



Legal Department

Chairman Andre T. Porter
Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio 43215

June 2, 2015

**Re: Letter of Notification for the Scippo Extension and Scioto Trail –
Circleville Project, Case No. 15-0357-EL-BLN**

Ajay Kumar
Regulatory Services
(614) 716-2959
(614) 716-2950 (F)
akkumar@aep.com

Dear Chairman Porter:

In accordance with rules 4906-5-02(A) and 4906-11-01, Ohio Administrative Code ("OAC"), AEP Ohio Transmission Company ("AEP Ohio Transco") submits this letter of notification for expedited approval. The expedited processing fee will be submitted under separate cover. Construction of the project is scheduled to begin in July 2015 and the project is scheduled to be placed in-service in late 2017.

As required by rule 4906-11-01(D), O.A.C., AEP Ohio Transco has submitted a copy of the enclosed letter of notification to the chief executive officer of each municipal corporation and county and the head of each public agency charged with protecting the environment or of planning land use in the area in which the proposed project will be located. Attached to the letter of notification are copies of the letters that have been submitted.

Should you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/ Ajay Kumar
Ajay Kumar

Attachments

**LETTER OF NOTIFICATION FOR THE
SCIPPO EXTENSION AND
SCIOTO TRAIL – CIRCLEVILLE PROJECT**

Case No. 15-0357-EL-BLN

Submitted pursuant to OAC 4906-11-01

**AEP Ohio Transmission Company
(AEP Ohio Transco)**

June 2015

LETTER OF NOTIFICATION

Scippo Extension and Scioto Trail – Circleville Project

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is providing the following information in accordance with the procedures delineated in Ohio Administrative Code (OAC) Section 4906-11-01: Letter of Notification (LON) Requirements of the Rules and Regulations of the Ohio Power Siting Board (OPSB).

4906-11-01(B) GENERAL INFORMATION

- 1. The name of the project and applicant's reference number, if any, names and reference numbers(s) of resulting circuits and a brief description of the project, and why the project meets the requirements of a letter of notification.**

AEP Ohio Transco is proposing to construct two overhead 138 kilovolt (kV) electric transmission lines, the Scippo Extension and Scioto Trail–Circleville -Line. The length of the Scippo 138 kV Extension is 0.85 miles, and the Scioto Trail–Circleville 138 kV Line is 2.42 miles. Although these are two distinct transmission lines, they are connected from an engineering and geographic perspective, and are therefore combined in this LON document. Exhibit 1 is a partial copy of the United States Geological Survey (USGS) Circleville, Ohio 7.5-minute topographic map (USGS, 1975), and shows the general location of the Project. Exhibit 2 provides an aerial photograph of the Project area showing the proposed route and existing lines.

The purpose of the proposed Project is to correct existing system issues, which are further described in the following section. PJM has confirmed that this Project corrects the cited violations, and has decided to make this a mandatory Project for AEP Ohio Transco to complete.

The existing double circuit Scippo 138 kV Extension is being rebuilt using galvanized, tubular steel structures, (6) 1590 kcm ACSR 54/19 Falcon conductors and (2) 7#8 Alumoweld shield wires. This rebuild includes a 0.85-mile relocation with a new 100-foot right-of-way.

The existing single circuit Scioto Trail–Circleville 138 kV Line is being rebuilt using galvanized, tubular steel structures, (3) 1590 kcm ACSR 54/19 Falcon conductors and (2) 7#8 Alumoweld shield wires.

The proposed structures will be approximately 70 to 100 feet tall. The Project will require a 100-foot wide permanent ROW.

The Scippo Extension line falls under Item (1)(d) of the Interim Application Requirement Matrix for Electric Power Transmission Lines, in Appendix A of OAC 4906-1-01. This section of the OAC states that an applicant may use the LON process if the Project is:

(1) Rerouting or extension or new construction of single or multiple circuit electric power transmission line(s) as follows:

(d) Line(s) one hundred twenty-five kV and above, but less than three hundred kV, and greater than 0.2 miles in length but not greater than two miles in length.

The Scioto Trail-Circleville line falls under Item (4)(a) of the Interim Application Requirement Matrix for Electric Power Transmission Lines, in Appendix A of OAC 4906-1-01. This section of the OAC states that an applicant may use the LON process if the Project is:

(4) Replacing electric power transmission line structure(s) with a different type of structure(s) or adding structure(s) within an existing electric power transmission line and:

(a) Two miles or less of new right-of-way required.

The Project presented in this LON fulfills these conditions. The Scioto Trail-Circleville is a rebuild of 2.42 miles for which new right-of-way is not required. The Scippo Extension is a rebuild that requires 0.85 miles of new right of way. The Project meets the need requirements described in #2 of the General Information section of this document.

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

As part of the 2017 RTEP process, PJM identified several N-1-1 contingency violations requiring upgrades to remediate. These violations include:

- a. Loading above 100 percent of emergency capability on Delano-Scioto Trail 138 kV branch and Scioto Trail-Scippo 138 kV branch
- b. Voltages below 92 percent at Circleville Station, Delano Station, East Scippo Switch Station, Ross Station, Scioto Trail Station, Scippo Station, Clayburne Switch Station, Biers Run Station, Hopetown Station, and Seaman Station.

- c. Voltage drops exceeding 8 percent at Adams Station, Circleville Station, Delano Station, East Scippo Station, Ross Station, Scioto Trail Station, Scippo Station, Clayburne Switch Station, Biers Run Station, and Seaman Station.

To correct these violations, AEP Ohio Transco proposed a new Project to upgrade the entire 138 kV through path from Harrison Station in southern Columbus to Ross Station in Chillicothe including the rebuild of all existing 138 kV lines along this circuit path. The larger proposed Project includes this Scippo Extension and Scioto Trail–Circleville Project. PJM confirmed this Project corrects the cited violations, decided to make this a mandatory Project, and assigned AEP Ohio Transco to make the required changes.

3. The location of the project in relation to existing or proposed lines and stations shown on maps and overlays provided to the public utilities commission of Ohio in the applicant's most recent long-term forecast report.

The location of the Project in relation to existing or proposed lines and stations shown on maps and overlays is provided in Exhibit 2. The Project crosses five existing electric transmission lines.

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

Due to the location of the existing substations, transmission lines, and dense development of the surrounding area, no significant alternatives were studied as part of this Project. Small-scale alternatives were considered in order to reduce environmental impact and to meet engineering needs.

5. The anticipated construction schedule and proposed in-service date of project.

Construction of this Project is scheduled to begin in July 2015 with a proposed in-service date of late 2017.

6. An area map of not less than 1:24,000-scale clearly depicting the facility's centerline with clearly marked streets, roads, and highways, and clearly written instructions for locating and viewing the facility.

Exhibit 2 is a map depicting the general location of the Project site. To locate and view the Project site from the Columbus, Ohio area, drive on I-71 S for approximately 5 miles. Take Exit 101 for I-270 toward Wheeling/Dayton. Keep left at the fork, follow signs for I-270/Wheeling, and merge onto I-270 E (stay on I-270 E for 2 miles). Take Exit 52 to merge onto US-23 S toward Circleville. Continue on US-23 S for 21.5 miles and arrive at Circle Ln on your left.

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

AEP Ohio Transco is currently working with landowners along the proposed ROW to obtain the necessary easements.

Table 1: Property Owner Information

Parcel #	Owner(s)	Easement Obtained
Scioto Trail - Circleville		
A0100010037000	G6 FARMS LLC	Yes (Existing Right of Way)
A0100010037200	RICHARDS LAND CO	Yes (Existing Right of Way)
A0501510002001	NICHOLS J DONALD & LEIGH ROBERTS	Yes (Existing Right of Way)
A0501510002000	ALDI INC	Yes (Existing Right of Way)
A0501510001900	RCG CIRCLEVILLE LLC	Yes (Existing Right of Way)
A0501510001800	CIRCLEVILLE ABC, LLC	Yes (Existing Right of Way)
A0501510001000	TRACTOR SUPPLY COMPANY	Yes (Existing Right

		of Way)
A0501510000500	BRICKER PROPERTIES LLC	Yes (Existing Right of Way)
A0501510000201	COUGHLIN PROPERTIES OF CIRCLEVILLE	Yes (Existing Right of Way)
A0501510000308	COUGHLIN AUTOMOTIVE PROPERTIES OF CIRCLEVILLE	Yes (Existing Right of Way)
A0501510000310	MEAD EMPLOYEES CREDIT UNION	Yes (Existing Right of Way)
A0501510000307 A0501510000306 A0501510000309 A0501510000305	CHESAPEAKE REALTY DEVELOPMENT CORP	Yes (Existing Right of Way)
A3400010029908	NOOR ENTERPRISES INC	Yes (Existing Right of Way)
A3400010030500	LANGFAN REALTY LLC	Yes (Existing Right of Way)
A3400010029909 A3400010029913	NOE LARRY D PROPERTIES INC	Yes (Existing Right of Way)
A3400010030400	STRADA CORPORATION C/ O BARRISTER'S INC	Yes (Existing Right of Way)
A3400010030300	BAGSHAW HOLDINGS & INVESTMENTS	Yes (Existing Right of Way)
Scippo Extension		
A0501510000305	CSX	Permit not obtained
A0300010029501 A0501510001700	IRG Circleville, LLC & US 23 Circleville, LLC	No

(C) TECHNICAL FEATURES OF THE PROJECT

1. Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

AEP Ohio Transco will design and construct the new transmission line for 138 kV operations. Additional details are included in Section 4906-11-02 (B)(1). Reference drawings are available in Exhibit 3. The transmission line has the following characteristics:

Voltage:	138 kV
Conductor:	1590 kcm ACSR 54/19 Falcon
Shield Wire:	7#8 Alumoweld

Structure types (Scippo Extension)

Structure 1:	Double circuit braced post
Structure 2:	2-pole deadend

Structure types (Scioto Trail – Circleville)

Structure 1:	H-frame
Structure 2:	3-pole structure (running angle and deadends)
Structure 3:	1-pole structure (running angle and deadends)

2. For electric power transmission lines, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

(a) Calculated Electric and Magnetic Field Levels

The following table was calculated using EPRI's EMF Workstation 2013 computer program.

TABLE 2. EMF CALCULATIONS

Condition	Load		Ground Clear. (feet)	Electric Field (kV/m) ^a	Magnetic field (mG) ^a	
	S (MVA)	I(A)				
Circleville 138kV Line, Scioto Trail—Scippo 138 kV – Lateral Profile on the single Ckt Portion						
(1) Normal Max. Loading ^b	70	291	32	0.64 / 1.28 / 0.64	16 / 50 / 16	
(2) Emergency Loading ^c	185	772	32	0.64 / 1.28 / 0.64	42 / 133 / 44	
(3) WN Conductor Rating ^d	493	2063	23	0.67 / 2.29 / 0.67	133 / 632 / 138	
Circleville 138kV Line, Circleville—Scippo 138 kV – Lateral Profile on the single Ckt Portion						
(1) Normal Max. Loading ^b	66	277	32	0.64 / 1.28 / 0.64	15 / 48 / 16	
(2) Emergency Loading ^c	181	758	32	0.64 / 1.28 / 0.64	41 / 131 / 43	
(3) WN Conductor Rating ^d	493	2063	23	0.67 / 2.29 / 0.67	133 / 632 / 138	
Scippo Extension 138kV – Lateral Profile on the Double Ckt portion of both circuits						
(1) Normal Max. Loading ^b	Ckt1	70	291	32	0.12 / 2.04 / 0.12	2 / 13 / 3
	Ckt2	66	277			
(2) Emergency Loading ^c	Ckt1	185	772	32	0.12 / 2.04 / 0.12	7 / 35 / 7
	Ckt2	181	758			
(3) WN Conductor Rating ^d	Ckt1	493	2063	23	0.08 / 3.36 / 0.08	24 / 226 / 24
	Ckt2	493	2063			
IEEE Std C95.6-2002 Limits						
---	---		---	5.0/10.0/5.0	9040/ -- ^e /9040	

a EMF levels (left ROW edge/maximum/right ROW edge) calculated one meter above ground assuming balanced currents and nominal voltages. ROW width is 50 feet (left) and 50 feet (right) of centerline, respectively.

b Peak load expected with all system facilities in service; daily/hourly flows fluctuate below this level.

c Maximum current flow during unusual/contingency conditions, which last for short periods of time.

d Maximum current flow that a line, including its terminal equipment, can carry during winter conditions.

e Maximum permissible level in “controlled environment” is 27,100 mG.

Three loading conditions were examined: (1) normal maximum loading, (2) emergency line loading, and (3) winter normal conductor rating. Normal maximum loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in

the foreseeable future. Loading levels and the calculated electric and magnetic fields are summarized in Table 1.

(b) Discussion of the Company's Design Alternatives Regarding EMF Levels

Design alternatives were not considered due to electric and magnetic fields (EMF) and their strength levels. Transmission lines, when energized, generate EMF. Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. However, some people are concerned that EMF have impacts on human health. Due to these concerns, EMF associated with the new circuits was calculated in Table 2 above. The EMF was computed assuming the highest possible EMF values that could exist along the proposed transmission line. Normal daily EMF levels will operate below these maximum load conditions. Based on studies from the National Institutes of Health, the magnetic field (measured in milliGauss) associated with emergency loading at the highest EMF value for this transmission line, is lower than those associated with normal household appliances like microwaves, electric shavers and hair dryers. For additional information regarding EMF, the National Institute of Health has posted information on their website:

http://www.niehs.nih.gov/health/assets/docs_p_z/results_of_emf_research_emf_questions_answers_booklet.pdf

3. The estimated cost of the project by Federal Energy Regulatory Commission account, unless the applicant is not an electric light company, a gas company or a natural gas company as defined in Chapter 4905 of the Revised Code (in which case, the applicant shall file the capital costs classified in the accounting format ordinarily used by the applicant in its normal course of business).

TABLE 3. ESTIMATES OF APPLICABLE INTANGIBLE AND CAPITAL COSTS		
FERC Account Number	Description	Cost
350	Land and Land Rights	\$779,365.00
352	Structures & Improvement	\$1,302,020.00
353	Substation Equipment	Not Applicable
354	Towers & Fixtures	Not Applicable
355	Poles & Fixtures	\$3,230,903.10

TABLE 3. ESTIMATES OF APPLICABLE INTANGIBLE AND CAPITAL COSTS		
FERC Account Number	Description	Cost
356	Overhead Conductors & Devices	\$1,477,807.43
357	Underground Conductors & Devices	Not Applicable
358	Underground-to-overhead Conversion Equipment	Not Applicable
359	Right-of-way Clearing, Roads, Trails or Other Access	Not Applicable
359.1	Asset Retirement Costs	\$1,146,174.00
	TOTAL	\$7,936,269.53

(D) SOCIOECONOMIC DATA

1. A brief description of land use within the vicinity of the proposed project, including:
 - (a) a list of municipalities, townships and counties affected; and
 - (b) estimates of population density adjacent to rights of way within the study corridor (the U.S. Census information may be used to meet this requirement.)

Land along the proposed ROW consists of the following:

- Existing ROW (12,154 linear feet)
- Agricultural land (1,896 linear feet)
- Open land/Industrial (2,371 linear feet)
- Palustrine emergent (PEM) wetland (578 linear feet)
- Delineated stream (455 linear feet)
- Forest (349 linear feet)
- Road ROW (156 linear feet)
- Scrub-shrub (52 linear feet)

A Project Area Map is provided in Exhibit 2. The Project is located in Circleville and Pickaway Townships, entirely within Pickaway County, Ohio. Based on the U.S. Census Bureau (2015), the 2010 population for Pickaway County was 55,698, 13,314 for the City of Circleville, 2,041 for Pickaway Township, and 2,389 for Circleville Township.

2. **The location and general description of all agricultural land (including agricultural district land) existing at least sixty days prior to submission of the letter of notification within the proposed electric power transmission line right-of-way, or within the proposed electric power transmission substation fenced-in area, or within the construction site boundary of a proposed compressor station.**

The Project crosses 1,896 linear feet of agricultural land. Agricultural fields appear to be planted with soybeans (*Glycine max*) during the growing season. Agricultural production at pole locations will be affected, but crop production can continue between the poles within the ROW.

3. **A description of the applicant's investigation (concerning the presence or absence of significant archaeological or cultural resources that may be located within the area likely to be disturbed by the project), a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.**

CH2M HILL conducted a desktop review for the Project on November 11, 2014, using the Ohio Historic Preservation Office (OHPO) Online Mapping System. The purpose of the review was to locate previously recorded cultural resources within or near the Project. A 1-mile radius was used to identify previous cultural resources investigations, and to provide information on the expected types and locations of sites in the Project vicinity. The archival study included a review of the Ohio Archaeological Inventory (OAI), the Ohio Historic Inventory (OHI), the National Register of Historic Places (NRHP), National Landmarks, the National Register Determination of Eligibility Files (DOE files), historic bridges, and cemeteries.

Documented within the 1-mile radius were 33 archaeological sites, 231 historic structures, 8 NRHP properties, 5 DOE files, 6 cemeteries, and 2 previous cultural resources surveys. Only one cultural resources investigation (Bennett, 1991) appears to be within the Project boundary. A map showing identified cultural resources in the Project area is included as Exhibit 4.

The results of the cultural resources desktop study were incorporated into a letter report that was submitted to the OHPO on May 13, 2015. The purpose of the letter was to coordinate with the OHPO and to provide data on the need for additional cultural resources work (if

any) for the Project. Given the results of the cultural resources desktop study, CH2M HILL anticipates no further cultural resources work for the Project.

- 4. Documentation that the chief executive officer of each municipal corporation and county, and the head of each public agency charged with planning land use in the area in which any portion of the facility is to be located have been notified of the project and have been provided with a copy of the letter of notification. The applicant shall describe the company's public information program used in the siting of the proposed facility. The information submitted shall include either a copy of the material distributed to the public or a copy of the agenda and summary of the meeting(s) held by the applicant.**

Officials of Pickaway County, the City of Circleville, Circleville Township, and Pickaway Township have been contacted regarding the Project. A list of the officials contacted is provided as Exhibit 5, and a copy of the letter as Exhibit 6.

- 5. A brief description of any current or pending litigation involving the project known to the applicant at the time of the letter of notification.**

There is no known current or pending litigation involving this Project.

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

Project activities may temporarily affect wetlands located on the Project site; however, both temporary and permanent wetland impacts will be avoided where practical. Where avoidance is not practical, temporary wetland crossings will be protected with construction matting to prevent impacts to the wetlands. No streams will be crossed for construction. A wetland determination and waterbody assessment report is included in Appendix A.

The Project requires a Storm Water Pollution Prevention Plan (SWPPP) based on the potential to disturb more than 1.0 acre of land during construction. The plan is being developed in accordance with the Ohio Environmental Protection Agency's (Ohio EPA's) National Pollution Discharge Elimination System (NPDES) General Permit OCH000004 – Stormwater Discharges Associated with Construction Activity. A site-specific SWPPP is

currently being drafted and will be provided upon completion. Sediment erosion controls will be installed and maintained in accordance with the best management practices detailed in the Ohio EPA's Rainwater and Land Development Manual.

No additional local, state, or federal preconstruction requirements have been identified for the Project.

(E) ENVIRONMENTAL DATA

- 1. A description of the applicant's investigation concerning the presence or absence of federal or state endangered species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the area likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.**

A written request was submitted to the Ohio Department of Natural Resources (ODNR) to research the presence of rare, threatened, or endangered (RTE) species within the Project area. ODNR responded to this request on November 5, 2014, outlining records of known federal or state RTE species located within a 1.5-mile radius of the Project area.

Additional written information was provided to the ODNR and the U.S. Fish and Wildlife Service (USFWS) regarding field observations of the presence of RTE species and/or their critical habitat. A copy of this correspondence and agency responses are included in Appendix B. A copy of this correspondence and agency responses are included in Appendix B. Standard tree clearing recommendations were provided by USFWS and ODNR.

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

A review of the Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM) 39129C0325J and 39129C0302J indicates the entire Project is outside of the

100-year floodplain. The FEMA FIRM information for the Project area is provided as Exhibit 7.

A wetland and waterbody delineation was conducted for the Project on October 30, 2014, January 27, 2015, and March 11, 2015. The environmental survey corridor of the Project crosses four USGS-mapped streams which are all tributaries of the Scioto River, located immediately west of the survey corridor. CH2M HILL also identified two palustrine emergent wetlands and one palustrine scrub-shrub wetland within the permanent ROW and proposed access roads. No wetlands will be permanently impacted by the Project.

