

APPENDIX B

AREAS OF ECOLOGICAL CONCERN, WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

SPORN-MUSKINGUM RIVER 345KV TRANSMISSION LINE REBUILD PROJECT

**(Sporn - Waterford 345kV Circuit &
Muskingum River - Sporn 345kV
Circuit)**

AREAS OF ECOLOGICAL CONCERN, WETLAND DELINEATION, AND STREAM ASSESSMENT REPORT

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April 2014

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1.0 PROJECT DESCRIPTION

This document presents the results of the wetland and stream assessment conducted by Commonwealth Associates Inc. (Commonwealth) on behalf of American Electric Power Ohio Transmission Company (AEP Transco) for the Sporn - Muskingum River 345kV transmission line rebuild project (Project). The Project is located in the Ohio counties of Meigs, Athens, Washington, and Morgan, and the West Virginia county of Mason. It is approximately 49.9 miles long and consists of the 48.7 mile long Sporn – Muskingum River 345kV transmission line and the approximately 1.0 mile long Waterford 345kV Extension. The site location map, included at the end of this report, depicts the Project within the counties and in relation to nearby roads, railroads, towns, rivers and streams, and other transmission lines.

PJM Interconnection (PJM), the regional transmission organization (RTO) that coordinates the movement of wholesale electricity in the Project area, has identified multiple overloads on various AEP circuits due to the proposed retirement of the Sporn and other coal fired generation facilities, and the increased growing electrical demand in the area. In response to PJM's findings, AEP Ohio Transco is proposing to rebuild the Sporn - Muskingum River line by re-conductoring the single circuit as a double circuit and re-conductoring the south circuit of the Waterford 345kV Extension. The rebuild will require installing two new steel monopoles and replacing or reinforcing nine (9) lattice towers in Ohio, and replacing nine (9) lattice towers in West Virginia. Once complete, the Sporn to Muskingum River line will consist of two individual circuits – the Sporn to Waterford 345kV circuit and the Muskingum River to Sporn 345kV circuit.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to describe the investigation concerning the presence or absence of areas of ecological concern as stated in Ohio Administrative Code (OAC) Rule 4906-15-11-01(E)(2). This rule states:

- (E) *Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:*
 - (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.*

AEP Ohio Transco retained Commonwealth to review areas of ecological concern, as defined above, within the proposed Project and conduct a field assessment of wetlands and streams within the 150-foot wide Project corridor. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to these areas during project design and site development.

2.0 METHODS

2.1 Preliminary Resource Review

Prior to conducting the field portion of the study, Commonwealth reviewed maps, GIS data, and other readily available information in order to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife

management areas, and wildlife sanctuaries in the Project vicinity. The review also provided valuable site information including relief, cover, soils, land ownership, and land use that was then used to make preliminary determinations of wetlands and streams that might be present within the Project corridor. The review included, but was not limited to, the following resources:

- Google Earth, digital aerial photographs
- U.S. Geological Survey (USGS), topographic quadrangle maps
- Natural Resources Conservation Service (NRCS), Web Soil Survey (WSS)
- Natural Resources Conservation Service (NRCS), WETS data
- U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) Wetlands Mapper
- Federal Emergency Management Agency (FEMA), Flood Map Viewer

2.2 Field Review

After completing the office review, Commonwealth then conducted site visits to evaluate any preliminary wetland or stream determinations that had been made in the office and, where possible, to make new determinations by identifying vegetation communities, characterizing soils, assessing hydrology, and noting any disturbances. Two methodologies were relied upon during the field review; one for identifying and delineating wetlands and the other for assessing rivers and streams. The methods are described further in the following sections.

2.2.1 Wetland Identification and Delineation

Identifying and delineating wetlands followed those methods outlined in the U.S. Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*. In the 1987 Manual a definition is provided that indicates “wetlands” are essentially areas that have positive evidence of three parameters - hydric soils, wetland hydrology, and hydrophytic vegetation. During the office review, Commonwealth collected available information regarding the three parameters and used the data to make preliminary determinations of wetland presence. A site visit was then conducted to identify, where possible, vegetation communities, characterize soils, assess hydrology, and note disturbances. Preliminary wetland boundaries were noted where one or more of these criteria gave way to upland characteristics. Where towers are to be replaced or reinforced, and accessibility was not an issue, sample plots were established, wetland data was collected and recorded, wetland boundaries were delineated, and sample plots and boundary points were GPS surveyed.

Preliminary data gathered prior to the site visit is summarized in Section 3.1 of this report. Data collected during the delineation of any wetland is summarized in Section 3.2 of this report. The methodology used to examine each parameter is described in the following sections.

Soils: Soil profiles were examined by digging soil pits and recording hydric soil characteristics. A *Munsell Soil Color Chart* was used to identify the hue, value, and chroma of the matrix and mottles of the soil. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics. In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

Hydrology: The 1987 Manual requires that an area be inundated or saturated to the surface for a minimum of five percent of the growing season (areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The Regional Supplements state that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature at the 12-in. depth is 41 °F or higher. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later. The Regional Supplements also state that if onsite data gathering is not practical, the growing season can be approximated by the median dates (i.e., 5 years in 10, or 50 percent probability) of 28°F.

