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May 7, 2019

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Re: Case No. 19-0972-EL-BTA
In the Matter of the Amendment Application of AEP Ohio
Transmission Company, Inc. for a Certificate of
Environmental Compatibility and Public Need for the
Lamping-Rouse 138 kV Transmission Line Project

Dear Chairman Randazzo,

Attached please find a copy of the Amendment Application of AEP Ohio Transmission Company, Inc. for a Certificate of Environmental Compatibility and Public Need (“Application”) for the above-referenced project. This filing is made pursuant to O.A.C. 4906-5-01, *et seq.* and 4906-2-01, *et seq.*

Filing of this Application is effected electronically pursuant to O.A.C. 4906-2-02(A) and (D). Five printed copies and ten additional electronic copies (CDs) of this filing will also be submitted to the Staff of the Ohio Power Siting Board for its use.

The following information is included pursuant to O.A.C. 4906-2-04(A)(3):

- (a) Applicant:
AEP Ohio Transmission Company, Inc.
c/o American Electric Power
Energy Transmission
700 Morrison Road
Gahanna, Ohio 43220

- (b) Facilities to be Certified:
Laming-Rouse 138 kV Transmission Line Project
- (c) Applicant's Authorized Representative with respect to this Application:
Matthew Siefker
Project Manager
700 Morrison Road
Gahanna, Ohio 43220

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

/s/ Christen M. Blend
Christen M. Blend (0086881), Counsel of Record
Hector Garcia (0084517)

Counsel for AEP Ohio Transmission Company, Inc.