The wetland delineation memorandum in Appendix A discusses the wetlands and waterbodies observed during the wetland and waterbody delineations. AEP Ohio Transco will place poles outside of wetland boundaries, and will not fill or change the contours of any wetland onsite. Access to each pole location will, to the extent practical, avoid crossing through wetlands. Where a wetland crossing cannot be avoided, AEP Ohio Transco will employ construction matting that will be removed following completion of construction.

If necessary, stream crossings will be made by existing access routes where available. Where stream crossings are required, they will be evaluated on a case-by-case basis. Typically, if avoidance is not possible, temporary timber bridges will be utilized for stream crossings during construction. AEP Ohio Transco does not anticipate the need for any stream crossings.

All temporary impacts associated with construction will be restored after construction has been completed.

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

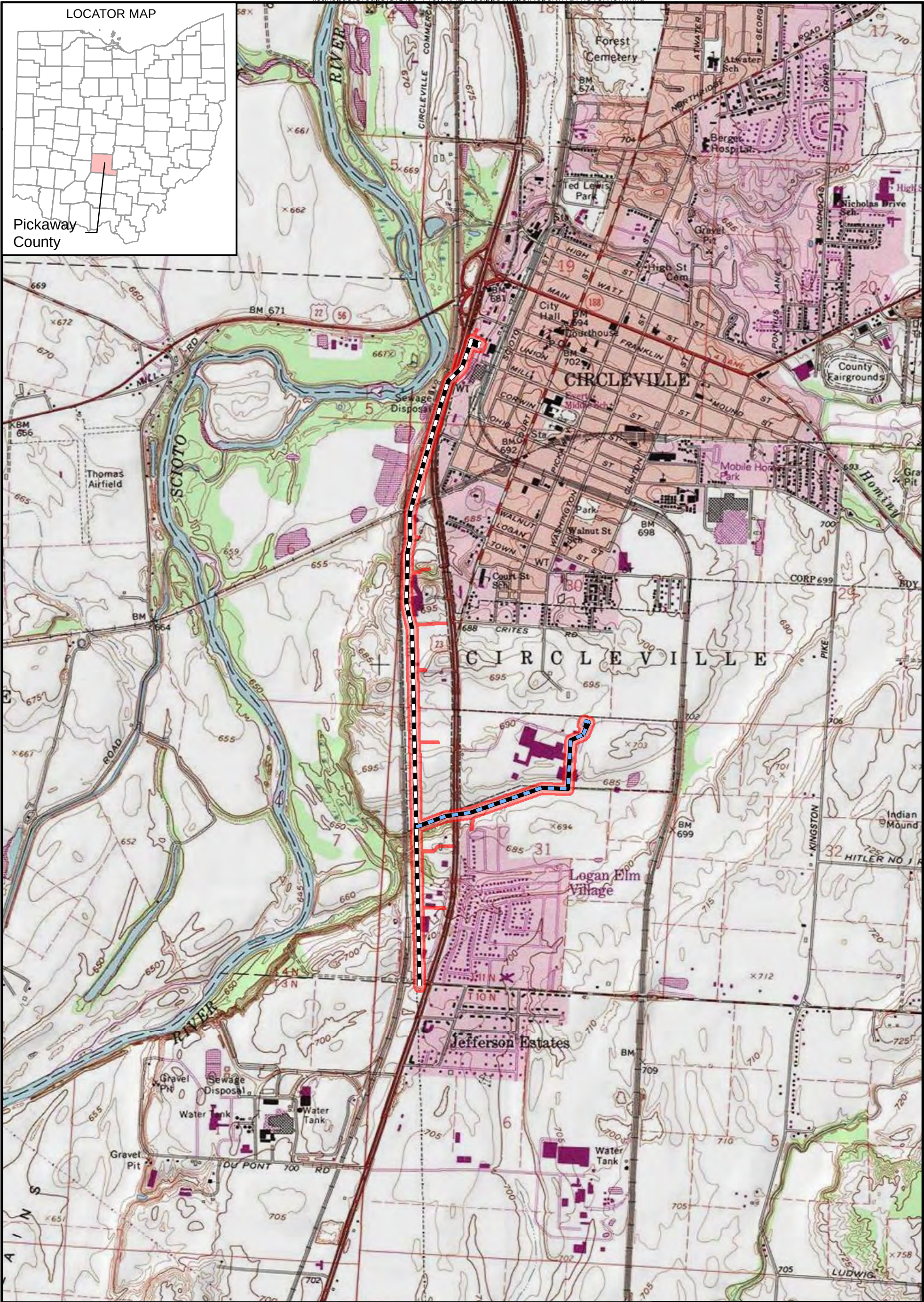
Construction and operation of the proposed Project will be in accordance with the requirements specified in the latest revision of the National Electrical Safety Code, as adopted by the Public Utilities Commission of Ohio, and will meet applicable safety standards established by the Occupational Safety and Health Administration.

REFERENCES

- Bennett, Patrick. 1991. Phase I and II Cultural Resources Survey of the Proposed Scippo Transmission Line and Phase III Investigations at Site 33 PI 479 in Pickaway County, Ohio. Prepared by: Gray & Pape, Inc.
- U.S. Census Bureau. *State and County QuickFacts*. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits. Last Revised Thursday, 05-Feb-2015 13:11:29 EST <http://quickfacts.census.gov/qfd/states/39000.html>. Accessed February 16, 2015.
- U.S. Geological Survey. *Circleville quadrangle, Ohio*. 1:24,000. 7.5 Minute Series. Washington, D.C.: USGS, 1975.

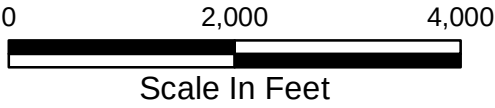
Exhibit 1

USGS Quadrangle



LEGEND:

- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- Survey Corridor



BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Circleville (published 1975)



Scippo Extension/
Scioto Trail - Circleville

FIGURE 1
TOPOGRAPHIC MAP

DATE: 2/10/2015
PN: 652788



Exhibit 2

Aerial Overview



LEGEND:

- Substation
- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- Existing Transmission Line
 - Below 100 kV
 - 138 kV Transmission Line
 - Stream (NHD)

0 1,000 2,000

Scale In Feet

BASE MAP SOURCE:
ESRI World Imagery Service, 2011



Scippo Extension/
Scioto-Trail Circleville

EXHIBIT 2
OVERVIEW MAP

DATE: 4/10/2015
PN: 652788



Exhibit 3

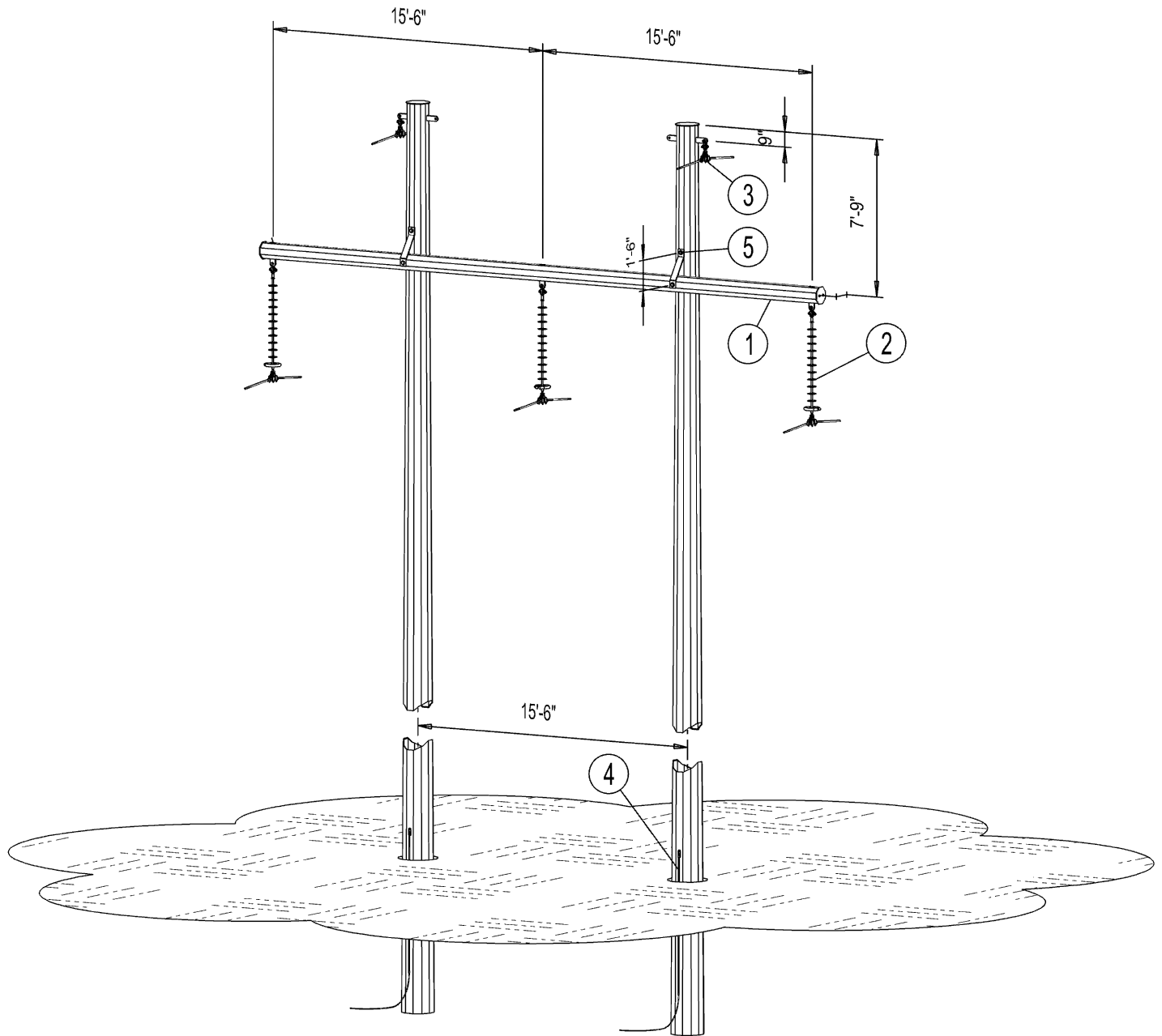
Project Engineering

REF. DRAWINGS				
ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	3	11B2-0007	138KV SUSPENSION INSULATOR,CERAMIC, 25K	
2	1	30T0-1102	OHGW, SUSPENSION, CONCRETE, STEEL OR WOOD POLE	
3	1	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
4	3	71A0-1133	SWINGING ANGLE BRACKET	
5	1	71A0-1231	3/4 IN FLAT DEAD-END TEE	



REF. DRAWINGS

ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	1	74D0-1268	138KV LIGHT SUSPENSION CROSSARM 32 FT - CONCRETE OR STEEL H-FRAME - GALVANIZED	
2	3	11B6-2722	138KV SUSPENSION INSULATOR, POLYMER, 25K, W/CORONA RING	
3	2	30T0-1102	OHGW, SUSPENSION, CONCRETE, STEEL OR WOOD POLE	
4	2	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
5	2	71A0-1359	A325 1IN - HIGH STRENGTH BOLT, CONCRETE, STEEL OR WOOD	

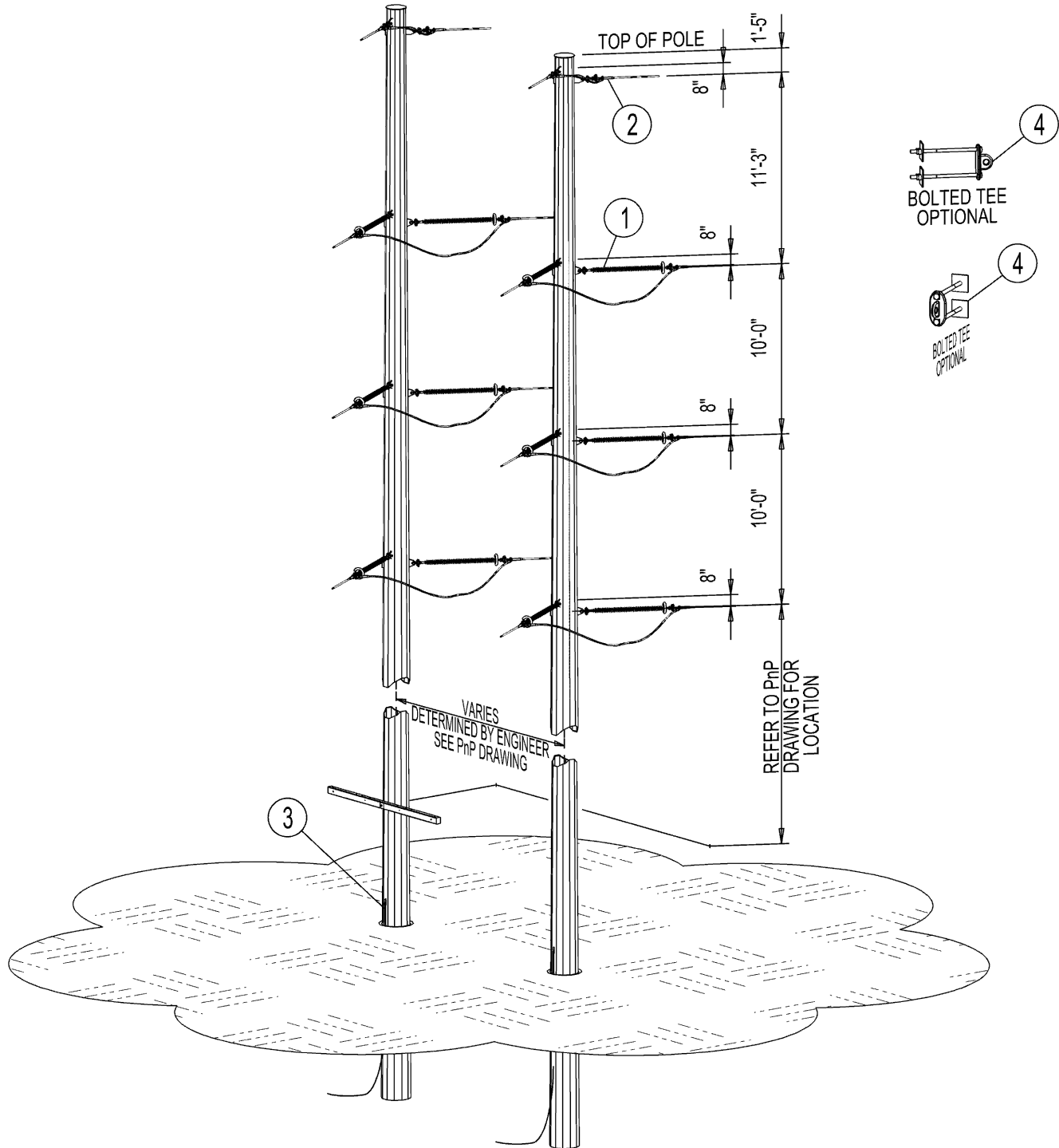


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REV	DESCRIPTION	BY	DATE		TRANSMISSION LINE STANDARDS POLYMER - 138KV LIGHT SUSPENSION W/CORONA RING, H-FRAME, GALVANIZED STEEL		
ENGR:	DRAWN: SAS	CHECKED: McP	APPROVED: JCN		DRAWING No.	SHEET No.	REV. No.
			DATE: 10/23/12		CS45-2468	1	0

REF. DRAWINGS

ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	12	14B6-2743	138KV DEAD END INSULATOR, POLYMER, 25K, W/CORONA RING	
2	4	30D0-1104	OHGW, DEAD-END CONCRETE,STEEL OR WOOD POLE	
3	2	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
4	16	71A0-1231	3/4 IN FLAT DEAD-END TEE	

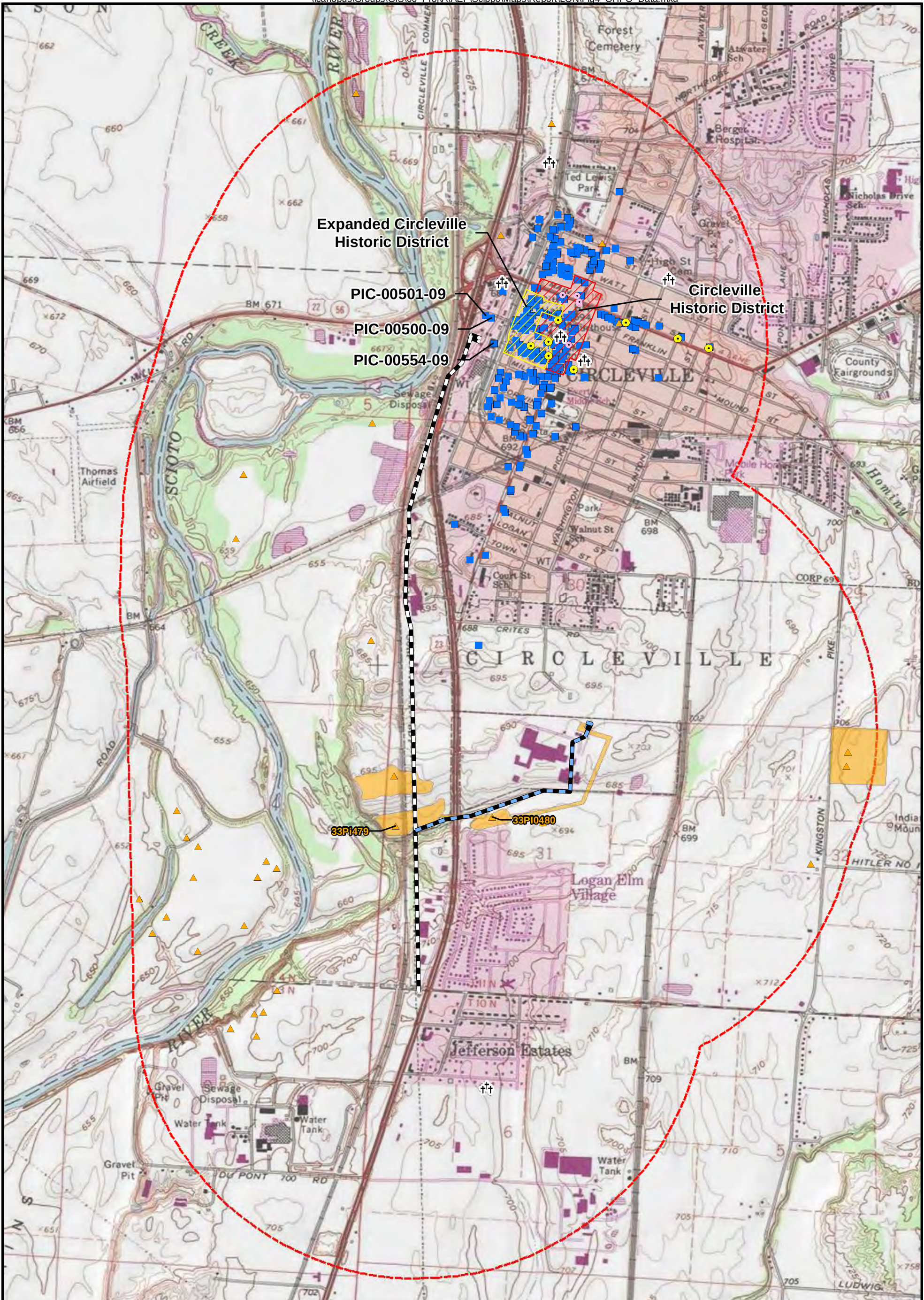


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REV	DESCRIPTION	BY	DATE			TRANSMISSION LINE STANDARDS		
						POLYMER - 138KV DOUBLE CIRCUIT, HEAVY ANGLE DEADEND W/CORONA RING, SELF SUPPORTING, STEEL		
ENGR:				DRAWING No.		DS28-2458		
DRAWN: SAS				APPROVED: JCN		SHEET No. 1		
CHECKED: McP				DATE: 10/30/12		REV. No. 0		

Exhibit 4

Cultural Resources Figure



LEGEND:

- Proposed Sciopo Extension Route
- Scioto Trail-Circleville Route
- 1 Mile Buffer
- NRHP Determination of Eligibility
- OHI Structure
- Cemetery

- Archaeology Site
- NRHP

Label

- Circleville Historic District
- Expanded Circleville Historic District
- Previously Surveyed Area

0 1,000 2,000
Scale In Feet

0 500 1,000
Meters



BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Circleville (published 1975)



