

193704100
Prepared by MCP on 2015-11-23
Technical Review by MP on 2015-11-24
Independent Review by DJG on 2015-11-24



Legend

- Study Area
- 100ft ROW
- Proposed Pole Location
- Proposed 138kV Transmission Line
- Proposed Sunoco Facility
- Wetland Determination Sample Point
- Existing Culvert
- Field Delineated Stream
- Field Delineated Wetland
- National Wetlands Inventory
- 100 Year Flood Zones*
- Photo Location

*No features within data frame



- Notes
1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 2. Data Sources Include: Stantec, AEP, NADS, FEMA, USFWS
 3. Orthophotography: 2015 NAIP



R:\Data\Other_PCS\193704100_Rexford 138kV Extension\03_data\03a.ctb\Vol\mxd\HabitatAssessment.mxd Revised: 2015-12-18 By: jmpdcler

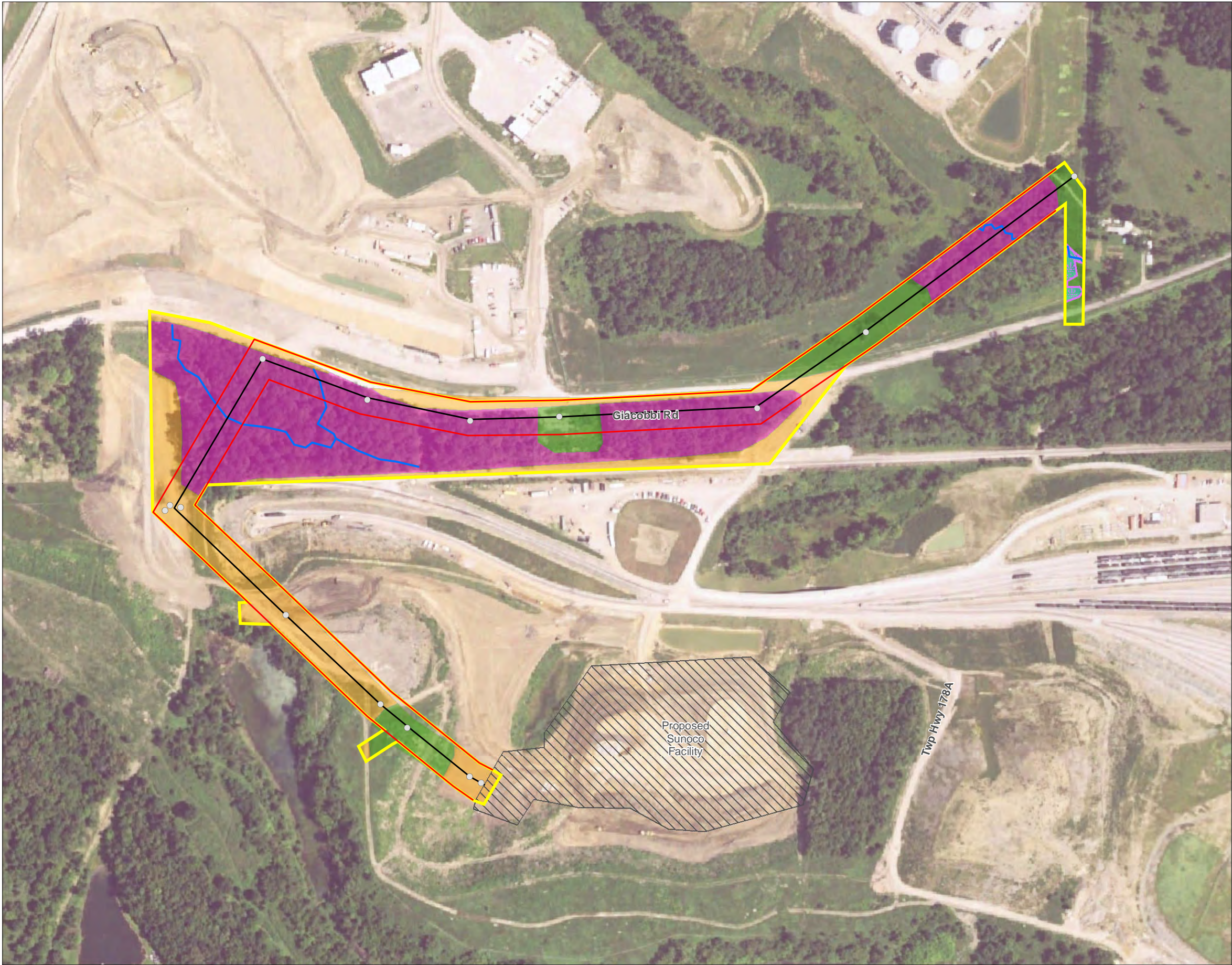


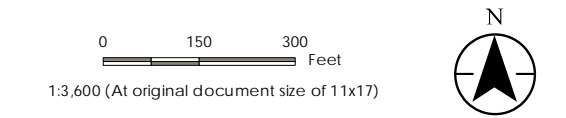
Figure No.
3

Title
Habitat Assessment Map

Client/Project
American Electric Power
Rexford 138kV Line Extension Project

Project Location
T10N, R4W, S21
Harrison Co., OH

193704100
Prepared by MCP on 2015-11-23
Technical Review by MP on 2015-11-24
Independent Review by DJG on 2015-11-24



Legend

- Study Area
- 100ft ROW
- Proposed Pole Location
- Proposed 138kV Transmission Line
- Proposed Sunoco Facility
- Field Delineated Stream
- Field Delineated Wetland

Habitat Type

- Industrial
- Mesophytic Forest
- Old Field/Early Successional
- Wetland

*No parks, wildlife management areas or nature preserves were identified within the Project Area or its vicinity. (Sources: ODNR, USFS, USFWS, The Nature Conservancy, PADUS)



- Notes
- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 - Data Sources Include: Stantec, AEP, NADS
 - Orthophotography: 2015 NAIP



Appendix B Agency Correspondence



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife

Ray Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

November 17, 2015

Jesse Binau
Stantec Consulting, Inc.
11687 Lebanon Rd.
Cincinnati, OH 45241

Dear Mr. Binau,

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Rexford 138 kV Line Extension project area, including a one mile radius, in Green Township, Harrison County, Ohio. We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area.

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

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

Sincerely,

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