The soils and ground surface are examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the 1987 Manual and the Regional Supplements. Evidence indicating wetland hydrology typically includes primary indicators such as surface water (A2), saturation (A3), water marks (B1), sediment deposits (B2), drift deposits (B3), water-stained leaves (B9), and oxidized rhizospheres along living roots (C3); and secondary indicators such as, drainage patterns (B10), geomorphic position (D2), saturation visible on aerial imagery (C9), FAC-neutral test (D5).

Vegetation: Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate (OBL), facultative wet (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the 2012 *National Wetland Plant List*. The wetland indicator status reflects the likelihood of a species occurring in a wetland versus non-wetland habitat. The various indicator status designations are explained further in Table 1 below. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation.

TABLE 1
WETLAND INDICATOR STATUS DESIGNATIONS

Indicator Category	Indicator Symbol ¹	Definition
Obligate	OBL	Almost always is a hydrophyte, rarely in uplands
Facultative Wet	FACW	Usually is a hydrophyte but occasionally found in uplands
Facultative	FAC	Commonly occurs as either a hydrophyte or non-hydrophyte
Facultative Upland	FACU	Occasionally is a hydrophyte but usually occurs in uplands
Upland	UPL	Rarely is a hydrophyte, almost always in uplands

¹ Indicator status modifiers (+ and -) are no longer used

2.2.2 Rivers and Streams Assessment

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and “designated uses” to all “Waters of the U.S.” upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act (FWPCA) of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be

supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). Where safety and accessibility was an issue, and no activity was planned, rivers and streams were indirectly assessed through observation, comparison to upper and lower reaches of the stream in question, and comparison to other streams within the same topographic and geologic setting. Results obtained either directly or indirectly are discussed in Section 3.3 of this report.

3.0 RESULTS

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

3.1 Preliminary Resource Review

Areas of Ecological Concern: Based on published resources, no state forests and national or state parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries are crossed by the Project. The Project does cross the boundaries of the Wayne National Forest. The Forest boundaries surround a checker-board of ownership, with public and private ownership interspersed. The Project is entirely within privately owned land.

Floodplains: A review of FEMA Flood Risk Maps identified eight Special Flood Hazard Areas (SFHA's) within the Project corridor: seven 100-year flood zones and one regulatory floodway. No impacts to any of the 100-year flood zones are anticipated. Lattice tower 165-9, located on the south side of the Ohio River in West Virginia, is currently within a regulatory floodway. The tower is to be replaced within the same regulatory floodway by a similarly sized lattice tower. No significant change in the flood elevation is expected as a result of the tower replacement. The SFHA's and their boundaries have been included on the Map Sheets at the end of this report.

Topography: The Project is located on the Beverly, Watertown, Chesterhill, Cutler, Coolville, Alfred, Chester, and New Haven USGS topographic quadrangle maps and is depicted as primarily forested and extensively dissected by drainageways. The landscape is steeply sloped with elevations Above Mean Sea Level (AMSL) ranging from approximately 560 feet along the Ohio River to approximately 960 feet near STR. #202. Strip mining was common method of accessing and extracting coal in this area after World War II. As a result, many of the hillsides are terraced, although the feature is not depicted on the maps due to scale. USGS contours and elevations have been included on the Map Sheets at the end of this report.

Geology: The site is located entirely within the physiographic region known as the Marietta Plateau. Bedrock geology in this region has a relatively uniform layering that is sedimentary in origin and composed primarily of shales, siltstones, limestones, sandstones, and coals. The layering was variable

but evident along the entire length of the site and allowed for assumptions to be made regarding stream presence and classification.

Growing Season: The National Weather Service WETS data, obtained from the NRCS National Water and Climate Center, reveals that in an average year, the growing season in Morgan County begins on April 20 and lasts until October 27, or 199 days; in Washington County begins on April 8 and lasts until October 29, or 203 days; in Athens County is unknown; in Meigs County begins on April 20 and lasts until October 19, or 181 days; and, in Mason County begins on April 10 and lasts until October 31, or 204 days. Five percent of the growing season for all of the counties equates to approximately 9-10 days.

Hydrologic Units: A review of United States Geological Survey (USGS) watershed data indicates the Project is located in Upper Ohio and Muskingum Subregions and Upper Ohio-Shade, Hocking, and Muskingum Sub-basins. The Project includes aerial crossings of Hayward Run, Hocking River, Jordan Run, Fourmile Creek, Meigs Creek, East Branch Shade River, Big Run, Gilbert Run, West Branch Wolf Creek, Shade River, Horse Cave Creek, Aumiller Creek, the Ohio River, and numerous unnamed tributaries to these streams and rivers. The Hydrologic Unit Code's (HUC's) and their boundaries, as well as rivers, streams, wetlands, any significant ponds or ditches crossed by the Project have been included on the Map Sheets at the end of this report. Sub-basins and sub-watersheds crossed by the Project, as well as the structures located in each watershed, are provided in Table 2 below.