Sciopo Extension/
Scioto-Trail Circleville

EXHIBIT 4
MAPPED CULTURAL RESOURCES

DATE: 4/10/2015
PN: 652788



Exhibit 5

List of Officials

EXHIBIT 5: OFFICIALS SERVED COPY OF LON

138 kV Scippo Extension and Scioto Trail – Circleville Project

OPSB CASE NO.: 15-0357-EL-BLN

Pickaway County

Mr. Brian S. Stewart
County Commissioner
139 West Franklin Street
Circleville, Ohio 43113

Mr. Jay H. Wippel
County Commissioner
139 West Franklin Street
Circleville, Ohio 43113

Pickaway County District Library
Mr. Jim Guenther, Director
1160 North Court Street
Circleville, Ohio 43113

The City of Circleville

Mayor Donald R. McIlroy
The City of Circleville
130 S. Court St.
Circleville, OH 43113

Department of Public Services and Planning
Mr. John Ankrom
104 East Franklin Street
Circleville, OH 43113

Circleville Township

Mr. Dale Bower
Circleville Township Trustee
2015 Chippewa Drive
Circleville, Ohio 43113

Mr. Ernest G. Martin
Circleville Township Trustee
3765 Bell Station Road
Circleville, Ohio 43113

Pickaway Township

Mr. Daryl Rittinger
Pickaway Township Trustee
26049 Morris-Salem Road
Circleville, Ohio 43113

Mr. Mark E. Martin
Pickaway Township Trustee
26686 Kingston Pike
Circleville, Ohio 43113

Mr. Sterlin C. Mullins, P.E., P.S.
Pickaway County Engineer
121 West Franklin Street
Circleville, OH 43113

Mr. Terry L. Frazier
Director of Pickaway County
Office of Development and Planning
124 West Franklin Street
Circleville, Ohio 43113

Circleville City Council
Mr. David M. Crawford, President
431 North Court Street
Circleville, Ohio 43113

Mr. Bob Kuhlwein
Circleville Township Trustee
332 Juhl Road
Circleville, Ohio 43113

Mr. Jeffrey Palm
Circleville Township Clerk
915 Stoutsville Pike
Circleville, Ohio 43113

Mr. David Rittinger
Pickaway Township Trustee
29889 St. Rt. 159
Kingston, Ohio 45644

Mr. Brian J. Barr
Pickaway Township Clerk
27905 Caldwell Road
Circleville, Ohio 43113

Exhibit 6

Letters to Officials

May 20, 2015

Pickaway County District Library
Mr. Jim Guenther, Director
1160 North Court Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Guenther:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway County Board of Commissioners
Mr. Brian Stewart
Mr. Jay Wippel
Mr. Harold Henson
139 West Franklin Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Commissioners:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway County Engineer
Mr. Sterlin C. Mullins
121 West Franklin Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Mullins:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway County Office of Planning
Mr. Terry Frazier, Director
124 West Franklin Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Frazier:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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Sincerely,



Brett E. Schmied
Project Outreach Specialist
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Department of Public Services and Planning
Mr. John Ankrom
104 East Franklin Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Ankrom:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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Sincerely,



Brett E. Schmied
Project Outreach Specialist
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Circleville Township Board of Trustees
Mr. Dale E. Bower, Trustee
Mr. Ernest G. Martin, Trustee
Mr. Bob Kuhlwein, Trustee
Mr. Jeffrey R. Palm, Fiscal Officer
2015 Chippewa Drive
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Trustees:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Mayor Don McIlroy
City of Circleville
130 South Court Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mayor McIlroy:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Circleville City Council
Mr. David M. Crawford, President
431 North Court Street
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Crawford:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway Township Trustee
Mr. Daryl Rittinger
26049 Morris-Salem Road
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Rittinger:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway Township Trustee
Mr. Mark E. Martin
26686 Kingston Pike
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Martin:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway Township Trustee
Mr. David Rittinger
29889 State Route 159
Kingston, Ohio 45644

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Rittinger:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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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
AEP Ohio

cc: Curtis Perry, Project Manager

May 20, 2015

Pickaway Township Fiscal Officer
Mr. Brian J. Barr
27905 Caldwell Road
Circleville, Ohio 43113

RE: Letter of Notification
Scippo Extension and Scioto Trail-Circleville Project
Case Number: 15-0357-EL-BLN

Dear Mr. Barr:

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

The proposed Scippo Extension and Scioto Trail-Circleville Project, Ohio Power Siting Board Case Number 15-0357-EL-BLN, consists of rebuilding of two existing 138-kilovolt (kV) transmission lines within existing right of way. The total length of the Scioto Trail-Circleville and Scippo Extension transmission lines is approximately four miles. AEP Ohio Transco will upgrade the Scioto Trail-Circleville line by using primarily standard single circuit 138-kV structures and will upgrade the Scippo extension by using standard double circuit 138-kV structures. This project will be an approximate \$10 million investment by AEP Ohio Transco. The project will traverse Circleville and Pickaway townships in Pickaway County. Construction is scheduled to begin in July 2015.

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

Sincerely,

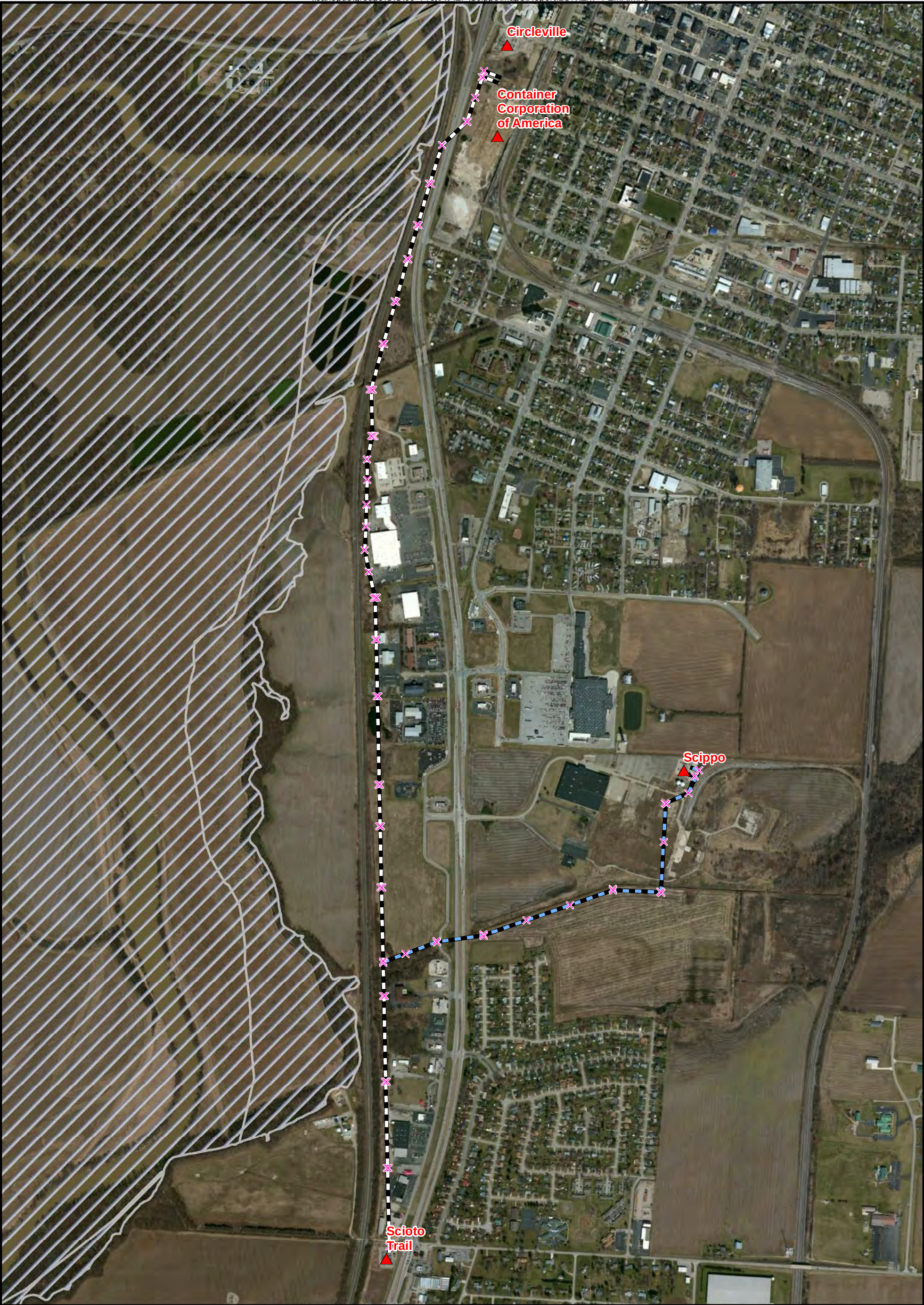


Brett E. Schmied
Project Outreach Specialist
AEP Ohio

cc: Curtis Perry, Project Manager

Exhibit 7

FEMA FIRM Figure



LEGEND:

- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- FEMA 100-yr floodplain
- Proposed Pole Location
- Substation

0 1,000 2,000

Scale In Feet

BASE MAP SOURCE:
ESRI World Imagery Service, 2011

Scippo Extension/
Scioto-Trail Circleville

EXHIBIT 7
FLOODPLAIN MAP

DATE: 2/13/2015
PN: 652788

Appendix A
Wetland Delineation Report

Wetland and Waterbody Delineation: Scippo Extension and Scioto Trail – Circleville Project

PREPARED FOR: Liz Decima, American Electric Power Service Corporation (AEP)

PREPARED BY: Sarah Miloski, Environmental Scientist, CH2M HILL
Mark Driscoll, Project Manager, CH2M HILL

DATE: March 2015

Introduction

This technical memorandum serves to summarize the results of the wetland and waterbody delineation field surveys conducted on October 30, 2014, January 27, 2015, and March 11, 2015, by CH2M HILL Engineers, Inc. (CH2M HILL) for the American Electric Power Service Corporation (AEP) Scippo Extension and Scioto Trail – Circleville Project (the Project) near Circleville, Pickaway County, Ohio. A portion of the environmental survey corridor in this report overlaps with the field survey conducted on December 2, 2013 for the AEP Ohio Biers Run- Circleville 138kV Transmission Line Project.

- Figure 1 provides an overview of the environmental survey corridor on a U.S. Geological Survey (USGS) topographic map.
- Figure 2 includes National Hydrography Dataset (NHD) and National Wetland Inventory (NWI) information.
- Figure 3 includes U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Maps.
- Figure 4 includes Wetland and Waterbody Delineation Maps.
- Appendix A includes photos of wetlands, and waterbodies within the survey corridor.
- Appendix B includes Wetland Determination Data Forms for wetland and representative upland data points, as well as Ohio Rapid Assessment Method (ORAM) forms.
- Appendix C includes Headwater Habitat Evaluation Index (HHEI) data forms for streams.

Background Information

Prior to conducting the field investigations, CH2M HILL reviewed the information sources referenced in Figures 1 through 3 to identify the potential extent of wetlands and waterbodies within the environmental survey corridor.

The environmental survey corridor is located within the Lick Run-Scioto River subwatershed (USGS Hydrologic Unit Code 050600020403) of the Lower Scioto Watershed (Hydrologic Unit Code 05060002). The environmental survey corridor of the Project crosses six USGS-mapped streams, all tributaries of the Scioto River, located immediately west of the survey corridor. The US Army Corps of Engineers has designated the Scioto River as a Traditional Navigable Water (TNW) from Portsmouth, Ohio to Green Camp, Ohio. The streams within the Project survey corridor flow into the Scioto River within this range.

According to the NRCS Soil Survey Geographic (SSURGO) Database for Pickaway County, (Figure 3), the environmental survey corridor crosses 14 different mapped soil unit types. Only one of these mapped soil unit types is identified as a predominantly hydric soil: Ws, Westville silty clay loam (USDA, 2014). The remaining mapped soil units are identified as non-hydric. Predominantly hydric soil units are defined as those having greater than 66 percent to less than 100 percent of components that are hydric. Generally, hydric soil

units indicate areas where potential wetlands may occur because these soil types indicate through their color and structure that they have developed under predominately reducing (i.e. oxygen poor) conditions caused by inundation and/or saturation by water.

The NWI data identifies the type of wetland or open water present at a location using the U.S. Fish and Wildlife Service (USFWS) classification system (Cowardin et al., 1979). The NWI data indicate that one palustrine unconsolidated bottom, intermittently exposed, diked/impounded (PUBGh) feature occurs within the environmental survey corridor (Figure 3; USFWS 2012a and USFWS 2012b). Caution should be exercised when using NWI maps as the information is obtained largely from aerial interpretation, may be dated, and is only sporadically field checked. The presence of an NWI feature is not a definitive indicator that a wetland or waterbody is present. In this case, the PUBGh feature was field verified as a wetland complex consisting of WRJ-001 (PEM) and WRJ-002 (PEM) (Figure 4).

Field Survey Methodology

CH2M HILL conducted wetland and waterbody delineation surveys within the Project area on October 30, 2014, January 27, 2015, and March 11, 2015. The 3.26-mile long Project will require a 3.28-mile long, 100-foot wide permanent, maintained right-of-way (ROW). The survey covered a 200-foot wide environmental survey corridor to encompass a larger area in case line adjustments were proposed after fieldwork was completed.

Streams were identified as those waters that possessed a defined “bed and bank” or ordinary high water mark (OHWM) indicators and lacked a dominance of upland vegetation in the channel. Channels that parallel roadways were identified as upland drainage features and were not identified as streams unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

The outer boundaries of each wetland and waterbody identified within the Project area were flagged and recorded using handheld global positioning system (GPS). For waterbodies identified within the Project area, the OHWM was located. As wetland and waterbody features were collected, they were each assigned a unique feature identification of DLLNNN, as outlined below.

D	=	Data Type (W for Wetland; S for Stream)
LL	=	Initials of Field Survey Lead (RJ for Ron Johnson, SM for Sarah Miloski)
NNN	=	Feature Number (specific to each DLL combination starting with 001)

According to recent guidance from the U.S. Environmental Protection Agency (USEPA) and USACE, wetlands that are adjacent to or have a significant nexus to TNWs are regulated under Sections 401 and 404 of the CWA (USEPA and USACE, 2008). A significant nexus must meet criteria that indicate that the wetland provides biological, physical, or chemical benefits to the TNW. A significant nexus includes consideration of both hydrologic and ecologic factors. The closest downstream TNW to the Project area is the Scioto River.

Land Use Observations

The Project area comprises an existing substation, active and inactive industrial areas, commercial areas, fallow and new field, active agricultural fields, maintained highway right-of-way (ROW), overhead utility ROW, railroad ROW, wetlands, and small secondary growth woodlands. Dominant canopy vegetation in the forested areas included sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), honey-locust (*Gleditsia triacanthos*), common hackberry (*Celtis occidentalis*), and tulip poplar (*Liriodendron tulipifera*). The understory was comprised mostly of multiflora rose (*Rosa multiflora*), hairy woodland brome (*Bromus pubescens*), and Christmas fern (*Polystichum acrostichoides*). Dominant vegetation observed within the overhead utility ROWs and fallow fields included Queen Anne’s lace (*Daucus carota*), fescue, goldenrod (*Solidago* sp.), Canada goldenrod (*Solidago canadensis*), wand panic grass (*Panicum virginica*), orchard grass (*Dactylis glomerata*), and broom-sedge (*Andropogon virginicus*). Vegetation characteristic of fallow fields was also observed in a gravelly, inactive industrial area along the proposed Scippo Extension Route, north of

stream SRJ004. Dominant vegetation within the maintained highway ROW and new fields included multiflora rose, clovers (*Trifolium* sp.) and fescue grasses (*Festuca* and *Schedonorus* sp.). Agricultural fields showed indications of being planted with soybeans (*Glycine max*) during the growing season. Palustrine emergent (PEM) wetlands were dominated by tall scouring-rush (*Equisetum hyemale*), common reed (*Phragmites australis*), and narrow-leaf cat-tail (*Typha angustifolia*).

Wetland Summary

The wetland determination completed within the environmental survey corridor identified three wetlands, totaling 1.76 acres (Table 1). A total of 1.16 acres of these wetlands is located within the proposed 100-foot wide permanent ROW. Representative photographs are included in Appendix A, and wetland determination data forms are included in Appendix B. These wetlands appear to be hydrologically connected by ephemeral overland flow the Scioto River, a TNW. Both of these wetlands appear to be Category 1 wetlands according to their Ohio Rapid Assessment Method (ORAM) scores.

TABLE 1
Wetlands within the Environmental Survey Corridor

Wetland ID	Cowardin Wetland Type ^a	Acreage within Environmental Survey Corridor	Acreage within Proposed ROW	ORAM Score ^b	Preliminary Wetland Category ^b	Figure 4 Sheet
WRJ-001	PEM	1.18	0.68	24	1	B/C
WRJ-002	PEM	0.56	0.46	20	1	B/C
WSM001	PSS	0.02	0.02	27	1	B/C
Route Total:		1.76	1.16	--	--	--

^a PEM = palustrine emergent; PSS= palustrine scrub-shrub

^b OEPA 2001.

Waterbody Summary

Streams

The waterbody delineation identified four streams, totaling 2,839 linear feet within the environmental survey corridor (Table 2). Of these, five stream crossings, totaling 693 linear feet, are located within the proposed 100-foot wide permanent ROW. Streams SRJ003, SRJ004, and SRJ005 were delineated as separate segments of the same stream, an unnamed tributary to the Scioto River, which is crossed by the 100-foot wide permanent ROW. One stream, SRJ001, located within the environmental survey corridor, was previously delineated during the field survey conducted on December 2, 2013 for the AEP Ohio Biers Run- Circleville 138kV Transmission Line Project. Representative photographs are included in Appendix A, and HHEI stream data sheets are included in Appendix C.

TABLE 2

Streams within the Environmental Survey Corridor

Stream ID	Flow Regime ^a	Linear Feet within Environmental Survey Corridor	Linear Feet within Proposed ROW	Watershed Area (mi ²)	HHEI Score ^b	Preliminary PHWH Class (HHEI) ^b	Figure 4 Sheet
SRJ001*	Ephemeral	0	0	0.10	18	Class I PHWH	A
SRJ002	Perennial	15	11	0.10	44	Class II PHWH	A
SRJ003^	Perennial	397	250	0.5	75	Class III PHWH	B/C
SRJ004^	Perennial	1809	100	0.4	64	Modified Class II PHWH	B/C
SRJ005^	Perennial	516	230	0.4	64	Modified Class II PHWH	B/C
SRJ006	Ephemeral	102	102	0.10	20	Class I PHWH	A
Route Total:		2,839	693	--	--	--	--

^a Based on field observations and USGS topographic map.^b OEPA 2012.

* Stream data from the 12/2/13 environmental survey for the AEP Ohio Biers Run- Circleville 138kV Transmission Line Project.