cc: Executive Director and Counsel, c/o Jon Pawley, OPSB Staff

Application for Amendment

Lamping to Rouse 138 kV Transmission Line Project

OPSB Case No. 19-0972-EL-BTA

Prepared for



Submitted to
Ohio Power Siting Board

May 2019

BEFORE THE OHIO POWER SITING BOARD

Application for Amendment to the Lamping-Rouse 138 kV Transmission Line Project

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Acronyms and Abbreviations

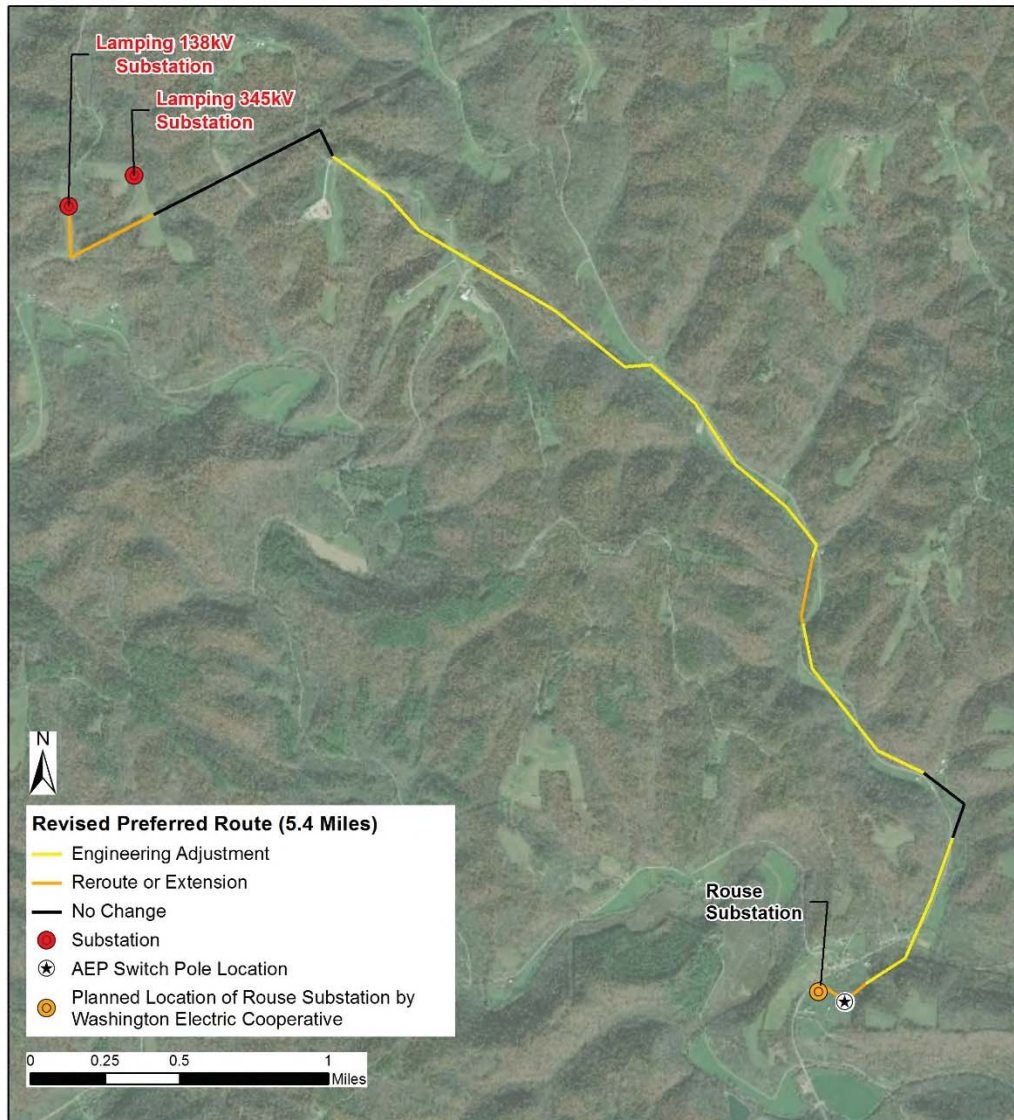
AEP	American Electric Power
AEP Ohio Transco	AEP Ohio Transmission Company, Inc.
BMP	best management practice
Buckeye	Buckeye Power, Inc.
cm	centimeter
Field Survey Area	150 feet on either side of the centerline for both the Preferred and Alternate Routes
GIS	geographic information system
HHEI	Headwater Habitat Evaluation Index
kV	kilovolt
NA	not applicable
NC	not crossed
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency
OHI	Ohio Historic Inventory
OPSB	Ohio Power Siting Board
ORAM	Ohio Rapid Assessment Method
PEM	palustrine emergent
PFO	palustrine forested
PHWH	Primary Headwater Habitat
Program	Southeast Ohio Area Improvements Program
Project	Lamping to Rouse 138 kV Transmission Line Project
PSS	palustrine scrub/shrub
QHEI	Qualitative Habitat Evaluation Index
ROW	right-of-way
SHPO	State Historic Preservation Office
SWPPP	stormwater pollution prevention plan
T&E	threatened and endangered
TNW	traditionally navigable waterway
UNT	unnamed tributary
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
WEC	Washington Electric Cooperative, Inc.

AMENDMENT CHANGE SUMMARY

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco) submitted a Certificate Application to the Ohio Power Siting Board (OPSB) on December 19, 2016 for the Lamping to Rouse 138 kV Transmission Line Project (Project). On August 17, 2017, the OPSB issued its Certificate of Environmental Compatibility and Public Need for the Preferred Route.

The purpose of this amendment is to document the changes to the Preferred Route alignment since the OPSB's approval of the Preferred Route, and to seek OPSB approval of the revised alignment. Construction of the Preferred Route started on January 22, 2018 and pole structures 1 through 29 have been installed to date (see revised Figure 8-2A to 8-2E). AEP Ohio Transco suspended Project construction activities on March 29, 2019 and will resume construction activities once this application amendment has been reviewed and approved by the OPSB.

As detailed engineering of the transmission line progressed after submittal of the certificate application in December 2017, four alignment changes were necessary for the Preferred Route. These changes are categorized as engineering adjustments [within the 100-foot right-of-way (ROW) of the OPSB-approved alignment] and alignment reroutes (deviations outside the 100-foot ROW of the OPSB-approved alignment).

Exhibit 1: Summary of the Alignment Changes to the Preferred Route**Engineering Adjustments**

One engineering adjustment was made along the majority of the OPSB-approved Preferred Route. During the detailed engineering design phase of the Project (following submittal of the certificate application), the design team determined that the Preferred Route alignment was too close to the parallel Washington Electric Cooperative (WEC) distribution line for operational purposes. Therefore, the alignment was shifted in the range of 5-10 feet to the west or east to provide 25 feet of clearance to the existing distribution line. This engineering adjustment along the Preferred Route is shown below in the series of Exhibits 1 through 7.