Debbie Woischke
Ohio Natural Heritage Database Program



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate

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

December 2, 2015

Jesse Binau
Stantec
11687 Lebanon Road
Cincinnati OH 45241-2012

Re: 15-710; Request for Environmental Review, AEP Rexford 138 kV Line Extension Project, Harrison County, Ohio

Project: The proposed project involves the construction of an approximate one mile extension to an existing 138 kV transmission line.

Location: The proposed project is located in Archer Township, Harrison County, Ohio.

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

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

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

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

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

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

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

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

The project is within the range of the black bear (*Ursus americanus*), a state endangered species. Due to the mobility of this species, this project is not likely to impact this species.

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

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

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

From: susan_zimmermann@fws.gov [mailto:susan_zimmermann@fws.gov] **On Behalf Of** Ohio, FW3
Sent: Thursday, December 03, 2015 12:04 PM
To: Binau, Jesse
Subject: AEP Rexford 138kV Line Extension Project, Harrison Co. OH



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



TAILS# 03E15000-2016-TA-0258

Dear Mr. Binau,

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

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

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

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project

be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson". The signature is fluid and cursive, with the first name "Dan" being more prominent than the last name "Everson".

Dan Everson

Field Office Supervisor

Appendix C Representative Photographs

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 1. View of Stream S01MK (eastern stream crossing). Photograph taken facing upstream/north.