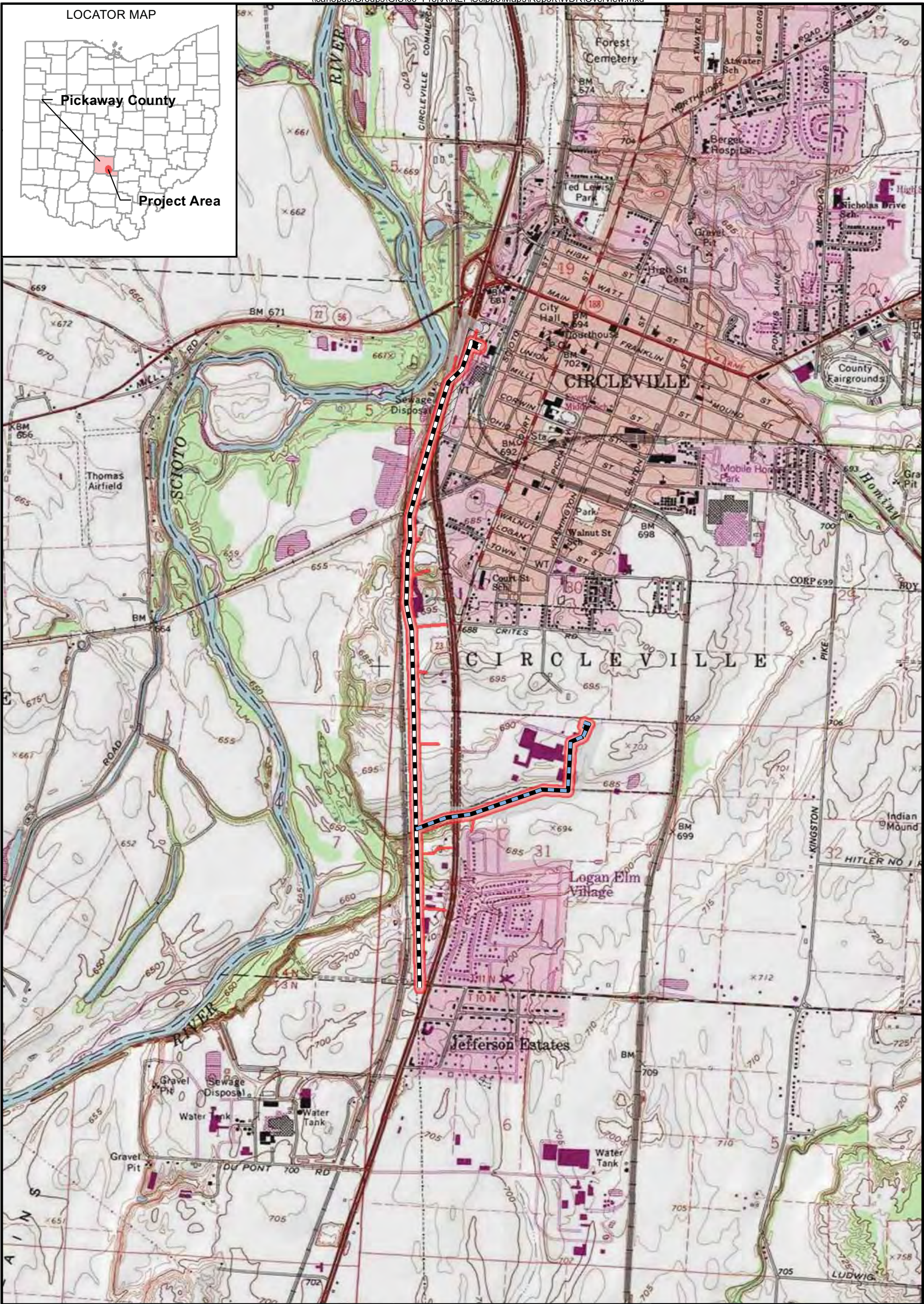
^ Indicates segments of the same stream.

Conclusions

CH2M HILL completed wetland and waterbody delineation field surveys on October 30, 2014, January 27, 2015, and March 11, 2015 within the environmental survey corridor. As currently designed, two PEM and one PSS wetland crossings, totaling 1.16 acres, and five stream crossings, totaling 693 linear feet, were located within the proposed permanent ROW.

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- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- Survey Corridor
- Previously Surveyed Area
- Bier's Run Survey Area

0 2,000 4,000
Scale In Feet



BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Circleville (published 1975)

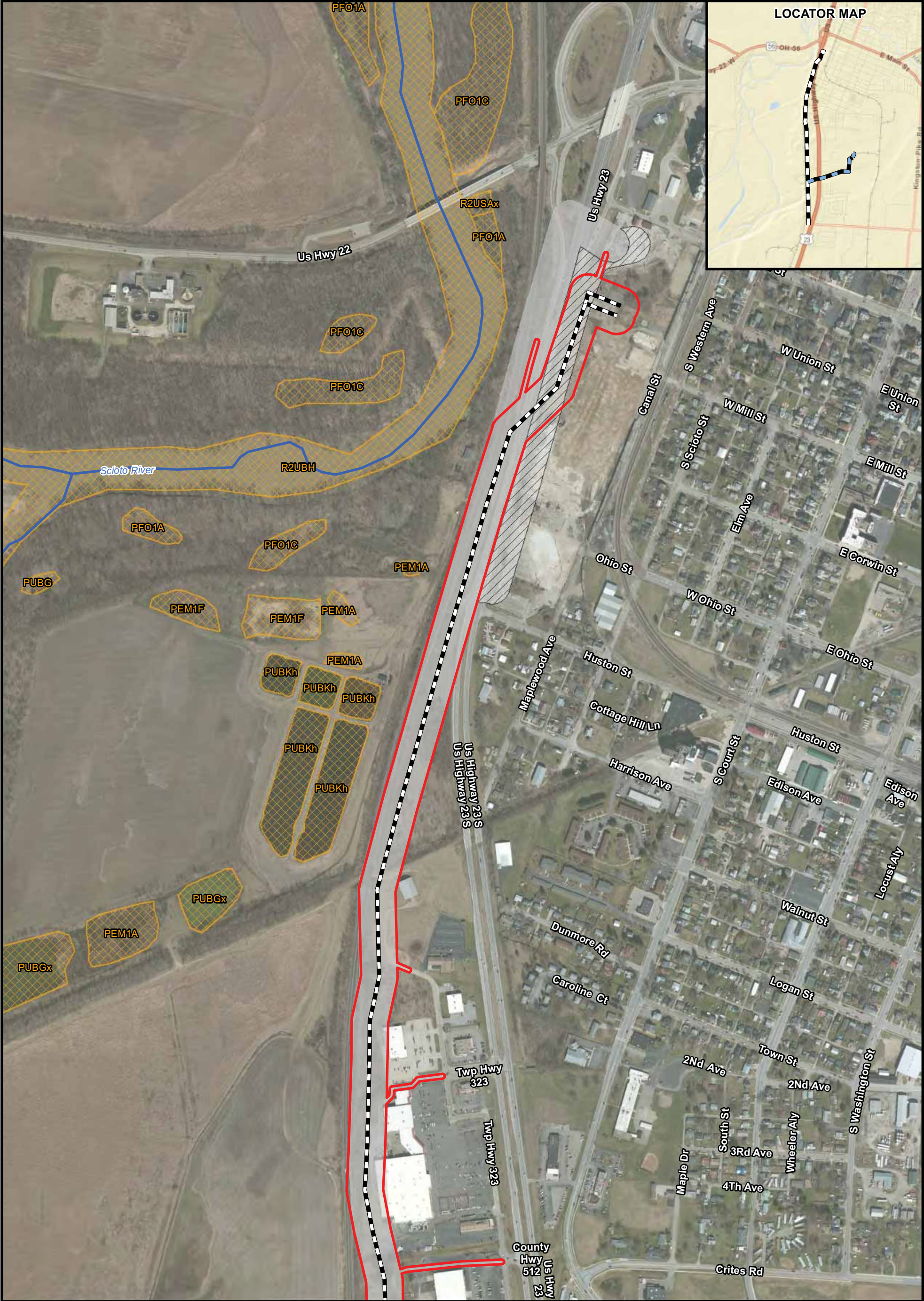


Scippo Extension/
Scioto Trail - Circleville

FIGURE 1
TOPOGRAPHIC MAP

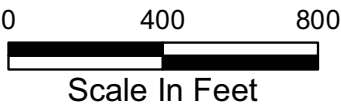
DATE: 3/18/2015
PN: 652788





LEGEND:

- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- Survey Corridor
- Stream (NHD)
- Wetland (NWI)
- Previously Surveyed Area
- Bier's Run Survey Area



BASE MAP SOURCE:
ESRI, ArcMap Imagery - Microsoft, 2012
Streams - USGS, National Hydrography Dataset
Wetlands - USFWS, National Wetland Mapper
LOCATOR BASE MAP SOURCE:

Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp.,
GEBCO, USGS, FAO, NPS, © OpenStreetMap contributors,
and the GIS User Community



Scippo Extension/
Scioto-Trail Circleville

FIGURE 2A
NHD STREAMS AND NATIONAL
WETLAND INVENTORY MAP

DATE: 3/18/2015
PN: 652788





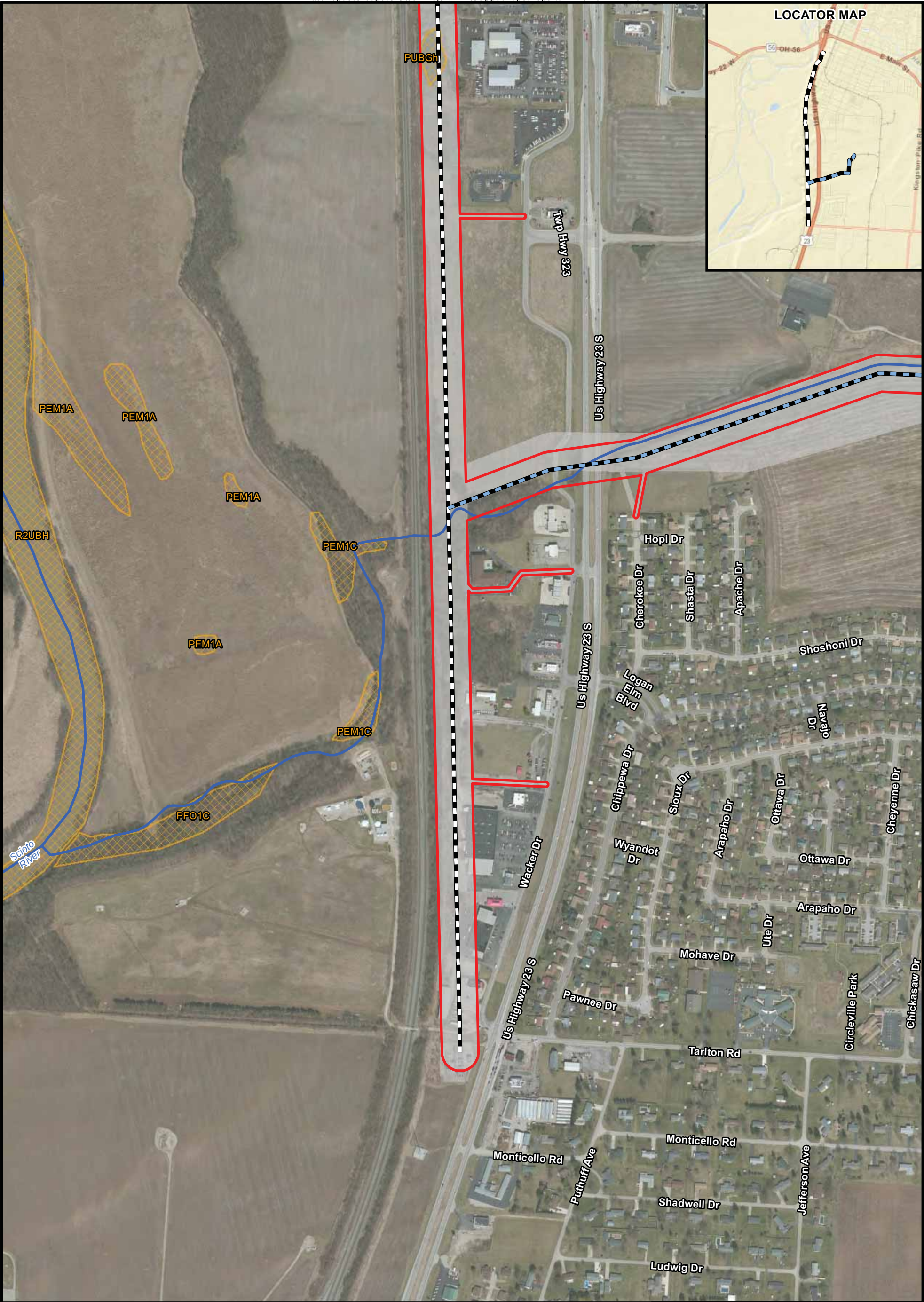
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- 
- Scale In Feet



DATE: 3/18/2015
PN: 652788





LEGEND:

- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- Survey Corridor
- Stream (NHD)
- Wetland (NWI)
- Previously Surveyed Area
- Bier's Run Survey Area

0 400 800
Scale In Feet

BASE MAP SOURCE:
ESRI, ArcMap Imagery - Microsoft, 2012
Streams - USGS, National Hydrography Dataset
Wetlands - USFWS, National Wetland Mapper
LOCATOR BASE MAP SOURCE:

Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp.,
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Scippo Extension/
Scioto-Trail Circleville

FIGURE 2C
NHD STREAMS AND NATIONAL
WETLAND INVENTORY MAP

DATE: 3/18/2015
PN: 652788



 Proposed Scippo Extension Route
 Scioto Trail-Circleville Route
 Survey Corridor
 Soil Unit
 Hydric or Predominately Hydric Soil Unit

 Previously Surveyed Area
 Bier's Run Survey Area

0 400 800

BASE MAP SOURCE:
ESRI, ArcMap Imagery - Microsoft, 2012
Soils - USDA, NRCS 2013

LOCATOR BASE MAP SOURCE:
Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp.,
GEBCO, USGS, FAO, NPS, © OpenStreetMap contributors,
and the GIS User Community



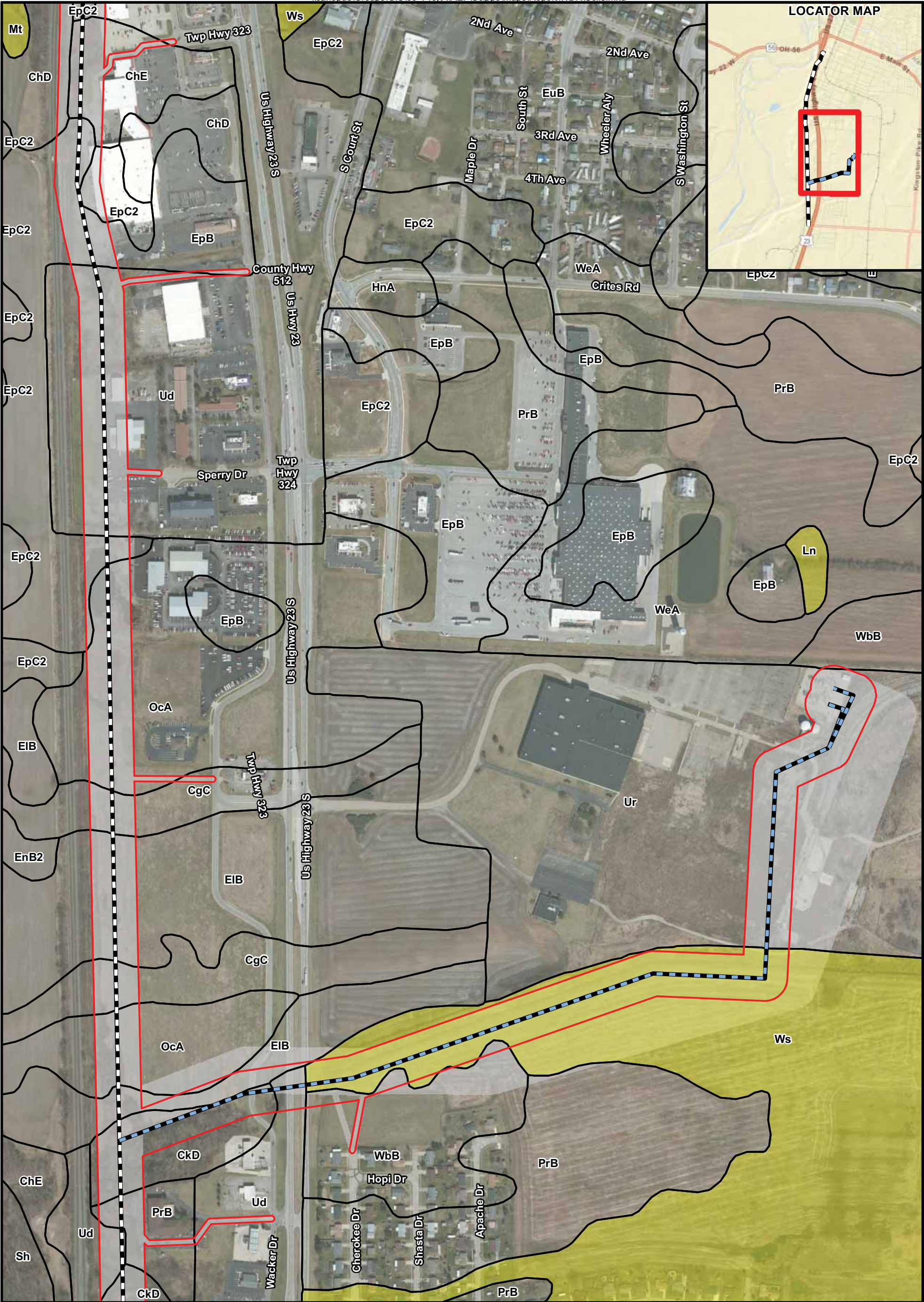
Sciippo Extension/
Scioto-Trail Circleville

FIGURE 3A
SOILS MAP

DATE: 3/18/2015

PN: 652788





LEGEND:

- Proposed Scippo Extension Route
- Scioto Trail-Circleville Route
- Survey Corridor
- Soil Unit
- Hydric or Predominately Hydric Soil Unit
- Previously Surveyed Area
- Bier's Run Survey Area

0 400 800

Scale In Feet

BASE MAP SOURCE:
ESRI, ArcMap Imagery - Microsoft, 2012
Soils - USDA, NRCS 2013

LOCATOR BASE MAP SOURCE:
Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp.,
GEBCO, USGS, FAO, NPS, © OpenStreetMap contributors,
and the GIS User Community



Scippo Extension/
Scioto-Trail Circleville

FIGURE 3B
SOILS MAP

DATE: 3/18/2015
PN: 652788





- Proposed Scippo Extension Route - Scioto Trail-Circleville Route - Survey Corridor - Right-of-Way - Previously Surveyed Area - Bier's Run Survey Area - Area Not Surveyed	- Delineated Stream - Culvert - Upland Data Point - Wetland Data Point	0 250 500 Scale In Feet BASE MAP SOURCE: ESRI, ArcMap Imagery - Microsoft, 2012 Streams - USGS, National Hydrography Dataset Wetlands - USFWS, National Wetland Mapper LOCATOR BASE MAP SOURCE: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, © OpenStreetMap contributors, and the GIS User Community	Delineated Wetland - Palustrine Scrub/Shrub - Palustrine Emergent	FIGURE 4A WETLANDS AND WATERBODIES DELINEATION MAP DATE: 3/19/2015 PN: 652788	Scippo Extension/ Scioto-Trail Circleville CH2MHILL
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- Proposed Scippo Extension Route - Scioto Trail-Circleville Route - Survey Corridor - Right-of-Way - Previously Surveyed Area - Bier's Run Survey Area - Area Not Surveyed	- Delineated Stream - Culvert - Upland Data Point - Wetland Data Point	0 250 500 Scale In Feet BASE MAP SOURCE: ESRI, ArcMap Imagery - Microsoft, 2012 Streams - USGS, National Hydrography Dataset Wetlands - USFWS, National Wetland Mapper LOCATOR BASE MAP SOURCE: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, © OpenStreetMap contributors, and the GIS User Community	FIGURE 4B WETLANDS AND WATERBODIES DELINEATION MAP DATE: 3/19/2015 PN: 652788
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- Proposed Scippo Extension Route - Scioto Trail-Circleville Route - Survey Corridor - Right-of-Way - Previously Surveyed Area - Bier's Run Survey Area - Area Not Surveyed	- Delineated Stream - Culvert - Upland Data Point - Wetland Data Point	0 250 500 Scale In Feet BASE MAP SOURCE: ESRI, ArcMap Imagery - Microsoft, 2012 Streams - USGS, National Hydrography Dataset Wetlands - USFWS, National Wetland Mapper LOCATOR BASE MAP SOURCE: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, © OpenStreetMap contributors, and the GIS User Community	Delineated Wetland - Palustrine Scrub/Shrub - Palustrine Emergent	FIGURE 4C WETLANDS AND WATERBODIES DELINEATION MAP DATE: 3/19/2015 PN: 652788	Scippo Extension/ Scioto-Trail Circleville CH2MHILL
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APPENDIX A

SITE PHOTOGRAPHS

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 1: Stream SRJ001

Notes: Photo taken on December 2, 2013 during surveys for the AEP Ohio Biers Run- Circleville 138kV Transmission Line Project, facing upstream



Photo 2: Stream SRJ001

Notes: Photo taken on December 2, 2013 during surveys for the AEP OHIO Biers Run- Circleville 138kV Transmission Line Project, facing downstream

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 3: Stream SRJ002
Notes: Photo taken facing upstream



Photo 4: Stream SRJ002
Notes: Photo taken facing downstream

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 5: Wetland WRJ001
Notes: Photo taken facing north



Photo 6: Wetland WRJ001
Notes: Photo taken facing northwest

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 7: Wetland WRJ002
Notes: Photo taken facing west



Photo 8: Stream SRJ003
Notes: Photo taken facing upstream

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 9: Stream SRJ003
Notes: Photo taken facing downstream



Photo 10: Stream SRJ004
Notes: Photo taken facing upstream

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 11: Stream SRJ004
Notes: Photo taken facing downstream



Photo 12: Stream SRJ005
Notes: Photo taken facing upstream

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 13: Stream SRJ005
Notes: Photo taken facing downstream



Photo 14: Stream SRJ006
Notes: Photo taken facing upstream.