**TABLE 2
WATERSHEDS CROSSED BY THE PROJECT**

Sub-basin Name	Sub-watershed Name	Hydrologic Unit Code (HUC-12)	Structure #
Upper Ohio-Shade	Broad Run-Ohio River	050302020805	165-1 – 165-3
	West Creek-Ohio River	050302020804	165-4 - 24
	Broad Run-Ohio River	050302020805	25-27
	Horse Cave Creek	050302020301	28-44
	Spruce Creek-Shade River	050302020304	45-56
	Big Run-East Branch Shade River	050302020303	57-70
	Headwaters East Branch Shade River	050302020302	71-93
Hocking	Fourmile Creek	050302041003	94-111
	Frost Run-Hocking River	050302041004	112-128
Upper Ohio-Shade	West Branch Little Hocking River	050302020104	129-163
Muskingum	South West Branch Wolf Creek	050400040901	164-176
	Hayward Run-Wolf Creek	050400041004	177-223
	Congress Run-Muskingum River	050400041105	224-229

Soils: According to the USDA-NRCS Web Soil Survey (WSS) 111 different mapping units within 62 soil series crossed by the Project. Where towers are to be replaced or reinforced, 24 mapping units within 17 different soil series are crossed by the Project. Two of the 24 mapping units, Lindside silt loam (LtA) and Orrville silt loam (Or), are listed on National List of Hydric Soils (USDA, 2014) as “hydric” because they contain components that are hydric or suggest a regime that results in a hydric soil. Although the Orrville mapping unit is near tower 16, which is to be replaced, neither it nor the Lindside mapping unit are expected to be directly impacted by the Project. A list of the soils that are present at pole replacement

and reinforcement sites, along with their basic attributes, is provided in Table 3 on the following page. A copy of the WSS for the entire Project is provided in Appendix A.

TABLE 3
USDA MAPPED SOILS CROSSED BY THE PROJECT

Soil Series	Mapping Unit Symbol	Mapping Unit Description	County (State) ¹	Slopes (%)	Hydric Soil?	Hydric Component	Hydric Criteria ²
Gallipolis	GbB	Gallipolis silt loam	Meigs (OH)	2 to 6	no	n/a	n/a
Gilpin, Summitville, Upshur	GkD	Gilpin-Summitville-Upshur complex	Washington (OH)	12 to 18	no	n/a	n/a
	GIG	Gilpin-Summitville-Upshur complex, benched	Washington (OH)	35 to 70	no	n/a	n/a
Gilpin, Peabody	GmF	Gilpin-Peabody complex, very stony	Mason (WV)	35 to 65	no	n/a	n/a
Gilpin, Upshur	GpC	Gilpin-Upshur complex	Mason (WV)	8 to 15	no	n/a	n/a
	GpD	Gilpin-Upshur complex	Mason (WV)	15 to 25	no	n/a	n/a
	GpE	Gilpin-Upshur complex	Mason (WV)	25 to 35	no	n/a	n/a
Guernsey, Upshur	GuC	Guernsey-Upshur complex	Athens (OH)	8 to 15	no	n/a	n/a
Lakin	LaB	Lakin loamy fine sand	Mason (WV)	3 to 8	no	n/a	n/a
Licking	LkC2	Licking silt loam	Meigs (OH)	6 to 12	no	n/a	n/a
Lowell, Upshur	LoE	Lowell-Upshur complex	Washington (OH)	18 to 25	no	n/a	n/a
Lindside	LtA	Lindside silt loam, rarely flooded	Mason (WV)	0 to 3	yes	Melvin	2
Orrville	Or	Orrville silt loam, frequently flooded	Meigs (OH)	0 to 2	yes	Poorly drained soils	2
Steinsburg	StF	Steinsburg sandy loam	Athens (OH)	40 to 70	no	n/a	n/a
Udorthents	Ud	Udorthents, smoothed-urban land complex	Mason (WV)	0 to 65	no	n/a	n/a
Gilpin, Upshur	UgC2	Upshur-Gilpin complex, eroded	Meigs (OH)	8 to 15	no	n/a	n/a
	UgE	Upshur-Gilpin complex	Meigs (OH)	25 to 50	no	n/a	n/a
Upshur	UpD	Upshur silty clay loam	Washington (OH)	12 to 18	no	n/a	n/a
na	UX	Urban land	Washington (OH)	variable	no	n/a	n/a
Vandalia	VaF	Vandalia silty clay loam	Washington (OH)	25 to 35	no	n/a	n/a
Westmoreland, Guernsey	WhD	Westmoreland-Guernsey silt loams	Athens (OH)	15 to 25	no	n/a	n/a
Wheeling	WsA	Wheeling silt loam	Mason (WV)	0 to 3	no	n/a	n/a
Woodsfield	WtB	Woodsfield silt loam	Washington (OH)	2 to 6	no	n/a	n/a
	WtC	Woodsfield silt loam	Washington (OH)	6 to 12	no	n/a	n/a

¹The USDA-NRCS Nation List of Hydric Soils combines the West Virginia counties of Mason and Jackson.

² USDA-NRCS. Soil Survey Staff. Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Agriculture Handbook, Second Edition, Service Number 436. 1999

National Wetland Inventory: National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from U.S. Fish and Wildlife Service (USFWS) aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not

shown on NWI maps, as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to the National Wetland Inventory (NWI) *Wetlands Mapper*, the Project corridor contains twenty (20) freshwater wetlands, including five (5) Palustrine Forested wetlands, three (3) Palustrine Emergent wetlands, three (3) rivers, and nine (9) ponds. None of the wetlands are expected to be disturbed by any Project activity. A summary of each wetland is presented in Table 4 below. NWI mapped wetlands have been included on the Map Sheets at the end of this report.