Photograph 2. View of Stream S01MK (eastern stream crossing). Photograph taken facing downstream/south.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 3. View of Stream S01MK (western stream crossing). Photograph taken facing upstream/southwest.



Photograph 4. View of Stream S01MK (western stream crossing). Photograph taken facing downstream/southeast.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 5. View of Stream S02MK. Photograph taken facing upstream/west.



Photograph 6. View of Stream S02MK. Photograph taken facing downstream/east.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 7. View of Stream S03MK. Photograph taken facing upstream/north.



Photograph 8. View of Stream S03MK. Photograph taken facing downstream/south.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 9. View of Wetland W01MKA. Photograph taken facing north.



Photograph 10. View of old field/early successional habitat north of Giacobbi Road. Photograph taken facing east.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 11. View of mesophytic (deciduous hardwood) forest habitat. Photograph taken facing south.



Photograph 12. View of mesophytic (deciduous hardwood) forest habitat. Photograph taken facing north.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 13. View of an existing corridor within the mesophytic (deciduous hardwood) forest habitat. Photograph taken facing west.



Photograph 14. View of a potential bat roost tree within the mesophytic (deciduous hardwood) forest habitat. Photograph taken facing south.

American Electric Power
Rexford 138 kV Line Extension Project
Harrison County, Ohio



Photograph 15. Representative view of industrial land. Photograph taken facing northwest.



Photograph 16. Representative view of industrial land. Photograph taken facing southeast.

Appendix D Data Forms

- D.1 WETLAND DETERMINATION DATA FORMS
- D.2 ORAM DATA FORMS
- D.3 HHEI DATA FORMS

Project/Site: Rexford 138kV Line Extension Project		Stantec Project #: 193704100	Date: 11/17/15
Applicant: American Electric Power		Investigator #1: M. Kearns	Investigator #2: A. Sjollesma
Soil Unit: Melvin silt loam, ponded		NWI/WWI Classification: --	County: Harrison
Landform: Toeslope		Local Relief: Concave	State: Ohio
Slope (%): 1		Latitude: 40.333046	Longitude: 80.931367
Datum: --		Wetland ID: W01MKA	Sample Point: W1
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Are normal circumstances present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: PEM
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Section: 21
Remarks:		Township: 10N	Range: 4 Dir: W

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present <input type="checkbox"/>):		Secondary:
Primary: <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input checked="" type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input checked="" type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D3 - Shallow Aquitard <input type="checkbox"/> D4 - Microtopographic Relief <input type="checkbox"/> D5 - FAC-Neutral Test

Field Observations: Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.) Water Table Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Depth: 8 (in.) Saturation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Depth: 0 (in.)	Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	---

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

Remarks:

SOILS

Map Unit Name: Melvin silt loam, ponded	Series Drainage Class: poorly drained
Taxonomy (Subgroup): mesic Typic Fluvaquents	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Mottles			Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)	%		Color (Moist)	%				
0	8	1	10YR	3/2	85	5YR	4/6	7.5	C	PL	silty clay loam
0	8	1	10YR	3/2	85	5YR	4/6	7.5	C	M	silty clay loam
8	20	2	10YR	3/2	93	7.5YR	4/6	7	C	M	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input type="checkbox"/>):		Indicators for Problematic Soils ¹
<input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix	<input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input checked="" type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147) <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

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

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

Remarks:

Project/Site: **Rexford 138kV Line Extension Project**

Wetland ID: **W01MKA**

Sample Point **W1**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

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

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

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

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Juncus effusus</i>	30	Y	FACW
2.	<i>Scirpus atrovirens</i>	10	N	OBL
3.	<i>Leersia oryzoides</i>	85	Y	OBL
4.	<i>Epilobium coloratum</i>	15	N	FACW
5.	<i>Typha angustifolia</i>	5	N	OBL
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		145		

Woody Vine Stratum (Plot size: 30 ft radius)

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

Remarks:

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp. _____

FACW spp. _____

FAC spp. _____

FACU spp. _____

UPL spp. _____

Total _____ (B)

Hydrophytic Vegetation Indicators:
☒ Yes ☐ No Rapid Test for Hydrophytic Vegetation

☒ Yes ☐ No Dominance Test is > 50%

☒ Yes ☐ No Prevalence Index is ≤ 3.0 *

☐ Yes ☐ No Morphological Adaptations (Explain) *

☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

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

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

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

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

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

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Rexford 138kV Line Extension Project		Stantec Project #: 193704100		Date: 11/17/15
Applicant: American Electric Power				County: Harrison
Investigator #1: M. Kearns		Investigator #2: A. Sjollesma		State: Ohio
Soil Unit: Keene silt loam, 3 to 8% slopes		NWI/WWI Classification: --		Wetland ID: W01MKA
Landform: Toeslope		Local Relief: Linear		Sample Point: U1
Slope (%): 3		Latitude: 40.33348 Longitude: -80.931339 Datum: --		Community ID: Upland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Section: 21
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?				Township: 10N
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Range: 4 Dir: W

SUMMARY OF FINDINGS

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

Remarks:

HYDROLOGY

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

<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D3 - Shallow Aquitard <input type="checkbox"/> D4 - Microtopographic Relief <input type="checkbox"/> D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: -- (in.) Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: -- (in.) Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: -- (in.)	Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---

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

Remarks:

SOILS

Map Unit Name: Keene silt loam, 3 to 8% slopes	Series Drainage Class: moderately well drained
Taxonomy (Subgroup): mesic Aquic Hapludalfs	

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

Top Depth	Bottom Depth	Horizon	Matrix		Mottles		Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)	%	Color (Moist)	%			
0	7	1	5YR	4/4	100	--	--	--	clay loam
7	17	2	7.5YR	3/4	100	--	--	--	clay loam
17	21	3	5YR	4/6	100	--	--	--	clay loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present <input checked="" type="checkbox"/>): <input type="checkbox"/> A1 - Histosol <input type="checkbox"/> A2 - Histic Epipedon <input type="checkbox"/> A3 - Black Histic <input type="checkbox"/> A4 - Hydrogen Sulfide <input type="checkbox"/> A5 - Stratified Layers <input type="checkbox"/> A10 - 2 cm Muck (LRR N) <input type="checkbox"/> A11 - Depleted Below Dark Surface <input type="checkbox"/> A12 - Thick Dark Surface <input type="checkbox"/> S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> S4 - Sandy Gleyed Matrix			<input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions			<input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, MLRA 136) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 148) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147)			Indicators for Problematic Soils ¹ <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)		
--	--	--	---	--	--	--	--	--	--	--	--

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

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

Project/Site: **Rexford 138kV Line Extension Project**

Wetland ID: **W01MKA** Sample Point **U1**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

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

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

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

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Trifolium pratense</i>	90	Y	FACU
2.	<i>Setaria pumila</i>	5	N	FAC
3.	<i>Phleum pratense</i>	5	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		

Woody Vine Stratum (Plot size: 30 ft radius)

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

Remarks:

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>0</u>	x 2 =	<u>0</u>
FAC spp.	<u>5</u>	x 3 =	<u>15</u>
FACU spp.	<u>95</u>	x 4 =	<u>380</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 100 (A) 395 (B)

Prevalence Index = B/A = 3.950
Hydrophytic Vegetation Indicators:

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

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

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

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

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

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

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

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

Instructions

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

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

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

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

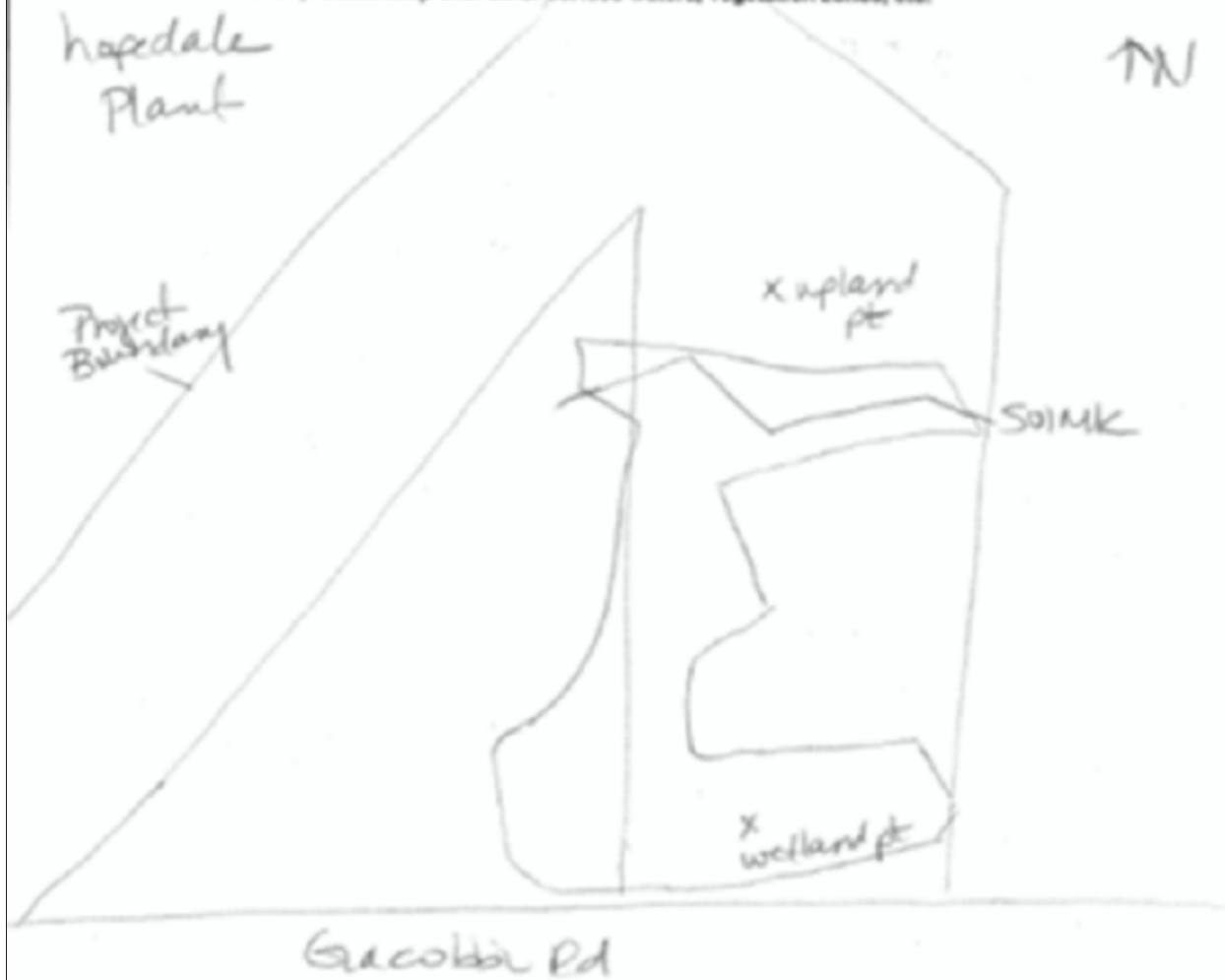
Background Information

Name:	Michelle Kearns
Date:	11/17/2015
Affiliation:	Stantec
Address:	1500 Lake Shore Drive, Columbus, OH 43204
Phone Number:	614-486-4383
e-mail address:	Michelle.Kearns@Stantec.com
Name of Wetland:	W01MKA
Vegetation Communit(ies):	Palustrine Emergent
HGM Class(es):	Depression
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
Lat/Long or UTM Coordinate	40.333199, -80.931364
USGS Quad Name	Cadiz
County	Harrison
Township	10N
Section and Subsection	21, R4W
Hydrologic Unit Code	Upper Ohio 05030106
Site Visit	11/17/2015
National Wetland Inventory Map	Yes
Ohio Wetland Inventory Map	No
Soil Survey	NRCS Harrison County
Delineation report/map	Environmental Features Inventory Report Figure 4