**AEP OHIO TRANSMISSION COMPANY
SCIPPO EXTENSION AND SCIOTO TRAIL-CIRCLEVILLE PROJECT
OCTOBER 30, 2014 AND MARCH 11, 2015**



Photo 15: Stream SRJ006
Notes: Photo taken facing downstream



Photo 16: Wetland WSM001
Notes: Photo taken facing southeast.

APPENDIX B

WETLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Scippo City/County: Pickaway Sampling Date: 10/30/14
 Applicant/Owner: AEP State: Ohio Sampling Point DPRJ001
 Investigator(s): R. Johnson Section, Township, Range: S30 TN11N R21
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 39.581349 Long.: -82.955759 Datum: WGS 84
 Soil Map Unit Name Ockley silt loam, 0-2 percent slopes NWI Classification: PUBgh

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No (If no, explain in remarks)
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal" Yes
 Are vegetation , soil , or hydrology naturally problematic? circumstances" present?
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? <u>Yes</u>
Remarks: WRJ001 - PEM	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial ☒ Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on ☐ Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled ☐ Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0-24</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland hydrology present? <u>Y</u>
--	--

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

VEGETATION - Use scientific names of plants
Sampling Point: DPRJ001

Tree Stratum					Plot Size (30 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
6									
7									
8									
9									
10									
							0	= Total Cover	
Sapling/Shrub Stratum					Plot Size (15 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
6									
7									
8									
9									
10									
							0	= Total Cover	
Herb Stratum					Plot Size (5 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Typha angustifolia</i>						60	Y	OBL
2	<i>Phalaris arundinacea</i>						25	Y	FACW
3	<i>Carex sp.</i>						20	Y	FACW
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
							105	= Total Cover	
Woody Vine Stratum					Plot Size (30 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
							0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	21	53
Woody Vine Stratum	0	0

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

OBL species	60	x 1 =	60
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	105	(A)	150 (B)
Prevalence Index = B/A =			1.43

Hydrophytic Vegetation Indicators:

 Rapid test for hydrophytic vegetation

☒ Dominance test is >50%

☒ Prevalence index is ≤3.0*

 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: DPRJ001

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

[illegible]

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

☐ Histisol (A1)	☐ Dark Surface (S7)
☐ Histic Epipedon (A2)	☐ Polyvalue Below Surface (S8)
☐ Black Histic (A3)	☐ (MLRA 147, 148)
☐ Hydrogen Sulfide (A4)	☐ Thin Dark Surface (S9)
☐ Stratified Layers (A5)	☐ (MLRA 147, 148)
☐ 2 cm Muck (A10) (LRR N)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☒ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ (LRR N, MLRA 147, 148)	☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)	☐ Iron-Manganese Masses (F12)
☐ Sandy Redox (S5)	☐ Umbric Surface (F13) (MLRA
☐ Stripped Matrix (S6)	☐ Piedmont Floodplain Soils (F1
	☐ Red Parent Material (F21) (ML

Indicators for Problematic Hydric Soils:

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

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Scippo City/County: Pickaway Sampling Date: 10/30/14
 Applicant/Owner: AEP State: Ohio Sampling Point DPRJ003
 Investigator(s): R. Johnson Section, Township, Range: S31 TN11N R21
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 39.580686 Long.: -82.955917 Datum: WGS 84
 Soil Map Unit Name Ockley silt loam, 0-2 percent slopes NWI Classification: N/A

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

Are vegetation , soil , or hydrology significantly disturbed?

Are "normal Yes

Are vegetation , soil , or hydrology naturally problematic?

circumstances" present?

(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? <u>Yes</u>
Remarks: WRJ002 - PEM, isolated	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☒ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants
Sampling Point: DPRJ003

Tree Stratum Plot Size (30 ft.)					50/20 Thresholds	
	Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status	
1	<i>None observed</i>					Tree Stratum 20% 50%
2						Tree Stratum 0 0
3						Sapling/Shrub Stratum 0 0
4						Herb Stratum 20 50
5						Woody Vine Stratum 0 0
6						
7						
8						
9						
10						
			0	= Total Cover		
Sapling/Shrub Stratum Plot Size (15 ft.)					Dominance Test Worksheet	
	Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status	
1	<i>None observed</i>					Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
2						Total Number of Dominant Species Across all Strata: 3 (B)
3						Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)
4						
5						
6						
7						
8						
9						
10						
			0	= Total Cover		
Herb Stratum Plot Size (5 ft.)					Prevalence Index Worksheet	
	Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status	
1	<i>Equisetum hyemale</i>		50	Y	FACW	Total % Cover of: OBL species 0 x 1 = 0
2	<i>Phragmites australis</i>		30	Y	FACW	FACW species 100 x 2 = 200
3	<i>Typha angustifolia</i>		20	Y	FACW	FAC species 0 x 3 = 0
4						FACU species 0 x 4 = 0
5						UPL species 0 x 5 = 0
6						Column totals 100 (A) 200 (B)
7						Prevalence Index = B/A = 2.00
8						
9						
10						
11						
12						
13						
14						
15						
			100	= Total Cover		
Woody Vine Stratum Plot Size (30 ft.)					Hydrophytic Vegetation Indicators:	
	Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status	
1	<i>None observed</i>					☒ Rapid test for hydrophytic vegetation
2						☒ Dominance test is >50%
3						☒ Prevalence index is ≤3.0*
4						Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5						Problematic hydrophytic vegetation* (explain)
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic						
					Definitions of Vegetation Strata:	
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.						
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.						
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.						
Woody vines - All woody vines greater than 3.28 ft in height.						
					Hydrophytic vegetation present? Y	
Remarks: (Include photo numbers here or on a separate sheet)						

SOIL
Sampling Point: DPRJ003

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	2.5 Y 5/2	75	2.5 Y 5/3	10	D	M	silt loam	
			7.5 YR 4/6	15	C	PL/M		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

 Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Scippo City/County: Pickaway Sampling Date: 10/30/14
 Applicant/Owner: AEP State: Ohio Sampling Point DPRJ002
 Investigator(s): R. Johnson Section, Township, Range: S30 TN11N R21
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 39.581108 Long.: -82.955864 Datum: WGS 84
 Soil Map Unit Name Ockley silt loam, 0-2 percent slopes NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No (If no, explain in remarks)
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal" Yes
 Are vegetation , soil , or hydrology naturally problematic? circumstances" present?
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>No</u> Hydric soil present? <u>No</u> Wetland hydrology present? <u>No</u>	Is the sampled area within a wetland? <u>No</u>
Remarks: Upland point for W001 and W002	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? <u>N</u>
--	--

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

VEGETATION - Use scientific names of plants
Sampling Point: DPRJ002

Tree Stratum Plot Size (30 ft.)					50/20 Thresholds		
		Absolute % Cover	Dominant Species	Indicator Status		20%	50%
1	<i>None observed</i>				Tree Stratum	0	0
2					Sapling/Shrub Stratum	0	0
3					Herb Stratum	23	58
4					Woody Vine Stratum	0	0
5					Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>33.33%</u> (A/B)		
6							
7							
8							
9							
10		0	= Total Cover				
Sapling/Shrub Stratum Plot Size (15 ft.)							
		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>None observed</i>				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>105</u> x 4 = <u>420</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>115</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>3.91</u>		
2							
3							
4							
5							
6							
7							
8							
9							
10		0	= Total Cover				
Herb Stratum Plot Size (5 ft.)							
		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Solidago canadensis</i>	75	Y	FACU	Hydrophytic Vegetation Indicators: ☐ Rapid test for hydrophytic vegetation ☐ Dominance test is >50% ☐ Prevalence index is ≤3.0* ☐ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ☐ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
2	<i>Festuca sp.</i>	30	Y	FACU			
3	<i>Panicum virgatum</i>	10	Y	FAC			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
		115	= Total Cover				
Woody Vine Stratum Plot Size (30 ft.)							
		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>None observed</i>				Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.		
2							
3							
4							
5							
		0	= Total Cover				
Remarks: (Include photo numbers here or on a separate sheet)					Hydrophytic vegetation present? <u>N</u>		

SOIL

Sampling Point: DPRJ002

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Scippo City/County: Pickaway Sampling Date: 3/11/15
 Applicant/Owner: AEP State: Ohio Sampling Point DPSM001
 Investigator(s): S.Miloski Section, Township, Range: S30 TN11N R21
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 39.575516 Long.: -82.953345 Datum: WGS 84
 Soil Map Unit Name Casco-Rodman gravelly loams, 12 to 18 percent slopes NWI Classification: N/A

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

Are vegetation , soil , or hydrology significantly disturbed?

Are "normal Yes

Are vegetation , soil , or hydrology naturally problematic?

circumstances" present?

(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? <u>Yes</u>
Remarks: WSM001 - PSS	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
☒ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)
☒ Saturation (A3)	☐ Oxidized Rhizospheres on	☒ Drainage Patterns (B10)
☐ Water Marks (B1)	☒ Living Roots (C3)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Presence of Reduced Iron (C4)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Recent Iron Reduction in Tilled	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Stunted or Stressed Plants (D1)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☒ Geomorphic Position (D2)
☒ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)
		☐ FAC-Neutral Test (D5)

Field Observations:				Wetland hydrology present?
Surface water present?	Yes <u>X</u>	No <u> </u>	Depth (inches): <u>1</u>	<u>Y</u>
Water table present?	Yes <u> </u>	No <u>X</u>	Depth (inches): <u>0</u>	
Saturation present? (includes capillary fringe)	Yes <u>X</u>	No <u> </u>	Depth (inches): <u>0</u>	

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

Remarks:

VEGETATION - Use scientific names of plants
Sampling Point: DPSM001

Tree Stratum					Plot Size (30 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
6									
7									
8									
9									
10									
			0	= Total Cover					
Sapling/Shrub Stratum					Plot Size (15 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Cornus amomum</i>		30	Y	FACW				
2									
3									
4									
5									
6									
7									
8									
9									
10									
			30	= Total Cover					
Herb Stratum					Plot Size (5 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Salix nigra</i>		20	Y	OBL				
2	<i>Typha angustifolia</i>		10	Y	OBL				
3	<i>Cornus amomum</i>		10	Y	FACW				
4	<i>Verbesina alternifolia</i>		10	Y	FAC				
5	<i>Lysimachia nummularia</i>		5	N					
6	<i>Solidago sp.</i>		5	N					
7									
8									
9									
10									
11									
12									
13									
14									
15									
			60	= Total Cover					
Woody Vine Stratum					Plot Size (30 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
			0	= Total Cover					

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	6	15
Herb Stratum	12	30
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

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

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

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>30</u> x 1 =	<u>30</u>
FACW species	<u>40</u> x 2 =	<u>80</u>
FAC species	<u>10</u> x 3 =	<u>30</u>
FACU species	<u>0</u> x 4 =	<u>0</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>80</u> (A)	<u>140</u> (B)
Prevalence Index = B/A =		<u>1.75</u>

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

X Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: DPSM001

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: AEP Scippo City/County: Pickaway Sampling Date: 3/11/15
 Applicant/Owner: AEP State: Ohio Sampling Point DPSP002
 Investigator(s): S. Miloski Section, Township, Range: S30 TN11N R21
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 39.57554 Long.: -82.953422 Datum: WGS 84
 Soil Map Unit Name Ockley silt loam, 0-2 percent slopes NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No (If no, explain in remarks)
 Are vegetation , soil , or hydrology significantly disturbed? Are "normal" Yes
 Are vegetation , soil , or hydrology naturally problematic? circumstances" present?
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>No</u> Hydric soil present? <u>No</u> Wetland hydrology present? <u>No</u>	Is the sampled area within a wetland? <u>No</u>
Remarks: Upland point for WSM001	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? <u>N</u>
--	--

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

VEGETATION - Use scientific names of plants
Sampling Point: DPSM002

Tree Stratum					Plot Size (30 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
6									
7									
8									
9									
10									
			0	= Total Cover					
Sapling/Shrub Stratum					Plot Size (15 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
6									
7									
8									
9									
10									
			0	= Total Cover					
Herb Stratum					Plot Size (5 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Festuca sp.</i>		20	Y	FACU				
2	<i>Plantago major</i>		20	Y	FACU				
3	<i>Apocynum androsaemifolium</i>		10	Y	FACU				
4	<i>Fallopia japonica</i>		10	Y	FACU				
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
			60	= Total Cover					
Woody Vine Stratum					Plot Size (30 ft.)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>None observed</i>								
2									
3									
4									
5									
			0	= Total Cover					

50/20 Thresholds

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

Dominance Test Worksheet

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

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column totals	60 (A)		240 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:

☐ Rapid test for hydrophytic vegetation

☐ Dominance test is >50%

☐ Prevalence index is ≤3.0*

☐ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

☐ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: DPSM002

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

[illegible]

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

☐ Histisol (A1)	☐ Dark Surface (S7)
☐ Histic Epipedon (A2)	☐ Polyvalue Below Surface (S8)
☐ Black Histic (A3)	☐ (MLRA 147, 148)
☐ Hydrogen Sulfide (A4)	☐ Thin Dark Surface (S9)
☐ Stratified Layers (A5)	☐ (MLRA 147, 148)
☐ 2 cm Muck (A10) (LRR N)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ (LRR N, MLRA 147, 148)	☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)	☐ Iron-Manganese Masses (F12)
☐ Sandy Redox (S5)	☐ Umbric Surface (F13) (MLRA
☐ Stripped Matrix (S6)	☐ Piedmont Floodplain Soils (F1
	☐ Red Parent Material (F21) (ML

Indicators for Problematic Hydric Soils:

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

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

Site: AEP Scippo- WRJ001

Rater(s): R. Johnson

Date: 10/30/14

2

2

max 6 pts.

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 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)

1

3

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)

13

16

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

- | | |
|--|---|
| ☐ ditch | ☐ point source (nonstormwater) |
| ☐ tile | ☒ filling/grading |
| ☐ dike | ☐ road bed/RR track |
| ☐ weir | ☐ dredging |
| ☒ stormwater input | ☒ other utility ROW |

7

23

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

- | | |
|--|---|
| ☐ mowing | ☐ shrub/sapling removal |
| ☐ grazing | ☐ herbaceous/aquatic bed removal |
| ☒ clearcutting | ☐ sedimentation |
| ☐ selective cutting | ☐ dredging |
| ☐ woody debris removal | ☐ farming |
| ☐ toxic pollutants | ☐ nutrient enrichment |

23

subtotal this page

Site: AEP Scippo - WRJ001	Rater(s): R. Johnson	Date: 10/30/14
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23

subtotal first page

0

23

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)

1

24

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.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

24

End of Quantitative Rating. Complete Categorization Worksheets.

Site: AEP Scippo- WRJ002

Rater(s): R. Johnson

Date: 10/30/14

2

2

max 6 pts.

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 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)

1

3

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

14

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

- ☐ ditch
☐ tile
☐ dike
☐ weir
☒ stormwater input

- ☐ point source (nonstormwater)
☒ filling/grading
☐ road bed/RR track
☐ dredging
☒ other utility ROW

6

20

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

- ☐ mowing
☐ grazing
☒ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants

- ☐ shrub/sapling removal
☒ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

20

subtotal this page

Site: AEP Scippo - WRJ002	Rater(s): R. Johnson	Date: 10/30/14
----------------------------------	-----------------------------	-----------------------

20

subtotal first page

0

20

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)

0

20

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 0

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

 Low (1)
- ☐ None (0)

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

- x

 Extensive >75% cover (-5)
- x

 Moderate 25-75% cover (-3)
- x

 Sparse 5-25% cover (-1)
- x

 Nearly absent <5% cover (0)
- x

 Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 1

 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

20

End of Quantitative Rating. Complete Categorization Worksheets.

Site: AEP Scippo- WSM001

Rater(s): S. Miloski

Date: 3/11/15

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)

1

1

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)

13

14

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

- | | |
|--|---|
| ☐ ditch | ☐ point source (nonstormwater) |
| ☐ tile | ☒ filling/grading |
| ☐ dike | ☐ road bed/RR track |
| ☐ weir | ☐ dredging |
| ☒ stormwater input | ☒ other utility ROW |

8

22

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ 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

- | | |
|---|--|
| ☐ mowing | ☐ shrub/sapling removal |
| ☐ grazing | ☒ herbaceous/aquatic bed removal |
| ☐ clearcutting | ☐ sedimentation |
| ☐ selective cutting | ☐ dredging |
| ☐ woody debris removal | ☐ farming |
| ☐ toxic pollutants | ☐ nutrient enrichment |

22

subtotal this page

last revised 1 February 2001 jjm

Site: AEP Scippo - WSM001	Rater(s): S. Miloski	Date: 3/11/15
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22

subtotal first page

0

22

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

27

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- 0

 Aquatic bed
- 1

 Emergent
- 2

 Shrub
- 0

 Forest
- 0

 Mudflats
- 0

 Open water
- 0

 Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

 Low (1)
- ☐ None (0)

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

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- x

 Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 1

 Vegetated hummocks/tussucks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 1

 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

27

End of Quantitative Rating. Complete Categorization Worksheets.

WATERBODY DATA SHEETS



Primary Headwater Habitat Evaluation Form

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

18

SITE NAME/LOCATION **AEP Scippo / Biers Run**SITE NUMBER **SRJ001**RIVER BASIN **Scioto**DRAINAGE AREA (mi²) **0.08**LENGTH OF STREAM REACH (ft) **200**LAT. **39.60125**LONG. **-82.95190**

RIVER CODE

RIVER MILE

DATE **12/02/13**SCORER **RJ, VK**COMMENTS **ephemeral stream, roadside ditch**

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
☐ BLDR SLABS [16 pts]	0%	☒ SILT [3 pt]	95%
☐ BOULDER (>256 mm) [16 pts]	0%	☐ LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐ BEDROCK [16 pt]	0%	☐ FINE DETRITUS [3 pts]	0%
☐ COBBLE (65-256 mm) [12 pts]	0%	☐ CLAY or HARDPAN [0 pt]	0%
☐ GRAVEL (2-64 mm) [9 pts]	0%	☐ MUCK [0 pts]	0%
☐ SAND (<2 mm) [6 pts]	0%	☐ ARTIFICIAL [3 pts]	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:

6

TOTAL NUMBER OF SUBSTRATE TYPES:

2

HHEI
Metric
PointsSubstrate
Max = 40

8

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30

5

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

4

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

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

Bankfull
Width
Max=30

5

COMMENTS

AVERAGE BANKFULL WIDTH (meters):

0.75

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

COMMENTS

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 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:	Scioto River	Distance from Evaluated Stream	0.15
☐ 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: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:

MISCELLANEOUS

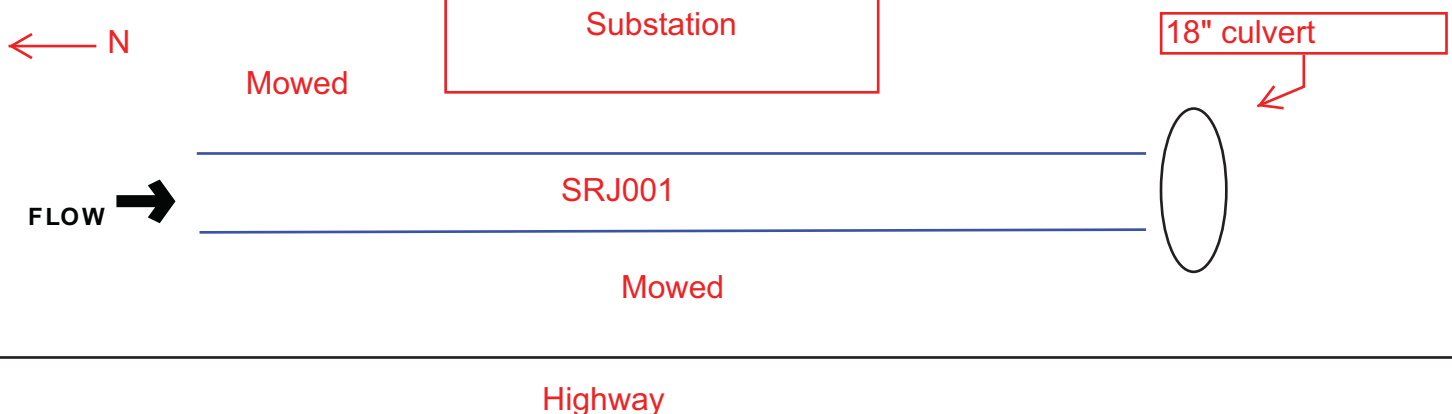
Base Flow Conditions? (Y/N): Date of last precipitation: Quantity:
Photograph Information:
Elevated Turbidity? (Y/N): Canopy (% open):
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:

Additional comments/description of pollution impacts: **BIOTIC EVALUATION**

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





Primary Headwater Habitat Evaluation Form

44

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

SITE NAME/LOCATION **AEP Ohio Scippo Extension/Scioto Trail-Circleville Project - SRJ002**

SITE NUMBER

RIVER BASIN

SciotoDRAINAGE AREA (mi²)**0.1**

LENGTH OF STREAM REACH (ft)

15

LAT.