Exhibit 1. Map Illustration of Engineering Adjustment (Structures 6 through 14)



Exhibit 2. Map Illustration of Engineering Adjustment (Structures 14 through 23)



Exhibit 3. Map Illustration of Engineering Adjustment (Structures 21 through 32)



Exhibit 4. Map Illustration of Engineering Adjustment (Structures 31 through 36)



Exhibit 5. Map Illustration of Engineering Adjustment (Structures 41 through 47)

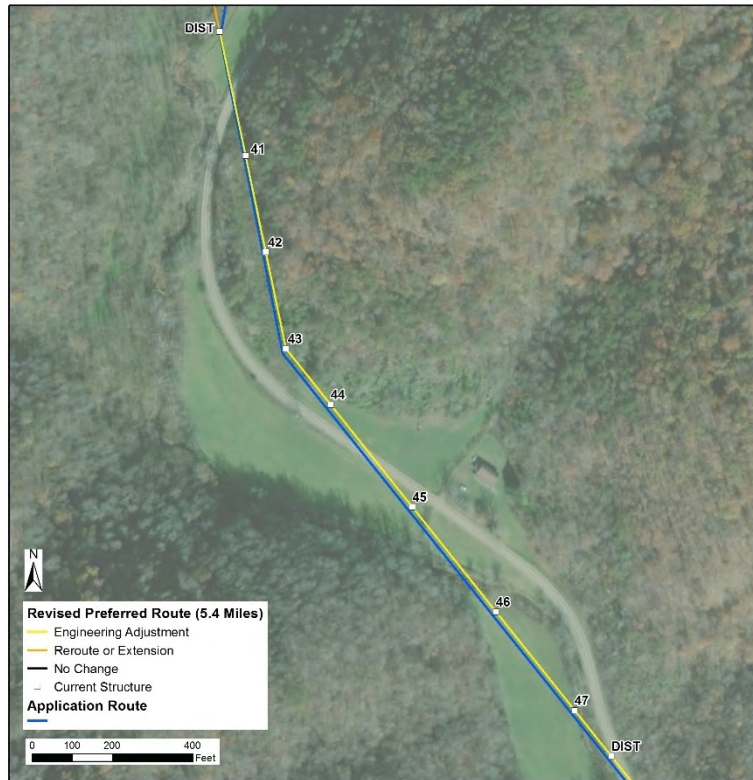


Exhibit 6. Map Illustration of Engineering Adjustment (Structures 48 through 52)



Exhibit 7. Map Illustration of Engineering Adjustment (Structures 54 through 60)



Alignment Reroutes

Three alignment reroutes totaling 1.0 mile were made along the OPSB-approved Preferred Route. These reroutes were initiated because of 1) the addition of approximately 0.5 mile beyond the northern endpoint of the Preferred Route to address the revised location of the 138 kV station pad at the proposed Lamping Substation; 2) request from the OPSB to shift the Preferred Route to the west to avoid cutting riparian trees; and 3) the addition of approximately 0.2 mile at the southern endpoint of the Preferred Route to address the revised location of the proposed Rouse Substation. These reroutes are described in greater detail below.