TABLE 4
NWI MAPPED WETLANDS CROSSED BY THE PROJECT

Classification Code	Classification Code Description ^{1,2}	Location (pole #)	Anticipated Impact
PUB	Palustrine, Unconsolidated Bottom	Between 223 and 227	None
PFO	Palustrine, Forested	Between 221 and 222	None
PFO	Palustrine, Forested	Between 207 and 208	None
R2U	Riverine, Lower Perennial, Unconsolidated Bottom	Between 207 and 208	None
PEM	Palustrine, Emergent	Between 204 and 205	None
PUB	Palustrine, Unconsolidated Bottom	Between 204 and 205	None
PFO	Palustrine, Forested	Between 172 and 173	None
PUB	Palustrine, Unconsolidated Bottom	Between 170 and 171	None
R2U	Riverine, Lower Perennial, Unconsolidated Bottom	Between 119 and 120, and 118 and 119	None
PUB	Palustrine, Unconsolidated Bottom	Between 111 and 112	None
PUB	Palustrine, Unconsolidated Bottom	Between 110 and 111	None
PFO	Palustrine, Forested	Between 83 and 84	None
PUB	Palustrine, Unconsolidated Bottom	Between 79 and 80	None
PUB	Palustrine, Unconsolidated Bottom	Between 64 and 65	None
PUB	Palustrine, Unconsolidated Bottom	Between 56 and 57	None
PUB	Palustrine, Unconsolidated Bottom	Between 20 and 21	None
PEM	Palustrine, Emergent	Between 13 and 14	None
PFO	Palustrine, Forested	Between 11 and 12	None
R2U	Riverine, Lower Perennial, Unconsolidated Bottom	Between 165-9 and 10	None
PEM	Palustrine, Emergent	Between 165-7 and 165-8	None
Total: 20			

¹ USFWS National Wetlands Inventory Wetland Code Interpreter:
<http://137.227.242.85/Data/interpreters/wetlands.aspx>

² *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al*, 1979)

3.2 Wetland Assessment

Thirty-nine (39) wetlands totaling 8.2 acres were identified within the Project corridor. Commonwealth considers all 39 wetlands to be jurisdictional (i.e., “Waters of the U.S.”). The wetlands are of five habitat types: palustrine emergent (EM), palustrine emergent/scrub-shrub (EM/SS), palustrine scrub-shrub/emergent (SS/EM), palustrine scrub-shrub (SS), and palustrine forested (FO). Only one wetland is

anticipated to be impacted by the Project. The wetland (Wetland 16) is approximately .08 acres in size and located between towers 117 and 118. The wetland extends from one side of the Project corridor to the other and will need to be crossed in order to access tower 118 for reinforcement. The crossing is expected to be temporary, to occur where a two-track dirt road already crosses the wetland, and to be accomplished with the use of timber mat. Once reinforcement activities have been completed at tower 118, the timber mat is expected to be removed and the wetland is expected to be restored to conditions similar to what they were before the timber mat was installed. None of the remaining wetlands are expected to be impacted by the Project. Wetlands identified within the Project corridor, as well as any anticipated impact, are summarized in Table 5 below. The location and approximate extent of each wetland has been included on the Map Sheets at the end of this report. Photographs taken during the field portion of the assessment are provided in Appendix B.

TABLE 5
WETLANDS IDENTIFIED WITHIN THE PROJECT CORRIDOR

ID	Habitat Type ¹	Description	Size ²	Approximate Length ³	Anticipated Impact
Wetland 01	PEM	Emergent wetland that is located behind a storage yard and near Stream 1.	0.05	NC	None
Wetland 02	PEM	Emergent wetland that is located between a gravel road and fly ash pond.	0.01	15	None
Wetland 03	PEM	Emergent wetland that is located at the head of Stream 2.	0.02	NC	None
Wetland 04	PEM	Emergent wetland that is located between the ephemeral and intermittent parts of Stream 3.	0.07	NC	None
Wetland 05	PEM/PSS	Emergent/Scrub-shrub wetland that leads to Stream 04 (Hayward Run).	0.72	270	None
Wetland 06	PEM	Emergent wetland that leads to Stream 6.	0.03	NC	None
Wetland 07	PEM	Emergent wetland that begins as a hillside seep and leads to Stream 17.	0.07	NC	None
Wetland 08	PEM	Emergent wetland that leads to Stream 16.	0.03	NC	None
Wetland 09	PEM	Emergent wetland that is located on a hillside.	0.01	2	None
Wetland 10	PEM	Emergent wetland that is located near a pond and acts as a conveyance channel.	0.15	30	None
Wetland 11	PEM	Emergent wetland that acts as a conveyance channel from Stream 64.	0.38	40	None
Wetland 12	PEM	Emergent wetland that acts as a conveyance channel.	0.10	23	None
Wetland 13	PEM	Emergent wetland that leads to Stream 94.	0.07	40	None
Wetland 14	PFO	Forested wetland located adjacent to an old railroad grade.	0.09	25	None
Wetland 15	PSS	Scrub-shrub wetland that abuts Stream 111 (Jordan Run)	0.15	45	None
Wetland 16	PEM	Emergent wetland near existing lattice structure.	0.19	160	None
Wetland 17	PEM	Emergent wetland that acts as a conveyance channel.	0.08	25	Timber mat for access
Wetland 18	PSS/PEM	Scrub-shrub/emergent wetland that that acts as a conveyance channel from Stream 114.	0.12	20	None
Wetland 19	PEM	Emergent wetland within old farm pond.	0.37	120	None
Wetland 20	PEM	Emergent wetland that is located adjacent to Stream 136 (Meigs Creek) and appears to be an old Oxbow.	0.24	75	None
Wetland 21	PEM	Emergent wetland that is located near the bottom of	0.13	35	None