39.58846

LONG.

-82.95688

RIVER CODE

RIVER MILE

DATE **10/30/14**

SCORER

RGJ

COMMENTS

perennial**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	0%	☐ SILT [3 pt]	20%
☐ BOULDER (>256 mm) [16 pts]	0%	☐ LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ BEDROCK [16 pt]	0%	☐ FINE DETRITUS [3 pts]	0%
☒ COBBLE (65-256 mm) [12 pts]	50%	☐ CLAY or HARDPAN [0 pt]	20%
☐ GRAVEL (2-64 mm) [9 pts]	10%	☐ MUCK [0 pts]	0%
☐ SAND (<2 mm) [6 pts]	0%	☐ ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **50.00%**

(A)

Substrate Percentage Check **100%**

(B)

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

Substrate Max = 40

19

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☒ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

5

COMMENTS

MAXIMUM POOL DEPTH (centimeters): **5**

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

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

Bankfull Width Max=30

20

COMMENTS

AVERAGE BANKFULL WIDTH (meters): **2.40****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	(Per Bank)	L	R	(Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☒	☒	Urban or Industrial
☒	☒	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE☒ Flat (0.5 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: Scioto River	Distance from Evaluated Stream	0.72
☐ 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: **Circleville** NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Pickaway** Township / City: **Circleville**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **10/28/14** Quantity: **0.05**
Photograph Information: **Photo upstream (3)/downstream (4)**
Elevated Turbidity? (Y/N): **N** Canopy (% open): **10%**
Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number:
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:

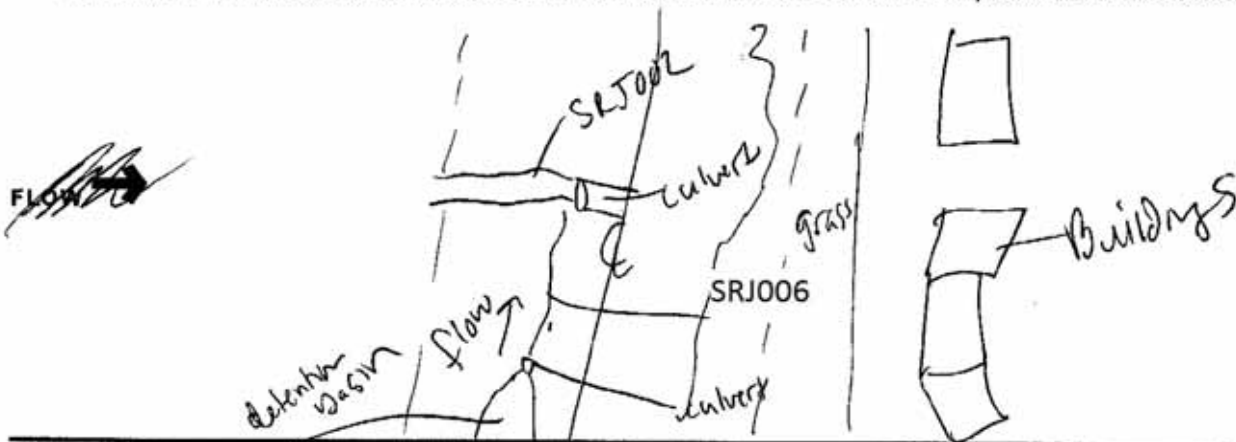
Additional comments/description of pollution impacts:

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





Primary Headwater Habitat Evaluation Form

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

75

SITE NAME/LOCATION **AEP Ohio Scippo Extension/Scioto Trail-Circleville Project - SRJ003**

SITE NUMBER RIVER BASIN **Scioto** DRAINAGE AREA (mi²) **0.50**

LENGTH OF STREAM REACH (ft) **200** LAT. **39.57468** LONG. **-82.95571** RIVER CODE RIVER MILE

DATE **10/30/14** SCORER **RGJ** COMMENTS

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

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

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
☐ BLDR SLABS [16 pts]	0%	☐ SILT [3 pt]	20%
☐ BOULDER (>256 mm) [16 pts]	0%	☐ LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐ BEDROCK [16 pt]	0%	☐ FINE DETRITUS [3 pts]	0%
☒ COBBLE (65-256 mm) [12 pts]	50%	☐ CLAY or HARDPAN [0 pt]	10%
☒ GRAVEL (2-64 mm) [9 pts]	20%	☐ MUCK [0 pts]	0%
☐ SAND (<2 mm) [6 pts]	0%	☐ ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **50.00%** (A)

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

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **21**TOTAL NUMBER OF SUBSTRATE TYPES: **4**HHEI
Metric
PointsSubstrate
Max = 40

25

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☒ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30

30

COMMENTS MAXIMUM POOL DEPTH (centimeters): **30**

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

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

Bankfull
Width
Max=30

20

COMMENTS AVERAGE BANKFULL WIDTH (meters): **2.50**

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)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
☐	☐	Mature Forest, Wetland
☐	☐	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture

L	R	
☐	☐	Conservation Tillage
☐	☒	Urban or Industrial
☒	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

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

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

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

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

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 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: Scioto River	Distance from Evaluated Stream	0.60
☐ 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: **Circleville** NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Pickaway** Township / City: **Circleville**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **10/28/14** Quantity: **0.05**
Photograph Information: **Photo upstream (8)/downstream (9)**
Elevated Turbidity? (Y/N): **N** Canopy (% open): **0%**
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:

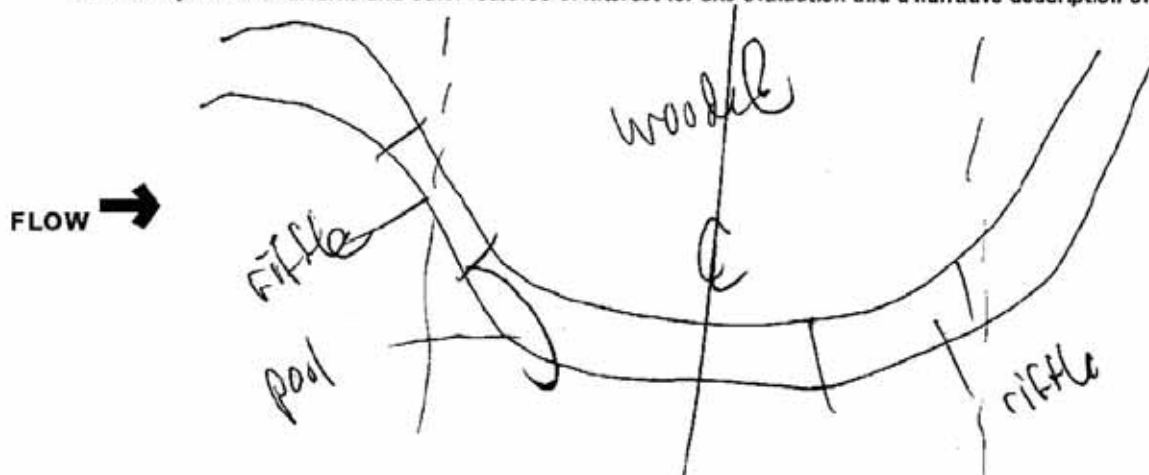
Additional comments/description of pollution impacts:

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





Primary Headwater Habitat Evaluation Form

64

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

SITE NAME/LOCATION **AEP Ohio Sciopo Extension/Scioto Trail-Circleville Project - SRJ004/005**

SITE NUMBER

RIVER BASIN

SciotoDRAINAGE AREA (mi²)**0.40**

LENGTH OF STREAM REACH (ft)

200

LAT.

39.57716

LONG.

-82.94601

RIVER CODE

RIVER MILE

DATE **10/30/14**

SCORER

RGJ

COMMENTS

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL☒ RECOVERED☐ RECOVERING☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

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

12

TOTAL NUMBER OF SUBSTRATE TYPES:

2**HHEI Metric Points**

Substrate Max = 40

14

A + B

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

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☒ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

30

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

30

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

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

Bankfull Width Max=30

20

COMMENTS

AVERAGE BANKFULL WIDTH (meters):

2.50**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	(Per Bank)	L	R	(Most Predominant per Bank)	L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☒	Urban or Industrial
☒	☒	Narrow <5m	☐	☐	Residential, Park, New Field	☒	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE

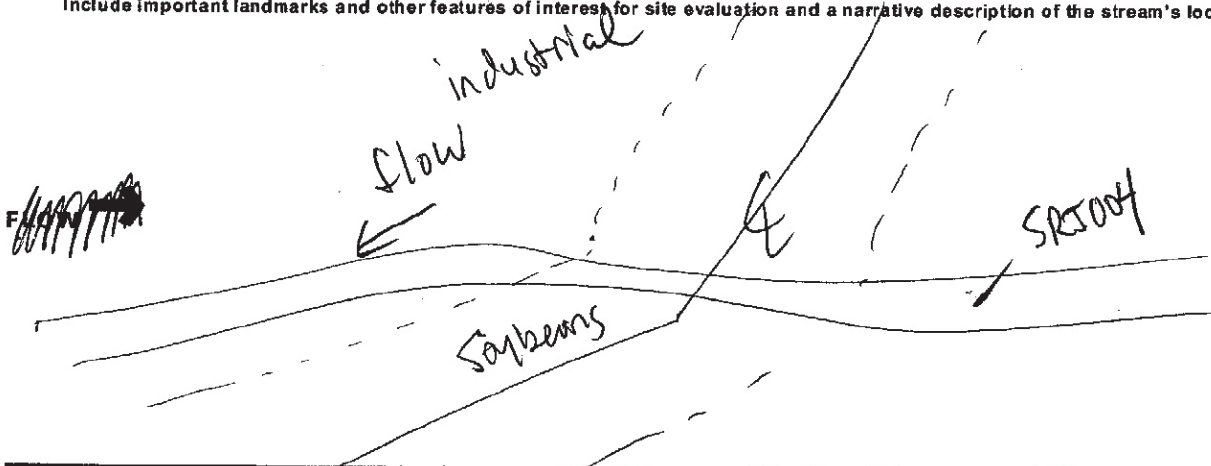
☒ Flat (0.5 ft/100 ft)	☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to Severe	☐ Severe (10 ft/100 ft)
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ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Scioto River	Distance from Evaluated Stream	0.80
☐ 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 LOCATIONUSGS Quadrangle Name: **Circleville** NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Pickaway** Township / City: **Circleville****MISCELLANEOUS**Base Flow Conditions? (Y/N): **N** Date of last precipitation: **10/28/14** Quantity: **0.05**
Photograph Information: **Photos upstream (10 and 12)/downstream (11 and 13)**
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



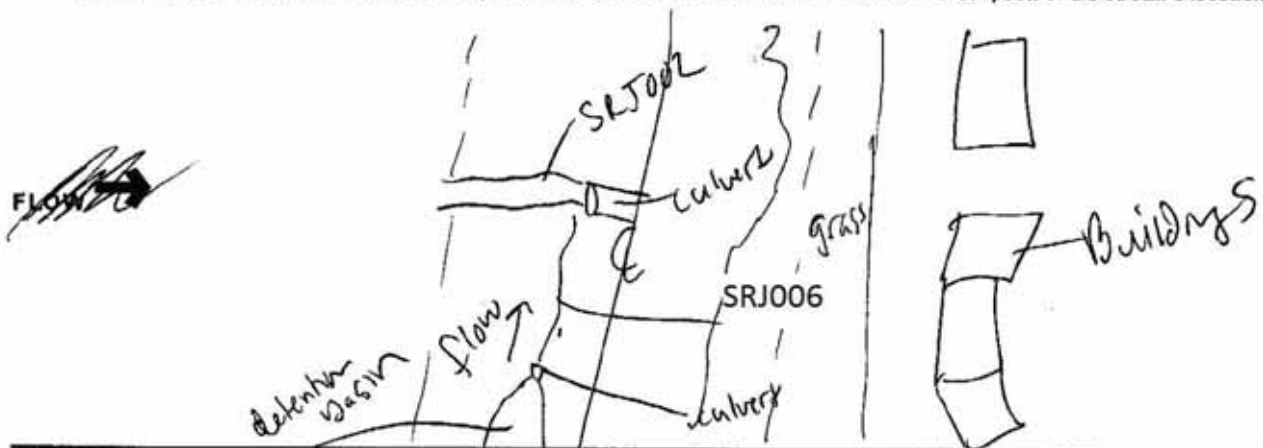
PHWH Form Page - 2

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: Scioto River	Distance from Evaluated Stream	0.72
☐ 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 LOCATIONUSGS Quadrangle Name: **Circleville** NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Pickaway** Township / City: **Circleville****MISCELLANEOUS**Base Flow Conditions? (Y/N): **N** Date of last precipitation: **10/28/14** Quantity: **0.05**
Photograph Information: **Photo upstream (14)/downstream (15)**
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 EVALUATIONPerformed? (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



RTE Correspondence to Date
Scippo Extension and Scioto Trail – Circleville Project

ODNR Correspondence		
Subject	Author	Date
Threatened and Endangered Species Habitat Assessment	Suzann Collins/CH2M HILL	February 12, 2015
15-205; Threatened and Endangered Habitat Assessment, American Electric Power Company, Inc.	John Kessler/ODNR Office of Real Estate	April 8, 2015

USFWS Correspondence		
Subject	Author	Date
Threatened and Endangered Species Habitat Assessment	Suzann Collins/CH2M HILL	February 12, 2015
AEP Proposed 138 kV Scippo Extension and Scioto Trail, Circleville, Pickaway Co. OH	Dan Everson/USFWS	February 25, 2015

Appendix B

ODNR Correspondence



CH2M HILL
10123 Alliance Road
Suite 300
Cincinnati, OH 45242
Tel 513.530.5520
Fax 513.530.5541

February 12, 2015

John Kessler
Ohio Natural Heritage Program
Ohio Department of Natural Resources, Office of Real Estate
2045 Morse Rd., Bldg. G-3
Columbus, Ohio 43229-6693
(614) 265-6621

**Subject: Threatened and Endangered Species Habitat Assessment
American Electric Power Company, Inc., Proposed 138 kV Scippo Extension and Scioto
Trail – Circleville Project, Pickaway County, Ohio**

Dear Mr. Kessler:

On behalf of American Electric Power Company, Inc. (AEP), CH2M HILL Engineers, Inc. (CH2M HILL) requests comments from the Ohio Department of Natural Resources (ODNR) on the effect of the proposed 138 kilovolt (kV) Scippo Extension and Scioto Trail – Circleville Project (the Project) in Circleville, Pickaway County, Ohio on state-listed threatened and endangered species and conservancy areas.

The Project involves the extension of a 0.79-mile electric transmission line for the Scippo Extension and the installation of a 2.54-mile electric transmission line for the Scioto Trail – Circleville Line (Attachment 1; Figure 1). The proposed Project is being constructed to correct existing system issues, which require immediate facility upgrades to remediate. While these are two distinct transmission line projects, they are connected from an engineering, construction, and geographic perspective and as such are both combined for one Project review. AEP plans to use the existing right-of-way (ROW) as much as practicable for construction of the Project. Activities outside of existing ROW will be limited to access roads, a 0.79-mile extension (Scippo Extension), and a 0.9-mile relocation (Scioto Trail – Circleville Line) within a new 100-foot ROW.

1.0 Background

AEP retained CH2M HILL to review available information and assess threatened and endangered species habitat within the Project area. CH2M HILL reviewed the U.S. Fish and Wildlife Service (USFWS) Ohio Ecological Services Office website (USFWS, 2014) for information on federally listed species known to occur, or potentially occur, in Pickaway County, Ohio. CH2M HILL also reviewed the ODNR Division of Wildlife (DOW) Natural Heritage Database State-listed Species for Pickaway County (ODNR DOW, 2012; ODNR DOW, 2014) and the relevant U.S. Geological Survey (USGS) topographic maps (Circleville; Attachment 1; Figure 1).

CH2M HILL submitted a Natural Heritage Database data request form and mapping to the ODNR DOW via email on October 30, 2014, to solicit information on known occurrences of federally listed and state listed species within a 1.5-mile radius of the Project area. Through this request, CH2M HILL obtained Geographic Information System (GIS) data on November 5, 2014, that outlined known records of state and federally listed species within the Project area (Schneider, 2014, personal communication). The ODNR DOW also provided a response letter, which is included as Attachment 2 and discussed in further detail in the following sections. The following summarizes the results of the October and November 2014 ODNR coordination, also provided in Figure 2 of Attachment 1.

2.0 Results of Desktop Review

The USFWS identified the species listed in Table 1 as occurring, or potentially occurring, in Pickaway County, Ohio.

TABLE 1
Federally-listed Species Identified within Pickaway County, Ohio

Common Name (Federal Status) ¹	Species Name	Federal Listing ¹	Category	General Habitat Notes ^{2,3}
Indiana bat (Endangered)	<i>Myotis sodalis</i>	E	Vertebrate Animal - Mammal	Hibernates in caves and mines. Roosts in exfoliating/loose tree bark of living and dead trees, or cavities and hollows of dead trees. Maternity and foraging habitat includes small stream corridors with well-developed riparian woods and upland forests ^{2,3}
Northern long-eared bat (Proposed as Endangered)	<i>Myotis septentrionalis</i>	P E	Vertebrate Animal - Mammal	Hibernates in caves and mines. Swarms in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests. In summer, night roosts include caves, mines, quarry tunnels, while day roosts include crevices, hollows, or under loose bark of trees, or in small spaces associated with buildings and other structures ^{2,3}
Scioto Madtom (Endangered)	<i>Noturus trautmani</i>	E	Vertebrate Animal - Fish	Creek with moderate gradient and riffles. This species is found near riffles with decreasing velocity and a sandy gravel substrate ³
Clubshell (Endangered)	<i>Pleurobema clava</i>	E	Invertebrate Animal	This mussel prefers clean, loose sand and gravel in medium to small rivers and streams. This mussel will bury itself in the bottom substrate to depths of up to four inches ⁴
Northern Riffleshell (Endangered)	<i>Epioblasma torulosa rangiana</i>	E	Invertebrate Animal	Freshwater, high gradient, creek - medium river within riffles. Found in riffles in areas of well-packed fine gravel and swiftly moving water with high oxygen ³
Rabbitsfoot (Threatened)	<i>Quadrula cylindrica cylindrica</i>	T	Invertebrate Animal	Typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams, it inhabits bars or gravel and cobble close to the fast current. Found in medium to large rivers in sand and gravel ³
Rayed Bean (Endangered)	<i>Villosa fabalis</i>	E	Invertebrate Animal	Generally known from smaller headwater creeks, found in riffles with substrates composed of gravel and sand ³
Snuffbox (Endangered)	<i>Epioblasma triquetra</i>	E	Invertebrate Animal	Found in riffles of medium and large rivers with stony or sandy bottoms, in swift currents, usually deeply buried ³

Federally Listed Species - E = Endangered; T = Threatened; P E = Proposed as Endangered

¹Source: USFWS, 2014a

²Source: ODNR DOW, 2014

³Source: NatureServe Explorer, 2015

⁴Source: USFWS, 2014b

The ODNR DOW identified the species, managed areas and scenic river listed in Table 2 as occurring within 1.5 miles of the Project area (Schneider, 2014, personal communication). Known locations provided by the ODNR DOW are depicted on Figure 2 of Attachment 1.