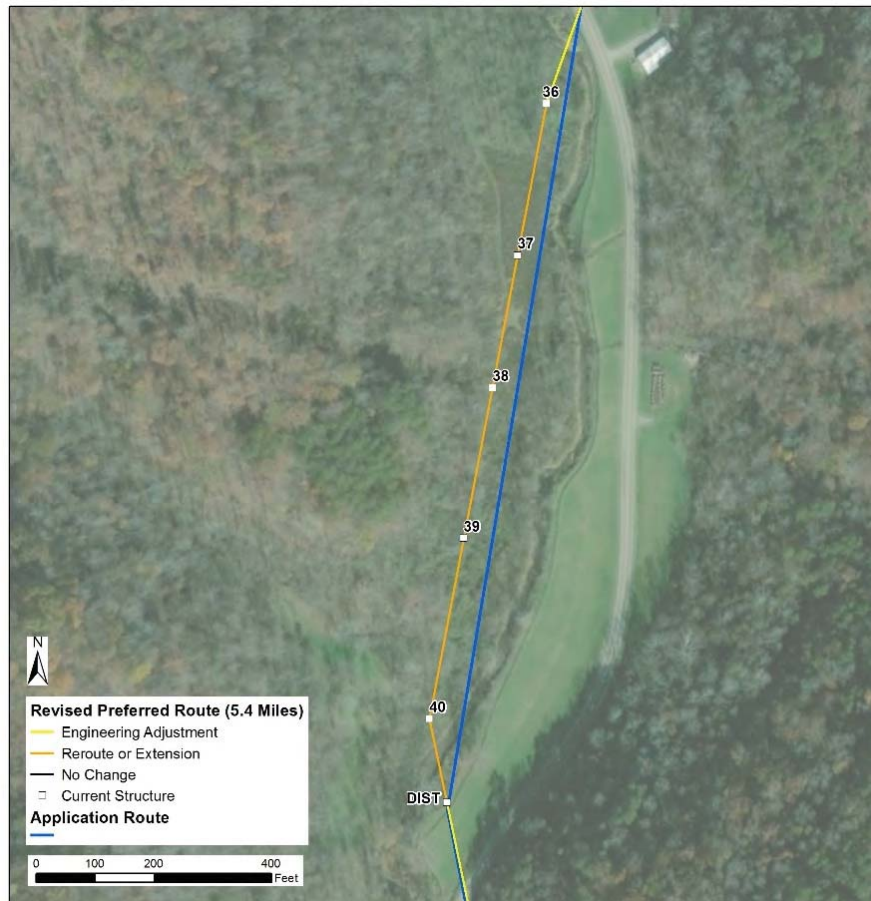
Reroute 1 is located at the northern endpoint of the Preferred Route. This reroute, as shown in Exhibit 8 below, extends the proposed route to the west for approximately 0.3 mile then to the north for approximately 0.2 mile. This reroute is needed because AEP Ohio Transco revised the 138 kV substation pad. Initially, the 138 kV and 345 kV substations were going to be incorporated into one large substation yard. However, due to the terrain in the Project area, the 138 kV and 345 kV substations required separate station pad sites, therefore the transmission line entrance into the 138 kV substation site required an adjustment. The 0.5 mile addition will continue to parallel the existing 345 kV line and then cross over to connect to the 138 kV substation pad.

Exhibit 8. Map Illustration of Reroute 1 (Structures 1 through 3)



Reroute 2 is located near the midpoint of the Project between structures 35 through 40. This reroute, as shown in Exhibit 9 below, deviates to the west from the proposed route by a maximum of approximately 56 feet for approximately 0.3 mile. This reroute resulted from the OPSB Staff's concern about the number of riparian trees that would need to be cleared in the area. This reroute mitigates the impact by reducing the amount of riparian tree clearing.

Exhibit 9: Map Illustration of Reroute 2 (Structures 36 through 40)



Reroute 3 is located near the southern end of the Preferred Route near the entrance to the proposed Rouse Substation. This reroute, as shown in Exhibit 10 below, extends the proposed route to the southwest for approximately 0.1 mile then to the northwest for approximately 0.1 mile. This reroute was necessitated by WEC's relocation of the proposed Rouse Substation to the adjacent parcel. The 0.2 mile addition will connect the Preferred Route to the proposed Rouse Substation.

Exhibit 10: Map Illustration of Reroute 3 (Structures 62 through Rouse Substation)



The potential impacts resulting from all aforementioned engineering adjustments and reroutes to the transmission line alignment were evaluated using desktop resources (i.e., Geographic Information Systems, previously collected field data). The revised Application text in this amendment is formatted to identify specific text additions as underlined text and deleted text as strike-through text where updates were necessary for changed conditions or impacts that arose from the adjustments and reroutes on the Preferred Route. Although sections of the Preferred Route are shared with the Alternate Route, only the text relevant to the Preferred Route was updated. Subsections not affected by the proposed adjustments were omitted from this filing yet are still applicable based upon the application filed on December 19, 2016.

4906-5-02 PROJECT SUMMARY AND APPLICANT INFORMATION**(A) PROJECT SUMMARY**

Text provided in the December 19, 2016 Application filing remains unchanged.

(1) General Purpose of the Facility

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) General Location, Size, and Operating Characteristics

The proposed Project is located in southwestern Monroe County, approximately 33 miles north of Marietta, Ohio.