		a hill.			
Wetland 22	PEM	Emergent wetland that abuts Stream 142 (East Branch Shade River).	0.09	30	None
Wetland 23	PFO	Emergent wetland that abuts Stream 149 (Big Run).	0.48	120	None
Wetland 24	PEM	Emergent wetland located between ephemeral and intermittent parts of Stream 170.	0.09	50	None
Wetland 25	PEM/PSS	Emergent/Scrub-Shrub wetland located on either side of Stream 183.	0.63	215	None
Wetland 26	PEM	Emergent wetland that leads to Stream 185.	0.01	NC	None
Wetland 27	PEM	Emergent wetland that begins as a hillside seep and leads to Stream 187.	0.35	85	None
Wetland 28	PEM	Emergent wetland that abuts Stream 188.	0.13	50	None
Wetland 29	PEM	Emergent wetland that abuts Stream 189 (Bowmans Run).	0.08	25	None
Wetland 30	PEM	Emergent wetland that leads to Stream 194 and appears to be part of a roadside ditch.	0.04	8	None
Wetland 31	PEM	Emergent wetland that is located adjacent to Stream 194. The wetland appears to be isolated.	0.01	NC	None
Wetland 32	PEM	Emergent wetland that acts as a conveyance channel.	0.03	NC	None
Wetland 33	PEM	Emergent wetland seep that is located adjacent to a gravel road. The wetland appears to be isolated.	0.03	NC	None
Wetland 34	PEM	Emergent wetland that abuts Stream 196 (Yellowbush Creek).	0.77	230	None
Wetland 35	PFO	Forested wetland that abuts the Ohio River.	1.66	490	None
Wetland 36	PSS	Scrub/shrub wetland located adjacent to an active railroad grade.	0.08	25	None
Wetland 37	PSS/PEM	Scrub-shrub/Emergent wetland that abuts Stream 200 (West Creek).	0.30	85	None
Wetland 38 (existing)	PEM	Emergent wetland in cow pasture. Wetland too disturbed to accurately define boundary.	0.09	25	None
Wetland 39	PSS/PEM	Scrub-shrub/Emergent wetland that is partly a hillside seep and partly a conveyance channel.	0.27	85	None
Total			8.22	2,448	

¹ P = Palustrine, EM = Emergent, SS = Scrub-shrub, FO = Forested. From Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979)

² Acres of wetland within right of way. Several surveyed wetland boundaries were extended to the edge of the right of way during map development.

³ Length crossed by the centerline of the corridor. An "NC" indicates the wetland is not crossed.

3.3 Stream Assessment

Within the 150-foot Project corridor, 202 streams, totaling 28,595 linear feet and consisting of 223 stream segments, were identified. Stream flow regimes consisted of 125 ephemeral, 58 intermittent, and 18 perennial, with 22 streams falling between flow regimes because of rapid changes in topography or questionable flow. Commonwealth has preliminarily determined that all of the streams appear to be jurisdictional (i.e., "Waters of the U.S."). None of the identified streams are expected to be directly impacted by Project related activities. Streams identified within the Project corridor are summarized in the table included in Appendix C. The location and approximate extent of each stream has been included on the Map Sheets at the end of this report. Photographs taken during the field portion of the assessment are provided in Appendix B.

4.0 SUMMARY

No national or state parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries are crossed by the Project. The Project crosses the boundaries of the Wayne National Forest but not federally owned land.

Eight Special Flood Hazard Areas (SFHA's) are crossed by the Project: seven 100-year flood zones and one regulatory floodway. No impacts to any of the 100-year flood zones are anticipated. The regulatory floodway is expected to be impacted by the replacement of tower 165-9 in West Virginia but no significant change in the flood elevation is expected.