Name of Wetland: W01MKA

Wetland Size (acres, hectares): 0.11

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



Comments, Narrative Discussion, Justification of Category Changes:

Final score : 30

Category: 2

Scoring Boundary Worksheet

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

W01MKA, Rexford 138 kV Line

Michelle Kearns

11/17/2015

#	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Narrative Rating

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

W01MKA, Rexford 138 kV Line

Michelle Kearns

11/17/2015

#	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 <input type="checkbox"/> Wetland should be evaluated for possible Category 3 status Go to Question 2	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 3	NO <input checked="" type="checkbox"/> Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES <input type="checkbox"/> Wetland is a Category 3 wetland Go to Question 4	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland is a Category 3 wetland Go to Question 5	NO <input checked="" type="checkbox"/> Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES <input type="checkbox"/> Wetland is a Category 1 wetland Go to Question 6	NO <input checked="" type="checkbox"/> Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES <input type="checkbox"/> Wetland is a Category 3 wetland Go to Question 7	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland is a Category 3 wetland Go to Question 8a	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 8b	NO <input checked="" type="checkbox"/> Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES <input type="checkbox"/> Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Go to Question 9b	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland should be evaluated for possible Category 3 status Go to Question 10	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Go to Question 9d	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland is a Category 3 wetland Go to Question 10	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland should be evaluated for possible Category 3 status Go to Question 10	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 11	NO <input checked="" type="checkbox"/> 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 <input type="checkbox"/> Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO <input checked="" type="checkbox"/> Complete Quantitative Rating

Table 1. Characteristic plant species.

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

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

Site: W01MKA, Rexford 138 kV Line

Rater(s): Michelle Kearns

Date: 11/17/2015

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

5	6
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

11	17
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

8	25
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

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

25
subtotal this page

Site: W01MKA, Rexford 138 kV Line	Rater(s): Michelle Kearns	Date: 11/17/2015
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25

subtotal first page

0	25
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

5	30
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

30

End of Quantitative Rating. Complete Categorization Worksheets.

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 <input type="checkbox"/> Wetland is categorized as a Category 3 wetland	NO <input checked="" type="checkbox"/>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES <input type="checkbox"/> Wetland should be evaluated for possible Category 3 status	NO <input checked="" type="checkbox"/>	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 <input type="checkbox"/> Wetland is categorized as a Category 1 wetland	NO <input checked="" type="checkbox"/>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES <input checked="" type="checkbox"/> Wetland is assigned to the appropriate category based on the scoring range	NO <input type="checkbox"/>	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 <input checked="" type="checkbox"/> Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO <input type="checkbox"/>	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES <input type="checkbox"/> Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO <input checked="" type="checkbox"/> 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 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

End of Ohio Rapid Assessment Method for Wetlands.



Primary Headwater Habitat Evaluation Form

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

59

SITE NAME/LOCATION **Rexford 138 kV Line Extension Project/Harrison County, Ohio**

SITE NUMBER **S01MK** RIVER BASIN **-- Ohio (Upper)** DRAINAGE AREA (mi²) **<1**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.33334** LONG. **-80.93135** RIVER CODE **--** RIVER MILE **--**

DATE **11/17/15** SCORER **M. Kearns** COMMENTS **Intermittent**

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

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="10%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="10%"/>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="45%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="35%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0.00%** (A)

Substrate Percentage Check **100%** (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15** TOTAL NUMBER OF SUBSTRATE TYPES: **4**