The proposed Project begins approximately ~~2.10~~ 2.3 miles southwest of Graysville, Ohio at the ~~proposed~~ site of the Lamping Substation, located about ~~1,200 feet~~ 0.3 miles south southwest of the intersection of County Roads 13 and 826 and extends generally southeast. The proposed Project terminates approximately 1.5 miles northwest of Rinard Mills, Ohio at the proposed site of the Rouse Substation, located ~~immediately south~~ west of the intersection of State Route 26 and Pleasant Ridge Road. The proposed Project will be approximately 4.7 to ~~4.8~~ 5.4 miles long, depending on the route selected, will be constructed using primarily steel monopoles, and will require a new 100-foot-wide permanent right-of-way (ROW). Revised Figure 2-1 shows the Project vicinity, substation interconnecting points, and the Preferred and Alternate Routes identified by AEP Ohio Transco.

(3) Suitability of Preferred and Alternate Routes

Text provided in the December 19, 2016 Application filing remains unchanged.

(i) Preferred Route

The entirety of the Preferred Route from the proposed Lamping Substation to the proposed Rouse Substation is approximately ~~4.8~~ 5.4 miles long ~~and is described in the RSS report as Route 21.~~

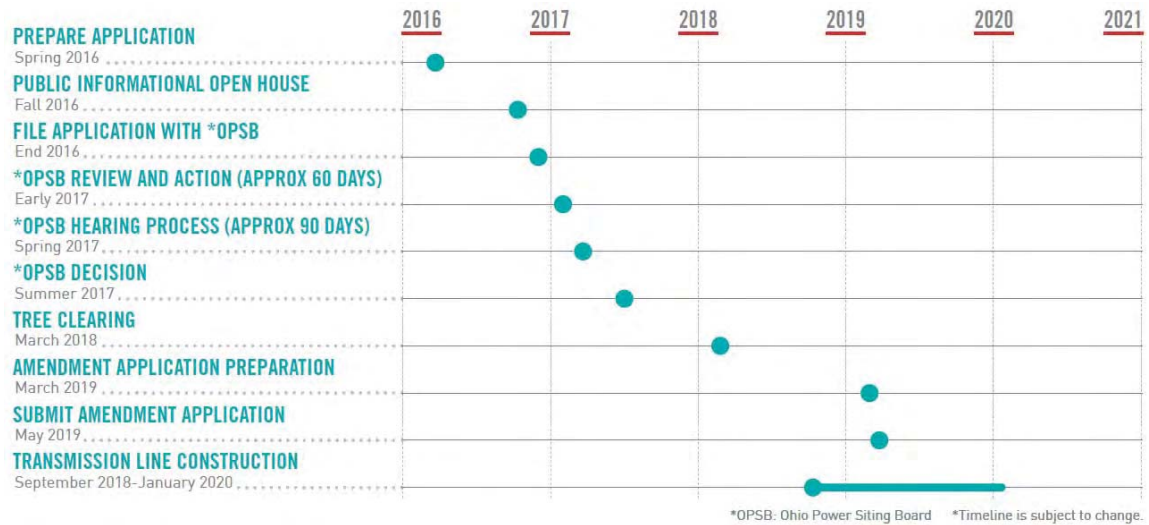
The ~~4.8~~ 5.4-mile route is aligned adjacent to ~~uses~~ existing utility lines for approximately 70 percent of its length. (Note: The following text refers to the results of the route selection study at the time of the December 2017 application filing.) This route has the second most favorable ecological score with the least amount of proposed woodlot clearing and no threatened and endangered (T&E) species records near the alignment. It has the third most favorable land use score with no residences within 100 feet, no Ohio Historical Inventory (OHI) structures within 1,000 feet and does not cross Wayne National Forest land. Finally, Route 21 has the most favorable technical score with the most overbuilding of existing electric distribution lines and the least number of proposed pole locations with challenging access.

(ii) Alternate Route

Text provided in the December 19, 2016 Application filing remains unchanged.