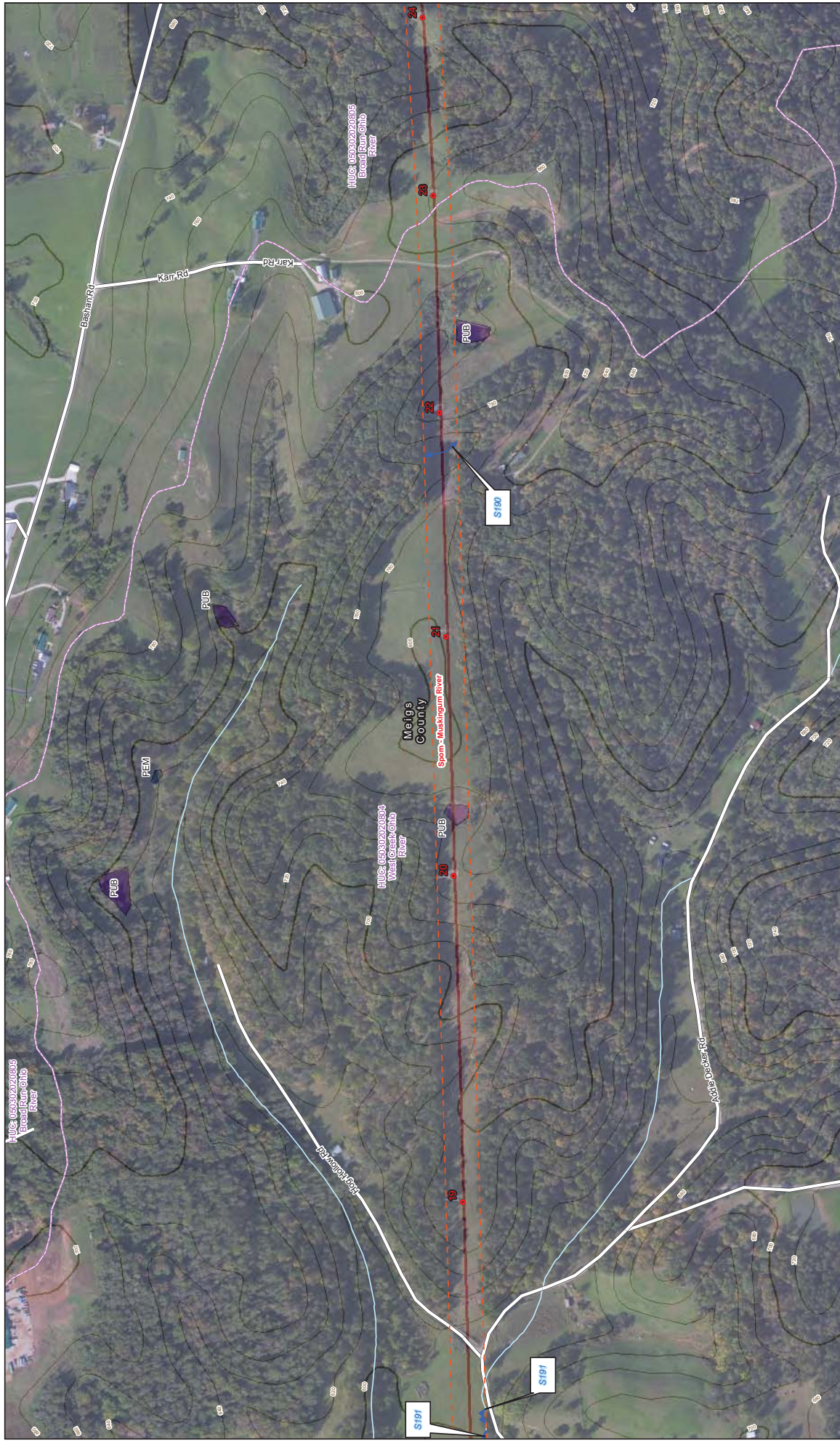
Thirty nine wetlands totaling 8.2 acres were identified within the Project corridor. Commonwealth has preliminarily determined that all of the wetlands appear to be jurisdictional (i.e., "Waters of the U.S."). One wetland (Wetland 16) is approximately .08 acres in size and is expected to be temporarily impacted by timber mat placement in order to access tower 118 for reinforcement. The total wetland impact would be approximately 120 square feet. None of the remaining wetlands identified within the Project corridor are expected to be permanently or temporarily impacted by project related activities.

Two hundred two streams totaling 28,595 feet in length were identified within the Project corridor. The streams are of three general flow regimes: ephemeral, intermittent, and perennial, and with variations between regimes. Commonwealth has preliminarily determined that all of the streams appear to be jurisdictional (i.e., "Waters of the U.S."). None of the identified streams are expected to be directly impacted by Project related activities.