TABLE 2

State-listed Species, Managed Areas, and Scenic Rivers Identified within a 1.5-mile Radius of the Project Area

Common Name ¹ (State Status)	Species Name ¹	State Listing ¹	Federal Listing ¹	Category	General Habitat Notes ²
Spotted Darter	<i>Etheostoma maculatum</i>	E		Vertebrate Animal - Fish	Freshwater, high gradient, creek - medium river, pools and riffles. Habitat includes large rubble and boulder areas, adjacent to or in swift deep riffles, in small to medium, clear rivers ²
Tippecanoe Darter	<i>Etheostoma tippecanoe</i>	T		Vertebrate Animal - Fish	Freshwater, moderate gradient, medium river, within riffles. Habitat includes shallow gravel riffles of small to medium-sized rivers ²
Plains Clubtail	<i>Gomphus externus</i>	E		Insect	Found in mid-United States, this species prefers moderately flowing rivers and large streams with muddy bottoms, occasionally lakes ³
Rocky Mountain Bulrush	<i>Schoenoplectus saximontanus</i>	E		Vascular Plant	Prefers damp soils, freshwater ponds, ditches and seasonally wet areas ⁶
Engelmann's Spike-rush	<i>Eleocharis engelmannii</i>	E		Vascular Plant	Open mudflats, in late summer or autumn throughout Ohio ⁵
Round-leaved Spurge	<i>Euphorbia serpens</i>	E		Vascular Plant	In full sun in moist, alluvial or rich soil; frequently in disturbed situations ⁵
Pale Umbrella-sedge	<i>Cyperus acuminatus</i>	P T		Vascular Plant	A variety of open, wet, sandy situations; shores, seepages, fields ⁵
Burhead	<i>Echinodorus berteroi</i>	T		Vascular Plant	Muddy shores and shallow water of lakes, ponds, slow-moving streams, and ditches, also in swamp woods and river bottoms ⁵
Deertoe	<i>Truncilla truncata</i>	SC		Invertebrate Animal	Freshwater, low gradient, creek - medium - big rivers, pools. This species is a generalist in river size, substrate preference, and can live in areas without currents ²
Round Pigtoe	<i>Pleurobema sintoxia</i>	SC		Invertebrate Animal	Freshwater, medium - big rivers, within riffles. This species is found in medium to large rivers in mixed mud, sand, and gravel ²
Black Sandshell	<i>Ligumia recta</i>	T		Invertebrate Animal	Freshwater, high gradient, medium - big river. It is typically found in medium-sized to large rivers with strong currents and in coarse sand/gravel substrate ²
Fawnsfoot	<i>Truncilla donaciformis</i>	T		Invertebrate Animal	Freshwater, low gradient, medium - big river, within pools or riffles. Species prefers medium - to large-sized rivers with varying depths and a sand or mud substrate ²
Mussel Bed				Animal Assemblage	Mussels live on the bottom of streams, lakes and rivers, and can bury themselves in the substrate leaving only their siphons exposed. Where good habitat is found, dense concentrations of mussels can be found (Freshwater Mollusk Conservation Society [FMCS], 2015).

Federally Listed Species - E = Endangered; T = Threatened; P T = Potentially Threatened; SC = Special Concern

¹Source: ODNR DOW, 2014

²Source: NatureServe, 2015

³Source: Wisconsin Odonata Survey, 2015

⁵Source: ODNR Nature Preserves, 2009

⁶Source: WA DNR, 2015

3.0 Site Observations

CH2M HILL biologists investigated the Project area during site visits in October 30, 2014 and January 27, 2015, to document existing vegetation communities and hydrologic conditions. CH2M HILL identified and delineated five waterbodies within the Project area, including three perennial streams and two ephemeral streams, totaling 3,019 linear feet. Streams SRJ004 and SRJ005 are separate segments of the same stream, an unnamed tributary to the Scioto River. CH2M HILL also identified two palustrine emergent (PEM) wetlands within the Project area.

The Project area comprises an existing substation, active and inactive industrial areas, commercial areas, fallow and new field, active agricultural fields, maintained highway right-of-way (ROW), overhead utility ROW, railroad ROW, wetlands, and small secondary growth woodlands. Dominant canopy vegetation in the forested areas included sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), honey locust (*Gleditsia triacanthos*) common hackberry (*Celtis occidentalis*), and tulip poplar (*Liriodendron tulipifera*). The understory was comprised mostly of multiflora rose (*Rosa multiflora*), hairy woodland brome (*Bromus pubescens*), and Christmas fern (*Polystichum acrostichoides*). Dominant vegetation observed within the overhead utility ROWs and fallow fields included Queen Anne's lace (*Daucus carota*), fescue, goldenrod (*Solidago* sp.), Canadian goldenrod (*Solidago canadensis*), wand panic grass (*Panicum virginica*), orchard grass (*Dactylis glomerata*), and broom-sedge (*Andropogon virginicus*). Vegetation characteristic of fallow fields was also observed in a graveled, inactive industrial area along the proposed Scippo Extension Route, north of stream SRJ004. Dominant vegetation within the maintained highway ROW and new fields included multiflora rose, clovers (*Trifolium* sp.) and fescue grasses (*Festuca* and *Schedonorus* sp.). Agricultural fields showed indications of being planted with soybeans (*Glycine max*) during the growing season. Palustrine emergent (PEM) wetlands were dominated tall scouring-rush (*Equisetum hyemale*), common reed (*Phragmites australis*), and narrow-leaf cat-tail (*Typha angustifolia*).

Attachment 3 provides representative photos of the streams, wetlands, and habitats identified within the Project area.

4.0 State-Listed Species Effects Determinations

Preliminary effect determinations have been made for the state-listed species and conservancy area outlined in Table 2.

Spotted Darter, *Etheostoma maculatum*

The spotted darter is currently listed as State Endangered by the ODNR (ODNR DOW, 2014). This fish can be found in freshwater, high gradient streams to medium sized rivers within pools and riffles (NatureServe, 2015). The GIS data obtained from ODNR DOW displayed a known occurrence of a spotted darter 0.74 miles west of the Project area in the Scioto River. The Project area does not cross the Scioto River. Because of the distance to the nearest known occurrence, and since the Project does not cross the Scioto River, CH2M HILL requests ODNR's concurrence that the Project will not affect the spotted darter.

Plains Clubtail, *Gomphus externus*

The plains clubtail is currently listed as State Endangered by the ODNR (ODNR DOW, 2014). This species of dragonfly is found in the mid-US and prefers moderately flowing rivers and large streams with muddy bottoms (Wisconsin Odonata Survey, 2015). The GIS data obtained from ODNR DOW displayed a known occurrence of a plains clubtail approximately 190 feet west of the Project area near the Scioto River. The field surveys took place in fall and winter, outside of the summer flight season of this species of dragonfly, and, therefore, this species was not observed. Due to the Project's avoidance of the Scioto River and no other proposed stream or river impacts, as well as the extent of prior disturbance from commercial, utility ROW, and industrial land uses within the Project area, CH2M HILL requests ODNR's concurrence that the Project will not affect the plains clubtail.

Rocky Mountain Bulrush, *Schoenoplectus saximontanus*

The Rocky Mountain Bulrush is currently listed as State Endangered by the ODNR (ODNR DOW, 2012). This species of bulrush has a limited distribution in Ohio (ODNR Nature Preserves, 2009). The GIS data obtained from ODNR DOW displayed a known occurrence of rocky mountain bulrush approximately 1.3 miles east of the Project area within the Pickaway Plains Reserve. Rocky Mountain Bulrush prefers damp soils and seasonably wet areas (WA DNR, 2015). Because of the distance to the nearest known occurrence, and the extent of disturbance from commercial, utility ROW, and industrial land uses within the Project area, CH2M HILL requests ODNR's concurrence that the Project will not affect the Rocky Mountain Bulrush.

Engelmann's Spike-rush, *Eleocharis engelmannii*

Engelmann's spike-rush is currently listed as State Endangered by the ODNR (ODNR DOW, 2012). This species of spike-rush prefers open mudflats (ODNR Nature Preserves, 2009). The GIS data obtained from ODNR DOW displayed a known occurrence of Engelmann's spike-rush approximately 1.3 miles east of the Project area within the Pickaway Plains Reserve. Because of the distance to the nearest known occurrence, and the lack of suitable habitat within the Project area, CH2M HILL requests ODNR's concurrence that the Project will not affect Engelmann's spike-rush.

Round-leaved Spurge, *Euphorbia serpens*

The round-leaved spurge is currently listed as State Endangered by the ODNR (ODNR DOW, 2012). This spurge prefers a habitat with full sunlight in alluvial or rich soil, and can occur in disturbed areas (ODNR Nature Preserve, 2009). The GIS data obtained from ODNR DOW displayed one known occurrence of round-leaved spurge 0.83 miles west of the Project area, west of the Scioto River. None of the soils within the Project area was alluvial soils (USDA, NRCS, 2014); however, some soils have the potential to be considered 'rich' or 'disturbed.' Because of the distance to the nearest known occurrence within the Project area, CH2M HILL requests ODNR's concurrence that the Project will not affect round-leaved spurge.

Pale Umbrella-Sedge, *Cyperus acuminatus*

The pale umbrella-sedge is currently listed as State Potentially Threatened by the ODNR (ODNR DOW, 2012). This sedge prefers open, wet, sandy areas or shores, seeps and fields (ODNR Nature Preserves, 2009). The GIS data obtained from ODNR DOW displayed three known occurrences of the pale umbrella-sedge, with the nearest occurrence approximately 1,000 feet to the west of the Project area, west of the Scioto River. The soils within the PEM wetlands identified in the Project area contained silt loam soils, and were dominated by cattails and reed canary grass. Dominant vegetation within the field areas does not include FACW species. Because of the distance to the nearest known occurrence, and the extent of disturbance from commercial, utility ROW, and industrial land uses within the Project area, CH2M HILL requests ODNR's concurrence that the Project will not affect the pale umbrella-sedge.

Deertoe, *Truncilla truncata*

The deertoe mussel is currently listed as State Species of Concern by the ODNR (ODNR DOW, 2014). The deertoe prefers low gradient creeks to pools in big rivers (NatureServe, 2015). The GIS data obtained from ODNR DOW displayed two known occurrences of the deertoe, the closest located approximately 390 feet west of the Project within the Scioto River. Because of the distance to the nearest known occurrence, and because the Project will not cross the Scioto River, CH2M HILL requests ODNR's concurrence that the Project will not affect the deertoe.

Round Pigtoe, *Pleurobema sintoxia*

The round pigtoe mussel is currently listed as State Species of Concern by the ODNR (ODNR DOW, 2014). The round pigtoe prefers medium- to large-rivers with riffles (NatureServe, 2015). The GIS data obtained from ODNR DOW displayed one known occurrence of the round pigtoe approximately 1.1 miles west of the Project area within the

Big Darby Creek. Because of the distance to the nearest known occurrence, and because the Project will not cross the Big Darby Creek, CH2M HILL requests ODNR's concurrence that the Project will not affect the round pigtoe.

Burhead, *Echinodorus berteroi*

The burhead is currently listed as a State Threatened species by the ODNR (ODNR DOW, 2012). This species prefers muddy shores and shallow water of lakes, ponds, slow-moving streams, and ditches, swamp woods and river bottoms (ODNR Natures Preserves, 2009). The GIS data obtained from ODNR DOW displayed one known occurrence of the burhead approximately 1.3 miles east of the Project area within the Pickaway Plains Reserve. One slow moving stream was located in the Project area, but was in an active agricultural field. Because of the distance to the nearest known occurrence, lack of suitable habitat, and the extent of disturbance from commercial, utility ROW, and industrial land uses within the Project area, CH2M HILL request's ODNR's concurrence that the Project will not affect the burhead.

Black Sandshell, *Ligumia recta*

The black sandshell mussel is currently listed as State Threatened by the ODNR (ODNR DOW, 2014). The black sandshell prefers high gradient, medium- to large-rivers and it typically found within areas of strong currents (NatureServe, 2015). The GIS data obtained from ODNR DOW displayed one known occurrence of the black sandshell approximately 1.4 miles east of the Project within the Big Darby Creek. Because of the distance to the nearest known occurrence, and because the Project will not cross the Big Darby Creek, CH2M HILL request's ODNR's concurrence that the Project will not affect the black sandshell.

Fawnsfoot, *Truncilla donaciformis*

The fawnsfoot mussel is currently listed as State Threatened by the ODNR (ODNR DOW, 2014). The fawnsfoot mussel prefers low gradient, medium- to large rivers with pools and/or riffles (NatureServe, 2015). The GIS data obtained from ODNR DOW displayed one known occurrence of the fawnsfoot approximately 600 feet west of the Project are within the Scioto River. Because of the distance to the nearest known occurrence, and because the Project will not cross the Scioto River, CH2M HILL request's ODNR's concurrence that the Project will not affect the fawnsfoot mussel.

Tippecanoe Darter, *Theostoma tippecanoe*

The Tippecanoe darter is currently listed as State Threatened by the ODNR (ODNR DOW, 2014). The Tippecanoe darter prefers moderate gradient, medium size rivers with riffles (NatureServe, 2015). The GIS data obtained from ODNR DOW displayed one known occurrence of the Tippecanoe darter 0.74 miles west of the Project within the Scioto River. Because of the distance to the nearest known occurrence, and because the Project will not cross the Scioto River, CH2M HILL request's ODNR's concurrence that the Project will not affect the Tippecanoe darter.

Mussel Bed

Mussels live on the bottom of streams, lakes and rivers, and can bury themselves in the substrate leaving only their siphons exposed. As outlined in Table 2, mussel species have preferences related to water quality, flow, and substrate. In areas of desired habitat, dense concentrations of mussels can be found (FMCS, 2015). The GIS data obtained from ODNR DOW identified mussel populations within the Scioto River and the Big Darby Creek, but not within tributaries to these waters, including streams identified within the Project area. Further, impacts to streams within the Project area would be limited to temporary equipment crossings, no permanent stream impacts are proposed for the Project. As such, CH2M HILL requests ODNR's concurrence that the Project will not affect mussel beds.

Mr. Kessler, ODNR
February 12, 2015
Page 7

On behalf of our client, AEP, we respectfully request your comments on potential impacts to the species above in relation to the proposed Project. If you have any questions or require additional information, please contact Suzann Collins at 215-640-9118 or by email at Suzann.Collins@ch2m.com, or Mark Driscoll at 617-626-7061 or by email at Mark.Driscoll@ch2m.com.

Sincerely,



Suzann Collins
Environmental Scientist



Mark Driscoll
Project Manager

cc: Ms. Liz Decima, AEP

Attachments:

- Attachment 1 Figures
- Attachment 2 ODNR Correspondence
- Attachment 3 Photographic Documentation

References

- Freshwater Mollusk Conservation Society (FMCS), 2015. Where do Mussels Live?
<http://molluskconservation.org/MUSSELS/Habitat.html>. Accessed January 26, 2015.
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- ODNR DOW. 2012. State Listed Species for Pickaway Co.
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- Wisconsin Odonata Survey. 2015. *Gomphus externus*: Plains Clubtail.
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Attachments available upon request



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate

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

April 8, 2015

Suzann Collins
CH2M HILL
10123 Alliance Road, Suite 300
Cincinnati, Ohio 45242

Re: 15-205; Threatened and Endangered Species Habitat Assessment, American Electric Power Company, Inc., Proposed 138 kV Sciippo Extension and Scioto Trail - Circleville Project

Project: The proposed project involves the extension of a 0.79 mile electric transmission line for the Sciippo Extension and the installation of a 2.54 mile electric transmission line for the Scioto Trail- Circleville line.

Location: The project is located in Circleville, Pickaway County, Ohio.

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

Natural Heritage Database: The Natural Heritage Database has the following comment.

Data was already provided in a November 5, 2014 data request and is included and discussed in the project documentation.

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

The DOW recommends that impacts to 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 snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the northern riffleshell (*Epioblasma torulosa rangiana*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the rabbitsfoot (*Quadrula cylindrica cylindrica*), a state endangered and federal candidate mussel, the washboard (*Megaloniais nervosa*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the elephant-ear (*Elliptio crassidens*), a state endangered mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the Scioto madtom (*Noturus trautmani*), a state endangered and federally endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish and a federal species of concern, the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the northern madtom (*Noturus stigmosus*), a state endangered fish, the goldeye (*Hiodon alosoides*), a state endangered fish, the shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, the paddlefish (*Polyodon spathula*), a state threatened fish, and the lake chubsucker (*Erimyzon sucetta*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these 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



CH2M HILL
10123 Alliance Road
Suite 300
Cincinnati, OH 45242
Tel 513.530.5520
Fax 513.530.5541

February 12, 2015

Dr. Mary Knapp
U.S. Fish and Wildlife Service
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230

Subject: **Threatened and Endangered Species Habitat Assessment
American Electric Power Company, Inc., Proposed 138 kV Scippo Extension and Scioto
Trail – Circleville Project in Pickaway County, Ohio**

Dear Dr. Knapp:

On behalf of American Electric Power Company, Inc. (AEP), CH2M HILL Engineers, Inc. (CH2M HILL) requests comments from the U.S. Fish and Wildlife Service (USFWS) on the effect of the proposed 138 kilovolt (kV) Scippo Extension and Scioto Trail – Circleville Project (the Project) in Circleville, Pickaway County, Ohio on federally-listed threatened and endangered species.

The Project involves the extension of a 0.79 mile electric transmission line for the Scippo Extension and the installation of a 2.54 mile electric transmission line for the Scioto Trail – Circleville line (Attachment 1; Figure 1). The proposed Project is being constructed to correct existing system issues, which require immediate facility upgrades to remediate. While these are two distinct transmission line projects, they are both connected from an engineering and geographic perspective and as such are both combined for one Project review. AEP plans to use the existing right-of-way (ROW) as much as practicable for construction of the Project. Activities outside of existing ROW will be limited to access roads, a 0.79-mile extension (Scippo Extension), and a 0.9-mile relocation (Scioto Trail – Circleville Line) within a new 100-foot ROW.

1.0 Background

AEP retained CH2M HILL to review available information and assess threatened and endangered species habitat within the Project area (Attachment 1). Prior to site visits on October 30, 2014 and January 27, 2015, CH2M HILL reviewed the USFWS Endangered Species of the Midwest Region website (USFWS, 2014a) for information on federally listed, proposed endangered, proposed threatened, and candidate species known to occur, or potentially occur, in Pickaway County. CH2M HILL also reviewed the relevant U.S. Geological Survey (USGS) topographic maps (Circleville; Attachment 1; Figure 1).

Additionally, CH2M HILL submitted an Ohio Biodiversity Request and mapping to the Ohio Department of Natural Resources, Division of Wildlife (ODNR DOW) via email on October 30, 2014, to solicit information on known occurrences of federally listed and state-listed species within a 1.5-mile radius of the Project area. Through this request, CH2M HILL obtained geographic information system (GIS) data on November 5, 2014, that outlined known records of state- and federally-listed species within the Project area. CH2M HILL has reviewed this information and summarized it below and in Figure 2 of Attachment 1; the consultation letter provided by the ODNR is located in Attachment 2.

2.0 Results of Document Review

The USFWS identified the federally-listed species listed in Table 1 as occurring, or potentially occurring, in Pickaway County.

TABLE 1

Federally-listed Species Identified within Pickaway County, Ohio

Common Name (Federal Status) ¹	Species Name	Federal Listing ¹	Category	General Habitat Notes ^{2,3}
Indiana bat (Endangered)	<i>Myotis sodalis</i>	E	Vertebrate Animal - Mammal	Hibernates in caves and mines. Roosts in exfoliating/loose tree bark of living and dead trees, or cavities and hollows of dead trees. Maternity and foraging habitat includes small stream corridors with well-developed riparian woods and upland forests ^{2,3}
Northern long-eared bat (Proposed as Endangered)	<i>Myotis septentrionalis</i>	P E	Vertebrate Animal - Mammal	Hibernates in caves and mines. Swarms in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests. In summer, night roosts include caves, mines, quarry tunnels, while day roosts include crevices, hollows, or under loose bark of trees, or in small spaces associated with buildings and other structures ^{2,3}
Scioto Madtom (Endangered)	<i>Noturus trautmani</i>	E	Vertebrate Animal - Fish	Creek with moderate gradient and riffles. This species is found near riffles with decreasing velocity and a sandy gravel substrate ³
Clubshell (Endangered)	<i>Pleurobema clava</i>	E	Invertebrate Animal	This mussel prefers clean, loose sand and gravel in medium to small rivers and streams. This mussel will bury itself in the bottom substrate to depths of up to 4 inches ⁴
Northern Riffleshell (Endangered)	<i>Epioblasma torulosa rangiana</i>	E	Invertebrate Animal	Freshwater, high gradient, creek - medium river within riffles. Found in riffles in areas of well-packed fine gravel and swiftly moving water with high oxygen ³
Rabbitsfoot (Threatened)	<i>Quadrula cylindrica cylindrica</i>	T	Invertebrate Animal	Typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams, it inhabits bars or gravel and cobble close to the fast current. Found in medium to large rivers in sand and gravel ³
Rayed Bean (Endangered)	<i>Villosa fabalis</i>	E	Invertebrate Animal	Generally known from smaller headwater creeks, found in riffles with substrates composed of gravel and sand ³
Snuffbox (Endangered)	<i>Epioblasma triquetra</i>	E	Invertebrate Animal	Found in riffles of medium and large rivers with stony or sandy bottoms, in swift currents, usually deeply buried ³

Federally Listed Species - E = Endangered; T = Threatened; P E = Proposed as Endangered

¹Source: USFWS, 2014a

²Source: ODNR DOW, 2014

³Source: NatureServe Explorer, 2015

⁴Source: USFWS, 2014b

The ODNR DOW (Schneider, 2014) identified nineteen species and one habitat type, listed in Table 2, as occurring or potentially occurring within 1.5 miles of the Project area. Known locations provided by the ODNR DOW are depicted in Figure 2 of Attachment 1. The letter received from the ODNR is located in Attachment 2.