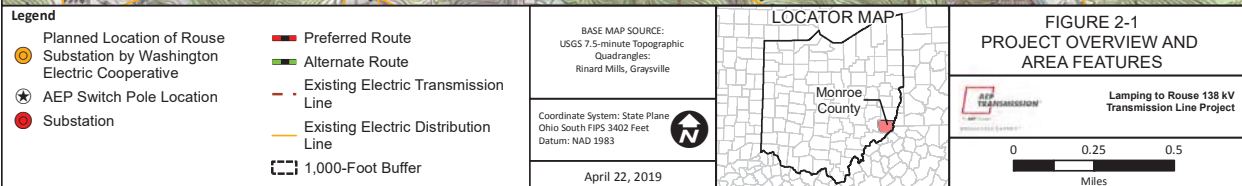
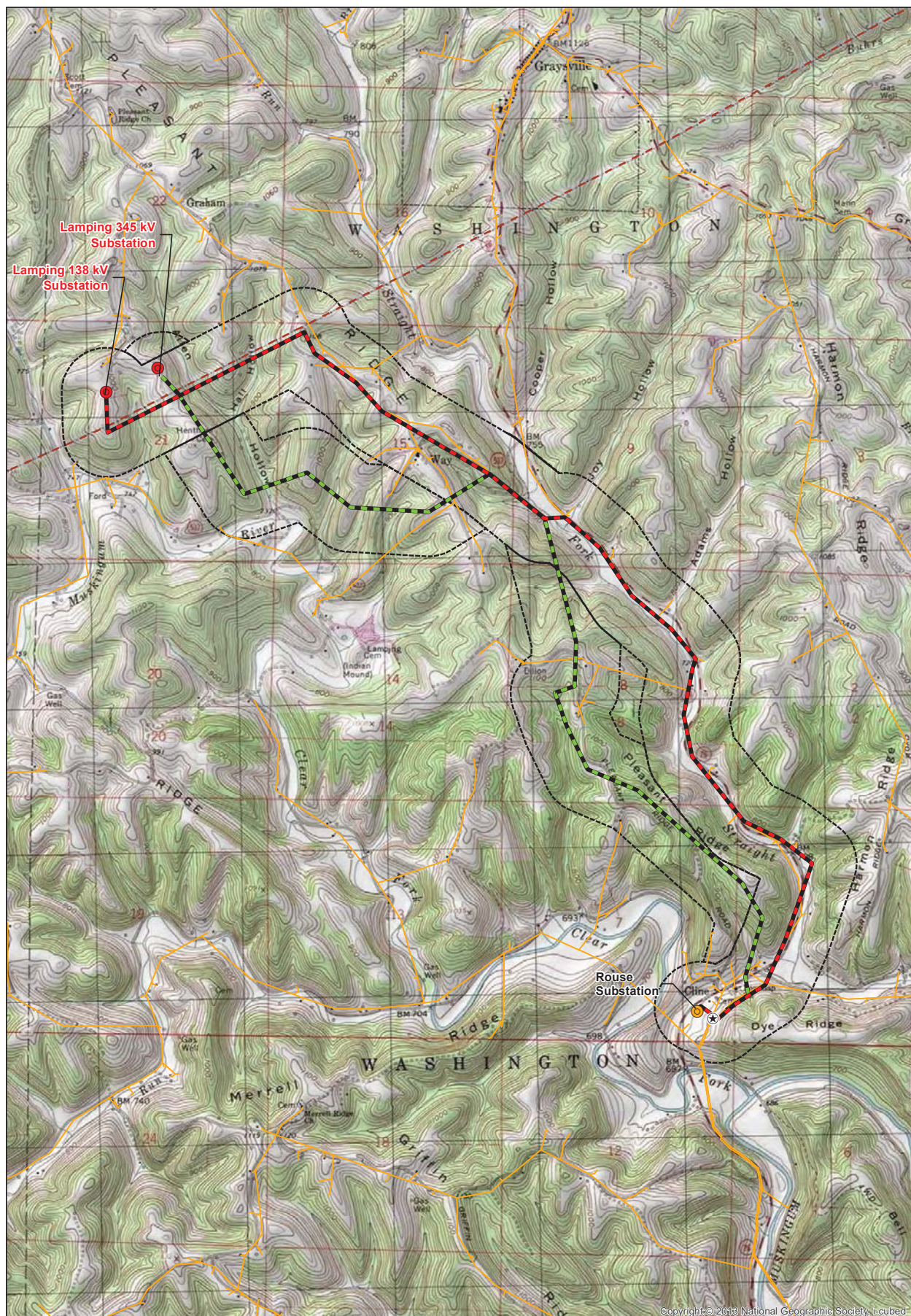
(4) Schedule

The current Project schedule is illustrated in the diagram below.



(B) APPLICANT DESCRIPTION

Text provided in the December 19, 2016 Application filing remains unchanged.