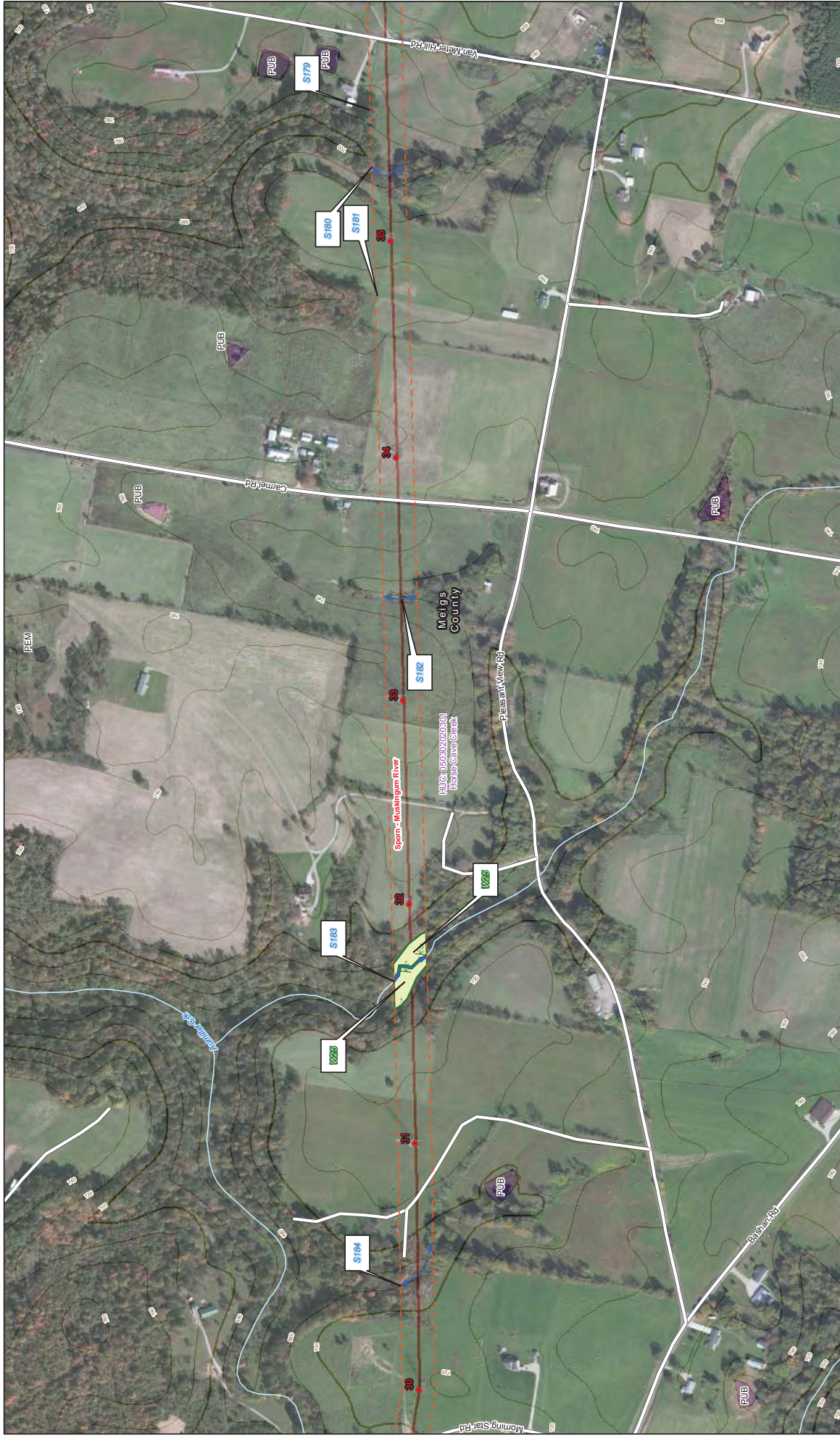
Where towers are to be replaced or reinforced, erosion, runoff, and sedimentation control measures will be installed. These measures may include temporary and permanent seed, mulch, silt fence, erosion control blankets, temporary construction entrances, concrete washouts, and temporary timber mat roads. Installing the measures will help minimize impacts to nearby streams and wetlands by protecting the soil surface from raindrop impact, controlling overland flow of storm water runoff, and capturing sediment before it can be discharged with storm water runoff to off-site areas. The specific location and type of each control measure to be installed will be addressed in detail in the overall Construction and Storm Water Pollution Prevention Plan (SWP3) for the project.


5.0 CONCLUSION

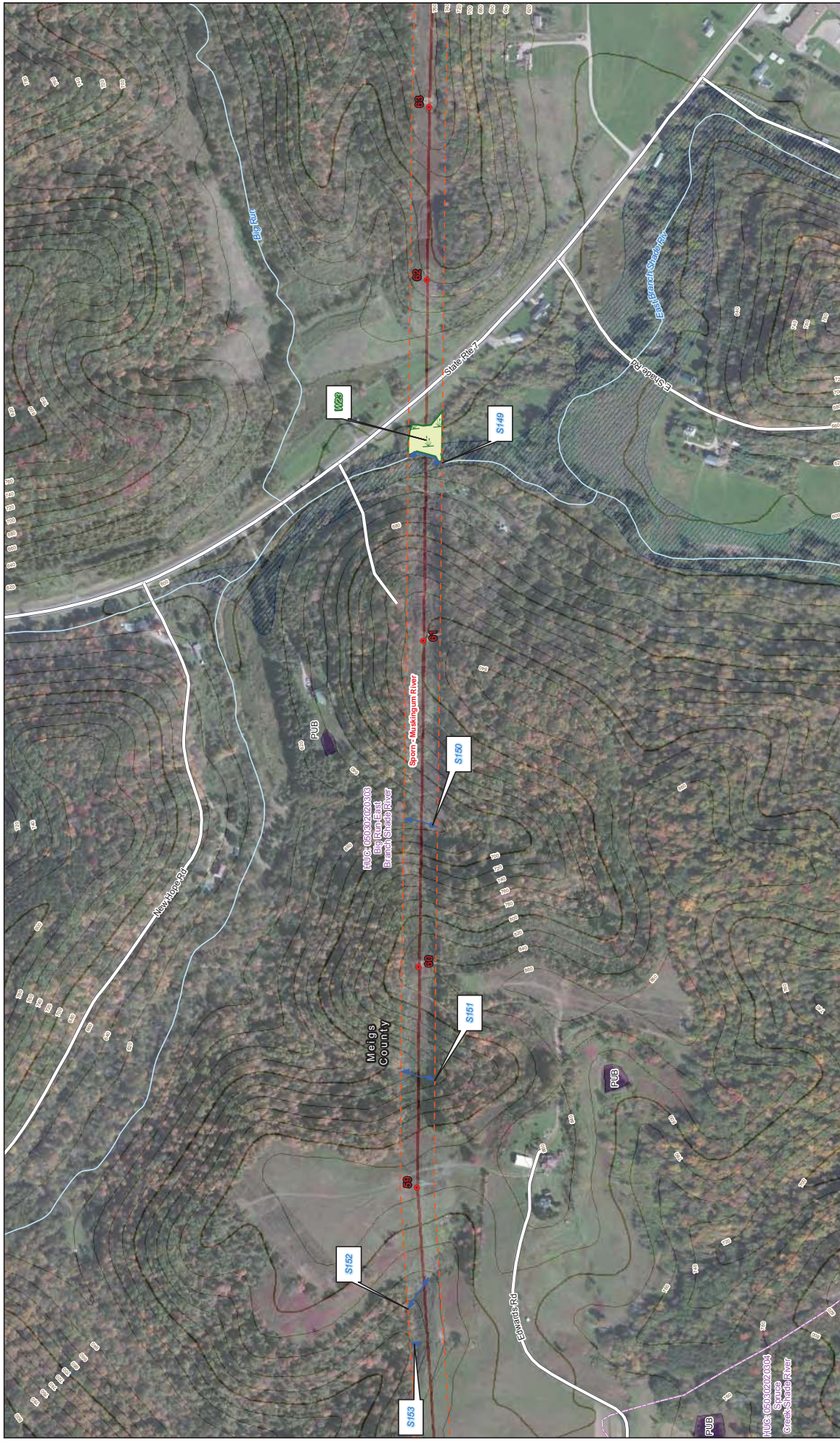
This report will be used to assist AEP Ohio Transco's efforts to avoid areas of ecological concern, wetlands, and streams to the extent feasible during Project design and development. While one wetland is anticipated to be impacted, the impact is expected to be temporary and insignificant. As a result, a notification or permit application under Sections 401 and/or 404 of the Clean Water Act for the temporary impact is not expected to be required by either the Ohio EPA or the USACE. No streams are anticipated to be impacted. However, the aerial crossings of the Hocking River (Stream 110) and the Ohio River (Stream 198) will require review by the USACE.