TABLE 2

State-listed Species, Managed Areas, and Scenic Rivers Identified within a 1.5-mile Radius of the Project Area

Common Name¹ (State Status)	Species Name¹	State Listing¹	Federal Listing¹	Category	General Habitat Notes²
Spotted Darter	<i>Etheostoma maculatum</i>	E		Vertebrate Animal - Fish	Freshwater, high gradient, creek - medium river, pools and riffles. Habitat includes large rubble and boulder areas, adjacent to or in swift deep riffles, in small to medium, clear rivers ²
Tippecanoe Darter	<i>Etheostoma tippecanoe</i>	T		Vertebrate Animal - Fish	Freshwater, moderate gradient, medium river, within riffles. Habitat includes shallow gravel riffles of small to medium-sized rivers ²
Plains Clubtail	<i>Gomphus externus</i>	E		Insect	Found in mid-United States, this species prefers moderately flowing rivers and large streams with muddy bottoms, occasionally lakes ³
Rocky Mountain Bulrush	<i>Schoenoplectus saximontanus</i>	E		Vascular Plant	Prefers damp soils, freshwater ponds, ditches and seasonally wet areas ⁶
Engelmann's Spike-rush	<i>Eleocharis engelmannii</i>	E		Vascular Plant	Open mudflats, in late summer or autumn throughout Ohio ⁵
Round-leaved Spurge	<i>Euphorbia serpens</i>	E		Vascular Plant	In full sun in moist, alluvial or rich soil; frequently in disturbed situations ⁵
Pale Umbrella-sedge	<i>Cyperus acuminatus</i>	P T		Vascular Plant	A variety of open, wet, sandy situations; shores, seepages, fields ⁵
Burhead	<i>Echinodorus berteroi</i>	T		Vascular Plant	Muddy shores and shallow water of lakes, ponds, slow-moving streams, and ditches, also in swamp woods and river bottoms ⁵
Deertoe	<i>Truncilla truncata</i>	SC		Invertebrate Animal	Freshwater, low gradient, creek - medium - big rivers, pools. This species is a generalist in river size, substrate preference, and can live in areas without currents ²
Round Pigtoe	<i>Pleurobema sintoxia</i>	SC		Invertebrate Animal	Freshwater, medium - big rivers, within riffles. This species is found in medium to large rivers in mixed mud, sand, and gravel ²
Black Sandshell	<i>Ligumia recta</i>	T		Invertebrate Animal	Freshwater, high gradient, medium - big river. It is typically found in medium-sized to large rivers with strong currents and in coarse sand/gravel substrate ²
Fawnsfoot	<i>Truncilla donaciformis</i>	T		Invertebrate Animal	Freshwater, low gradient, medium - big river, within pools or riffles. Species prefers medium - to large-sized rivers with varying depths and a sand or mud substrate ²

TABLE 2

State-listed Species, Managed Areas, and Scenic Rivers Identified within a 1.5-mile Radius of the Project Area

Common Name¹ (State Status)	Species Name¹	State Listing¹	Federal Listing¹	Category	General Habitat Notes²
Mussel Bed				Animal Assemblage	Mussels live on the bottom of streams, lakes and rivers, and can bury themselves in the substrate leaving only their siphons exposed. Where good habitat is found, dense concentrations of mussels can be found (Freshwater Mollusk Conservation Society [FMCS], 2015).

Federally Listed Species - E = Endangered; T = Threatened; P T = Potentially Threatened; SC = Special Concern

¹Source: ODNR DOW, 2014

²Source: NatureServe, 2015

³Source: Wisconsin Odonata Survey, 2015

⁵Source: ODNR Nature Preserves, 2009

⁶Source: WA DNR, 2015

3.0 Site Observations

CH2M HILL biologists investigated the Project area during site visits in October 30, 2014 and January 27, 2015, to document existing vegetation communities and hydrologic conditions. CH2M HILL identified and delineated five waterbodies within the Project area, including three perennial streams and two ephemeral streams, totaling 3,019 linear feet. Streams SRJ004 and SRJ005 are separate segments of the same stream, an unnamed tributary to the Scioto River. CH2M HILL also identified two palustrine emergent (PEM) wetlands within the Project area. Attachment 3 provides representative photos of the streams, wetlands, and habitats.

The Project area comprises an existing substation, active and inactive industrial areas, commercial areas, fallow and new field, active agricultural fields, maintained highway right-of-way (ROW), overhead utility ROW, railroad ROW, wetlands, and small secondary growth woodlands. Dominant canopy vegetation in the forested areas included sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), honey-locust (*Gleditsia triacanthos*), common hackberry (*Celtis occidentalis*), and tulip poplar (*Liriodendron tulipifera*). The understory was comprised mostly of multiflora rose (*Rosa multiflora*), hairy woodland brome (*Bromus pubescens*), and Christmas fern (*Polystichum acrostichoides*). Dominant vegetation observed within the overhead utility ROWs and fallow fields included Queen Anne's lace (*Daucus carota*), fescue, goldenrod (*Solidago* sp.), Canadian goldenrod (*Solidago canadensis*), wand panic grass (*Panicum virginica*), orchard grass (*Dactylis glomerata*), and broom-sedge (*Andropogon virginicus*). Vegetation characteristic of fallow fields was also observed in a graveled, inactive industrial area along the proposed Scippo Extension Route, north of stream SRJ004. Dominant vegetation within the maintained highway ROW and new fields included multiflora rose, clovers (*Trifolium* sp.) and fescue grasses (*Festuca* and *Schedonorus* sp.). Agricultural fields showed indications of being planted with soy beans (*Glycine max*) during the growing season. Palustrine emergent (PEM) wetlands were dominated tall scouring-rush (*Equisetum hyemale*), common reed (*Phragmites australis*), and narrow-leaf cat-tail (*Typha angustifolia*).

4.0 Listed Species Effects Determinations

Species-specific surveys have not been conducted for state or federally-listed species within the Project area. Preliminary effects determinations have been made for the federally listed endangered and candidate species identified in Table 1, as outlined in the following sections. Two state-listed species, snuffbox and the spotted darter, identified within a 1.5-mile radius of the Project area are discussed

further, as a federal listing is maintained for these species. The other state-listed species and habitat are not discussed, because they do not maintain a federal listing.

Indiana Bat

In Ohio, Indiana bats are currently known to inhabit a limited number of abandoned mines during the winter months. In the summer months, Indiana bats are found in both the glaciated and unglaciated portions of the state (USFWS, 2007). According to the USFWS (2007), Indiana bat colonies have been documented within Pickaway County, including maternity records.

A habitat assessment and pedestrian survey of potentially suitable Indiana bat habitats within the Project area was completed during site visits conducted on October 30, 2014 and January 27, 2015. Potential summer roosting and foraging habitat was observed within the Project area. No caves or sinkholes were observed, although an extensive survey was not performed. Several snags were noted along the route, which may possibly be used by maternity colonies.

Approximately 3.5 acres of forest habitat will be cleared for this Project. As indicated in Table 1, suitable habitat for the Indiana bat is caves and mines and surrounding wooded areas, upland forests and woods. As previously noted, trees identified within the Project area include sugar maple, black cherry, honey-locust, common hackberry, and tulip poplar. These species were located within developed areas and along fencerows in pastures. Several snags were identified within the Project area. Project construction will be limited to Columbia's existing 50-foot wide permanent ROW and the majority of trees identified within the Project area were located outside of the permanent ROW. Photographs of the Project area are included in Attachment 3. At this time, Columbia is requesting confirmation that suitable habitat for this species is not present within the Project area.

Northern Long-eared Bat

The Northern long-eared bat has been heavily impacted by white-nose syndrome, and due to this sudden, sharp decline has been proposed to be listed as endangered (USFWS, 2015a). This species spends winter hibernating in caves and abandoned mines, typically seeking caves/mines with large passages and entrances, with constant temperatures and high humidity. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. This species may also be found in caves and mines during the summer (USFWS, 2015b). As previously stated, the northern long-eared bat has been heavily impacted by white-nose syndrome. White-nose syndrome can be found throughout Ohio. Within Ohio, Pickaway County has not been identified as a County with a white-nose syndrome infected hibernacula; however, neighboring Hocking County has been identified as a County with a white-nose syndrome infected hibernacula (USFWS, 2015c).

A habitat assessment and pedestrian survey of potentially suitable Northern long-eared bat habitat within the Project area was completed during site visits on October 30, 2014 and January 27, 2015. Potential summer roosting and foraging habitat was observed within the Project area. No caves or sinkholes were observed, although an extensive survey was not performed.

Approximately 3.5 acres of forest habitat will be cleared for this Project. As indicated in Table 1, suitable habitat for the northern long-eared bat is caves and mines and surrounding wooded areas, upland forests and woods. As previously noted, trees identified within the Project area include sugar maple, black cherry, honey-locust, common hackberry, and tulip poplar. These species were located within developed areas and along fencerows in pastures. Several snags were identified within the Project area. Project construction will be limited to Columbia's existing 50-foot wide permanent ROW and the majority of trees

identified within the Project area were located outside of the permanent ROW. Photographs of the Project area are included in Attachment 3.

Project construction is anticipated to begin in the spring of 2016, after the anticipated listing of the northern long eared bat in the spring of 2015. At this time, Columbia is requesting confirmation that suitable habitat for this species is not present within the Project area.

Scioto Madtom

This species of catfish prefers stream riffles with moderate currents and gravel bottoms, with no suspended sediments and high quality water. This fish is thought to be endemic to the Scioto River, and has only been found within Big Darby Creek (USFWS, 1997).

This Project is downstream of Big Darby Creek's confluence with the Scioto River. Big Darby Creek and the Scioto River will not be crossed by this Project. A habitat assessment and pedestrian survey of potentially suitable habitat for the Scioto madtom within the Project area was completed during the October 30, 2014 site visit. Data obtained from the ODNR DOW did not indicate known occurrences within a 1.5-mile radius of the Project area. One Class III PWH stream (SRJ003) is crossed by the Project. Riffles and a substrate composition of cobble, gravel, silt, and clay were noted within this stream. No fish were observed at the time of the field survey. Due to the absence of crossing Big Darby Creek and the Scioto River, the limited number of potential habitat areas, as well as a lack of known occurrences within the Project area, CH2M HILL requests USFWS concurrence that the Project is not likely to adversely affect the Scioto madtom.

Clubshell Mussel

As indicated in Table 1, this mussel prefers clean, loose sand and gravel in medium to small rivers and streams (USFWS, 2014b). Most streams observed within the Project area were small perennial streams and ephemeral drainages. These streams did not possess suitable habitat for the clubshell mussel. Data obtained from the ODNR DOW did not indicate known occurrences within 1.5-mile radius miles of the Project area. Based on the lack of known populations and the lack of suitable habitat within the Project area, CH2M HILL requests USFWS concurrence that the Project will have no effect on the clubshell mussel.

Northern Riffleshell Mussel

As indicated in Table 1, this mussel prefers high gradient streams with shallow water, living within riffles with coarse gravel substrates (NatureServe Explorer, 2015). Most streams observed within the Project area were small perennial streams and ephemeral drainages. These streams did not possess suitable habitat for the northern riffleshell mussel. Data obtained from the ODNR DOW did not indicate known occurrences within 1.5-mile radius of the Project area. Based on the lack of known populations and the lack of suitable habitat within the Project area, CH2M HILL requests USFWS concurrence that the Project will have no effect on the northern riffleshell mussel.

Rabbitsfoot Mussel

As indicated in Table 1, this mussel prefers small – large rivers with moderate to swift currents, and small streams with gravel bars or cobble near fast currents (NatureServe, 2015). Most streams observed within the Project area were small perennial streams and ephemeral drainages. These streams did not possess suitable habitat for the rabbitsfoot mussel. Data obtained from the ODNR DOW did not indicate known occurrences within 1.5-mile radius of the Project area. Based on the lack of known populations and the lack of suitable habitat within the Project area, CH2M HILL requests USFWS concurrence that the Project will have no effect on the rabbitsfoot mussel.

Rayed Bean Mussel

As indicated in Table 1, this mussel prefers is found in smaller, headwater creeks and occasionally in larger rivers. It prefers riffle areas and gravel or sand substrates (NatureServe, 2015). Most streams observed within the Project area were small perennial streams and ephemeral drainages. These streams did not possess suitable habitat for the rayed bean mussel. Data obtained from the ODNR DOW did not indicate known occurrences within 1.5-mile radius of the Project area. Based on the lack of known populations and the lack of suitable habitat within the Project area, CH2M HILL requests USFWS concurrence that the Project will have no effect on the rayed bean mussel.

Snuffbox Mussel

As indicated in Table 1, this mussel prefers medium- to large-rivers with stony or sandy bottoms in swift currents (NatureServe, 2015). Most streams observed within the Project area were small perennial streams and ephemeral drainages. These streams did not possess suitable habitat for the snuffbox mussel. Data obtained from the ODNR DOW indicated one known occurrence of the snuffbox mussel within 1.5-mile radius of the Project area. However, due to lack of suitable habitat within the Project area, CH2M HILL requests USFWS concurrence that the Project will have no effect on the snuffbox mussel.

5.0 Other Species Effects Determinations

Bald Eagle

Data obtained from the ODNR DOW did not indicate known occurrences of the bald eagle (*Haliaeetus leucocephalus*) within a 1.5-mile radius of the Project area. The Scioto River and Big Darby Creek are the only large bodies of water located within a 1.5-mile radius of the Project area. No nests were observed during the site visits; however, a specific nest survey was not conducted. Although the USFWS removed the bald eagle from the federal list of threatened and endangered species in August 2007, the bald eagle is protected under the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and Lacey Act (USFWS, 2012b). Therefore, based on the lack of known occurrences within the vicinity of the Project area, it is the opinion of CH2M HILL that the Project may affect, but is not likely to affect the bald eagle.

6.0 Conclusions

No occurrences of the federally listed endangered Indiana bat, rayed bean mussel, northern riffleshell mussel, clubshell mussel, or Scioto madtom, or federally listed threatened rabbitsfoot mussel, or proposed endangered northern long-eared bat are known to be within the Project area or its immediate vicinity. The snuffbox mussel has been identified within a 1.5-mile radius of the Project area, however, suitable habitat for the snuffbox mussel was not found during surveys. Transmission pole foundations will be located outside of wetlands and streams to the extent practicable. Therefore, the proposed 138 kV Scippo Extension and Scioto Trail-Circleville Projects will not affect any of the listed mussel species or fish species.

The Indiana bat and the northern long-eared bat may be affected but not adversely affected by the Project. Bald eagles were not observed within the Project area or its vicinity during field surveys, and no occurrences of the bald eagle have been documented within a 1.5-mile radius of the Project area. Based on the lack of known occurrences within the vicinity of the Project area, CH2M HILL believes that the Project may affect, but is not likely to affect the bald eagle.

7.0 Closing

On behalf of our client, AEP, we respectfully request your concurrence with the above effects determinations for federally listed species. If you have any questions or require additional information, please contact Suzann Collins at 215-640-9118 or via Suzann.Collins@ch2m.com, or Mark Driscoll at 617-626-7061 or via email at Mark.Driscoll@ch2m.com.

Sincerely,



Suzann Collins
Environmental Scientist



Mark Driscoll
Project Manager

cc: Ms. Liz Decima, AEP

Attachments:

- Attachment 1 Figures
- Attachment 2 ODNR Consultation Letter
- Attachment 3 Photographic Documentation

8.0 References

- ODNR DOW. 2014. Wildlife that are Considered to be Endangered, Threatened, Species of Concern, Special Interest, Extirpated or Extinct in Ohio. <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf>. Accessed January 22, 2015.
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Attachments available upon request

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Wednesday, February 25, 2015 11:42 AM
To: Driscoll, Mark/BOS; Collins, Suzann/PHL
Cc: nathan.reardon@dnr.state.oh.us; Jenny Norris
Subject: AEP Proposed 138 kV Scippo Extension and Scioto Trail, Circleville, Pickaway 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# 03E15000-2015-TA-0784

Dear Mr. Driscoll,

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

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

LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the **Indiana bat** (*Myotis sodalis*), a federally listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat, including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. During winter, Indiana bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

- (1) dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas;
- (2) live trees (such as shagbark hickory and oaks) which have exfoliating bark;
- (3) stream corridors, riparian areas, and upland woodlots which provide forage sites.

Should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed above and/or the site contains any caves or abandoned mines, we recommend that the habitat and surrounding trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if surveys are warranted. Any survey should be designed and conducted in coordination with the Endangered Species Coordinator for this office. If no caves or abandoned mines are present and trees cannot be avoided, any unavoidable tree removal should only occur between October 1 and March 31. If implementation of the seasonal tree cutting restriction is not possible, summer surveys should be conducted to document the presence or likely absence of the Indiana bat within the project area during the summer. The survey must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office.

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

PROPOSED SPECIES COMMENTS: The proposed project lies within the range of the **northern long-eared bat** (*Myotis septentrionalis*), a species that is currently proposed for listing as federally endangered under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). The final listing decision for the northern long-eared bat will occur no later than April 2, 2015. No critical habitat has been proposed at this time. Recently white-nose syndrome (WNS), a novel fungal pathogen, has caused serious declines in the northern long-eared bat population in the northeastern U.S. WNS has also been documented in Ohio, but the full extent of the impacts from WNS in Ohio is not yet known.

During winter, northern long-eared bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

- (1) Roosting habitat in dead or live trees and snags with cavities, peeling or exfoliating bark, split tree trunk and/or branches, which may be used as maternity roost areas;
- (2) Foraging habitat in upland and lowland woodlots and tree lined corridors;
- (3) Occasionally they may roost in structures like barns and sheds.

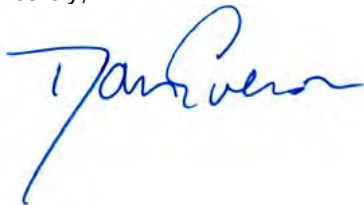
Pursuant to section 7(a)(4) of the ESA, federal action agencies are required to confer with the Service if their proposed action is likely to jeopardize the continued existence of the northern long-eared bat (50 CFR 402.10(a)). Federal action agencies may also voluntarily confer with the Service if the proposed action may affect a proposed species. Nevertheless, species proposed for listing are not afforded protection under the ESA; however as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and “take” applies regardless of an action’s stage of completion. If the federal agency retains any discretionary involvement or control over on-the-ground actions that may affect the species after listing, section 7 applies. Therefore, should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed above and/or the site contains any caves or abandoned mines, we are recommending that the habitat and surrounding trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if surveys are warranted.

If no caves or abandoned mines are present and trees cannot be avoided, any unavoidable tree removal should only occur between October 1 and March 31 to avoid impacts to northern long-eared bats. Incorporating these conservation measures into your project at this time may avoid significant future project delays should the listing become official.

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

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (ESA), as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife 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. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

Sincerely,



Dan Everson

Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW

Jennifer Norris, ODNR-DOW

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in

Case No(s). 15-0357-EL-BLN

Summary: Letter of Notification for the Scippo Extension and Scioto Trail-Circleville Project electronically filed by Mr. Ajay K Kumar on behalf of AEP Ohio Transmission Company