4906-5-03 REVIEW OF NEED AND SCHEDULE**(A) NEED FOR PROPOSED FACILITY**

Text provided in the December 19, 2016 Application filing remains unchanged.

(1) Purpose of the Proposed Facility

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) System Conditions, Local Requirements, and Other Pertinent Factors

Text provided in the December 19, 2016 Application filing remains unchanged.

(3) Load Flow Studies and Contingency Analyses

Text provided in the December 19, 2016 Application filing remains unchanged.

(4) System Performance Transcription Diagrams

Text provided in the December 19, 2016 Application filing remains unchanged.

(B) REGIONAL EXPANSION PLANS

Text provided in the December 19, 2016 Application filing remains unchanged.

(1) Proposed Facility in Long-Term Forecast**(a) Reference in Recent Long-Term Forecast**

Text provided in the December 19, 2016 Application filing remains unchanged.

(b) Explanation if Not Referenced

Text provided in the December 19, 2016 Application filing remains unchanged.

(c) Reference in Regional Expansion Plans

Text provided in the December 19, 2016 Application filing remains unchanged.

(A) SYSTEM ECONOMY AND RELIABILITY

Text provided in the December 19, 2016 Application filing remains unchanged.

(B) OPTIONS TO ELIMINATE THE NEED FOR THE PROPOSED PROJECT

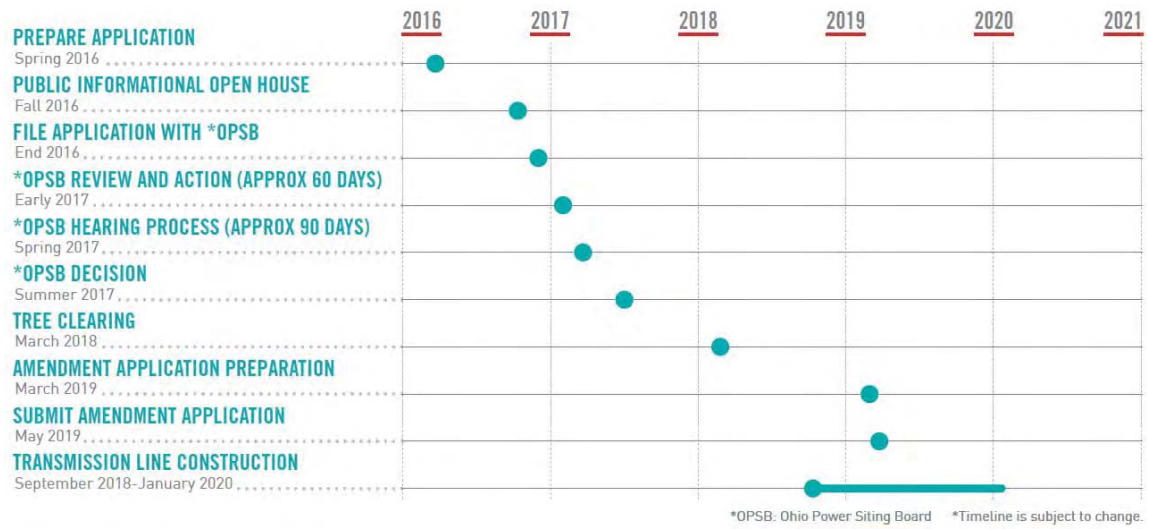
Text provided in the December 19, 2016 Application filing remains unchanged.

(C) FACILITY SELECTION RATIONALE

Text provided in the December 19, 2016 Application filing remains unchanged.

(D) PROJECT SCHEDULE**(1) Schedule Gantt Chart**

A schedule of the proposed Project is presented below.



4906-5-04 ROUTE ALTERNATIVES ANALYSES

Text provided in the December 19, 2016 Application filing remains unchanged.

4906-5-05 PROJECT DESCRIPTION**(A) PROJECT AREA DESCRIPTION**

Text provided in the December 19, 2016 Application filing remains unchanged.

(1) Project Area Map

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) Proposed Right-of-Way, Transmission Length, and Properties Crossed

The proposed ROW width is 100 feet. Table 5-1 provides information about the Preferred and Alternate Route ROW acreage, length, and properties crossed based on the proposed centerline.