Legend		Scale		Date	
				1:400 (1:4,800)	
Map Sheet		Map Sheet		Map Sheet	
05 of 40		05 of 40		05 of 40	
Commonwealth		Commonwealth		Commonwealth	
AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Projected Coordinate System: Ohio State Plane		Projected Coordinate System: Ohio State Plane		Projected Coordinate System: Ohio State Plane	
Datum: North American Datum of 1983		Datum: North American Datum of 1983		Datum: North American Datum of 1983	
Projection: Lambert Conformal Conic		Projection: Lambert Conformal Conic		Projection: Lambert Conformal Conic	
Zone: South		Zone: South		Zone: South	
Linear Unit: Feet		Linear Unit: Feet		Linear Unit: Feet	
Checked: AMS		Checked: AMS		Checked: AMS	
Drawn: JEK		Drawn: JEK		Drawn: JEK	
DAL		DAL		DAL	
Transmission Company		Transmission Company		Transmission Company	
Sporn - Muskingum River		Sporn - Muskingum River		Sporn - Muskingum River	
Morgan, Washington, Athens, Meigs & Mason County, Ohio		Morgan, Washington, Athens, Meigs & Mason County, Ohio		Morgan, Washington, Athens, Meigs & Mason County, Ohio	
North Arrow		North Arrow		North Arrow	



AEP Ohio		Transmission Company		Projected Coordinate System: Ohio State Plane Datum: North American Datum of 1983 Projection: Lambert Conformal Conic Zone: South Linear Unit: Feet		Scale: 1" = 400' (1:4,800)		Date: 4/30/2014	
Sporn - Muskingum River		345kV Line				DSCR:		DAL	
Morgan, Washington, Athens, Meigs & Mason County, Ohio		Map Index				DRAWN:		JEK	
		Map Note				CHECKED:		AMS	
W		N		E		S		Commonwealth AMERICAN PUBLIC POWER	
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Legend		Scale		Date	
Existing Situation & Transmission Line		Scale: 1" = 400' (1:4,800)		Date: 4/30/2014	
Substation		Map Sheet 12 of 40		Commonwealth	
Existing 230 kV		0 200 400 Feet		AMERICAN ELECTRIC POWER	
Existing 138 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 69 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 33 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 15 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 10 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 4 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 1.5 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
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Existing 0.375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
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Existing 0.09375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.046875 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.0234375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.01171875 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.005859375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
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Existing 0.00000000000000000000000000000014791141972885727798486973947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.00000000000000000000000000000007395570986442863899243947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.00000000000000000000000000000003697785493221431949621973947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.00000000000000000000000000000001848892746610715974810936973947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.00000000000000000000000000000000924446373305357987405468486973947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.00000000000000000000000000000000462223186652678993702734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.000000000000000000000000000000002311115933263394968513671875 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.0000000000000000000000000000000011555579666316974842568486973947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.000000000000000000000000000000000577778983315848742128223947895791465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.000000000000000000000000000000000288889491657924371064116465863372802734375 kV		AMERICAN ELECTRIC POWER		AMERICAN ELECTRIC POWER	
Existing 0.000000000000000000000000000000000144444745828					

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5/5/2014 10:27:06 AM

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Case No(s). 14-0684-EL-BLN

Summary: Letter of Notification Sporn-Muskingum 345 kV Transmission Line Reconductor Project (Part 4 of 7) electronically filed by Mr. Yazen Alami on behalf of AEP Ohio Transmission Company