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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (centimeters): **20**

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

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS AVERAGE BANKFULL WIDTH (meters): **1.00**

HHEI Metric Points

Substrate Max = 40

19

A + B

Pool Depth Max = 30

25

Bankfull Width Max=30

15

This information must also be completed

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

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank) Wide >10m		(Most Predominant per Bank) Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture		Mining or Construction	

COMMENTS

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

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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: Distance from Evaluated Stream

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

USGS Quadrangle Name: Cadiz NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Township / City: Jewett

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/12/15 Quantity: 0.25
Photograph Information:
Elevated Turbidity? (Y/N): N 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:

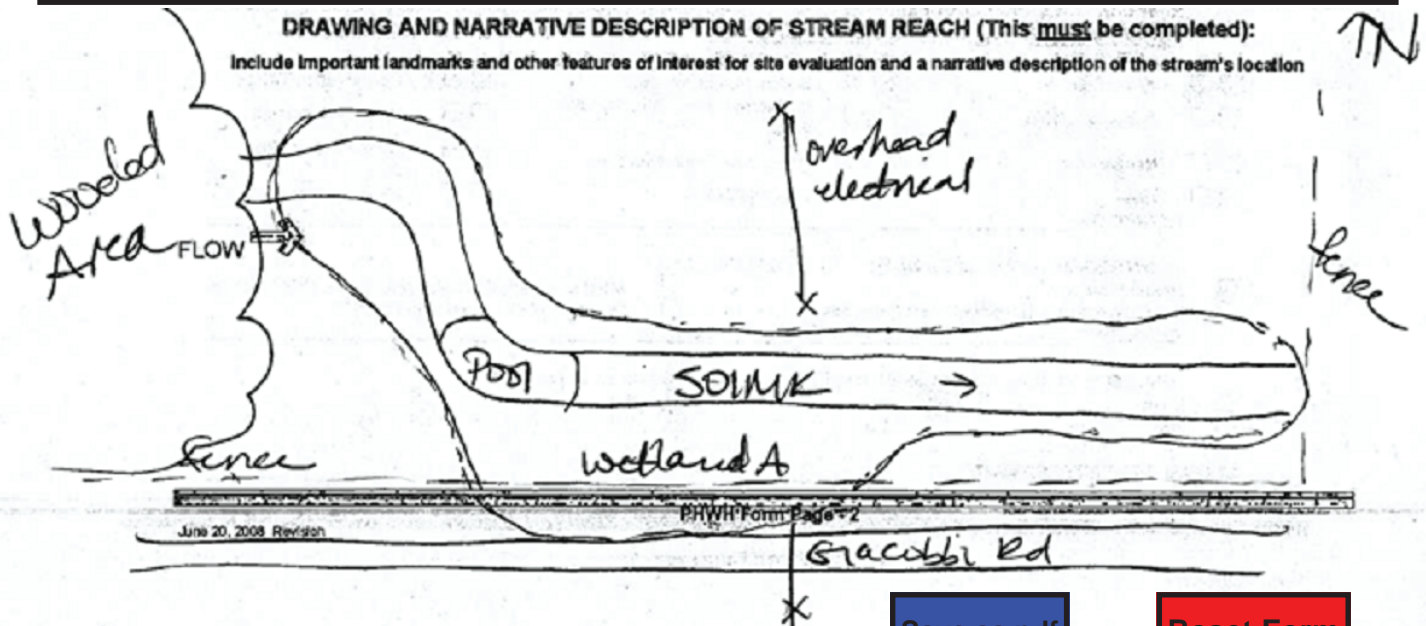
Additional comments/description of pollution impacts:

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include 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



Save as pdf

Reset Form



Primary Headwater Habitat Evaluation Form

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

32

SITE NAME/LOCATION **Rexford 138 kV Line Extension Project/Harrison County, Ohio**

SITE NUMBER **S02MK** RIVER BASIN **-- Ohio (Upper)** DRAINAGE AREA (mi²) **<1_**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.33204** LONG. **-80.93986** RIVER CODE **--** RIVER MILE **--**

DATE **11/17/15** SCORER **M. Kearns** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="5%"/>	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="55%"/>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="40%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **5.00%**

(A)

Substrate Percentage Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9**TOTAL NUMBER OF SUBSTRATE TYPES: **3**

HHEI Metric Points

Substrate Max = 40

12

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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (centimeters): **0**

Pool Depth Max = 30

0

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

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS AVERAGE BANKFULL WIDTH (meters): **1.50**

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH

L	R	(Per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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)



Primary Headwater Habitat Evaluation Form

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

32

SITE NAME/LOCATION **Rexford 138 kV Line Extension Project/Harrison County, Ohio**

SITE NUMBER **S03MK** RIVER BASIN **-- Ohio (Upper)** DRAINAGE AREA (mi²) **<1**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.33219** LONG. **-80.93936** RIVER CODE **--** RIVER MILE **--**

DATE **11/17/15** SCORER **M. Kearns** COMMENTS **Ephemeral**

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

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="20%"/>	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="45%"/>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="35%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **20.00%**

(A)

Substrate Percentage Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9**TOTAL NUMBER OF SUBSTRATE TYPES: **3**

HHEI Metric Points

Substrate Max = 40

12

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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters): **8**

Pool Depth Max = 30

15

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

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters): **1.00**

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH

L	R	(Per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input type="checkbox"/> Flat to Moderate	<input checked="" type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 ft/100 ft)
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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: Distance from Evaluated Stream

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

USGS Quadrangle Name: **Cadiz** NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Harrison** Township / City: **Jewett**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **11/12/15** Quantity: **0.25**
Photograph Information:
Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**
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:

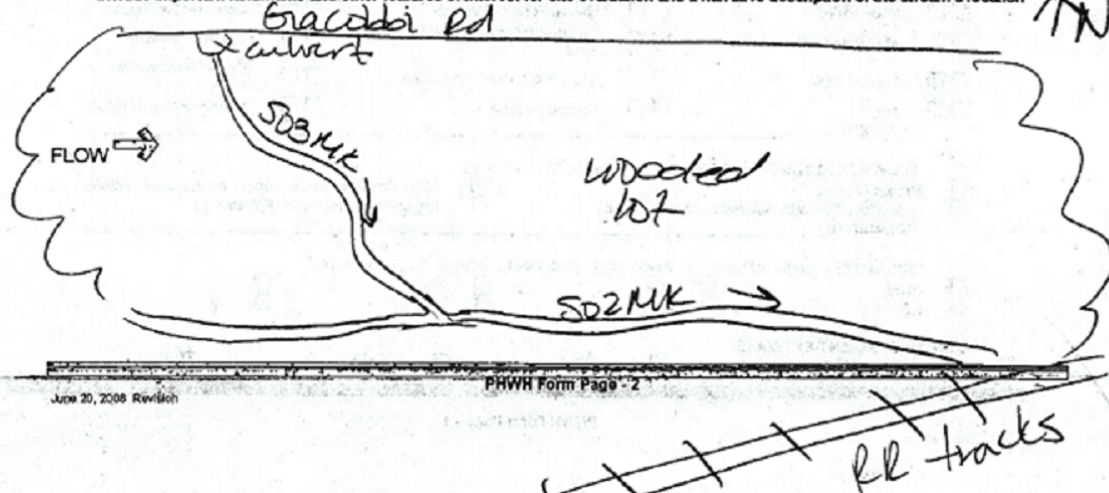
Additional comments/description of pollution impacts:

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include 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



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/18/2015 4:25:17 PM

in

Case No(s). 15-2036-EL-BLN

Summary: Letter of Notification -Part 2 electronically filed by Mr. Matthew J Satterwhite on behalf of AEP Ohio Transmission Company