TABLE 5-1

Right-of-way Area, Length, and Number of Properties Crossed for the Preferred and Alternate Routes

	Route Alternatives	
	Preferred	Alternate
Proposed ROW area (in acres)	58.5 <u>65.2</u>	57.2
Length (in miles)	4.8 <u>5.4</u>	4.7
Number of properties crossed (by ROW)	35 <u>33</u>	33

(B) ROUTE OR SITE ALTERNATIVE FACILITY LAYOUT AND INSTALLATION**(1) Site Clearing, Construction, and Reclamation**

Text provided in the December 19, 2016 Application filing remains unchanged.

(a) Surveying and Soil Testing

Text provided in the December 19, 2016 Application filing remains unchanged.

(b) Grading and Excavation

Text provided in the December 19, 2016 Application filing remains unchanged.

(c) Construction of Temporary and Permanent Access Roads and Trenches

Access road easements with landowners have been obtained and access roads have been constructed. The as-built locations are illustrated in revised Figure 8-2A through 8-2E. The access road locations and design specifications were also included in the Storm Water Pollution Prevention Plan that was filed with the OPSB prior to the start of construction.

~~Construction access will be required for installation of the pole structures and stringing of the conductor cable or wire. Access roads will require the landowner's input and approval. Preliminary access roads for the Preferred Route are presented on Figures 8-2A through 8-2E.~~

~~Note these access roads cannot be fully planned and identified until after a final route is approved followed by AEP Ohio Transco's contact with affected landowners for transmission line easements. Where access across wetlands or streams is necessary, timber mats or equivalent will be used to minimize the environmental impacts. If field conditions necessitate the modification of the finalized access road locations during construction, the concurrence of the property owner will be obtained, necessary environmental field studies will be performed, and necessary permits will be updated.~~

(d) Stringing of Cable

Text provided in the December 19, 2016 Application filing remains unchanged.

(e) Installation of Electric Transmission Line Poles and Structures, Including Foundations

Text provided in the December 19, 2016 Application filing remains unchanged.

(f) Post-Construction Reclamation

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) Facility Layout

Text provided in the December 19, 2016 Application filing remains unchanged.

(a) Transmission Line Route Map

Revised Figure 8-2A through 8-2E and Figure 8-3A through 8-3E show maps at 1:6,000-scale of the Preferred and Alternate Routes, respectively. These maps illustrate the data required by OAC 4906-5-05(A)(1). Although the additional information required by OAC 4906-5-05 (B)(2)(a) (e.g., pole structure locations) will not be finalized until a final route is approved by the OPSB and the final engineering design is complete, preliminary locations are provided for the Preferred and Alternate Route as illustrated in Figures 8-2A through 8-2E and 8-3A through 8-3E. The data and information defined in OAC 4906-5-05 (B)(2)(a) includes temporary access roads and proposed locations of transmission line poles and buildings. Revised Figure 8-2A through 8-2E has been updated to include the location of structures already installed as well as proposed locations for the remaining structures. As-built temporary access roads have also been included. No fenced-in or secured areas are planned for the transmission line Project.

AEP Ohio Transco is currently using a laydown yard in Marietta, located at 2633 Waterford Road, Marietta, OH 45750. An additional staging area/laydown area is located on private property, as agreed to by the landowner, at 37045 Hilight (State Route 26), Graysville, OH 45734. identifying staging areas and laydown areas for the Project. To date, none have been identified within the Project area. After sites are identified, AEP Ohio Transco will provide final locations that support this Project.

(b) Proposed Layout Rationale

Text provided in the December 19, 2016 Application filing remains unchanged.

(c) Plans for Future Modifications

Text provided in the December 19, 2016 Application filing remains unchanged.

(C) DESCRIPTION OF PROPOSED TRANSMISSION LINES OR PIPELINES

Text provided in the December 19, 2016 Application filing remains unchanged.

4906-5-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

Text provided in the December 19, 2016 Application filing remains unchanged.

4906-5-07 HEALTH AND SAFETY, LAND USE, AND REGIONAL DEVELOPMENT**(A) HEALTH AND SAFETY**

Text provided in the December 19, 2016 Application filing remains unchanged.

(B) LAND USE**(1) Map of the Site and Route Alternatives**

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) Impact on Identified Land Uses

Land use in the project area is primarily influenced by topography. The project area is steeply sloped and primarily forested with scattered residential lots. Residential structures and a few light commercial properties are mainly confined to the river valleys of the study area, where Straight Fork and Clear Fork, the associated floodplains, and Covered Bridge Scenic Highway (Highway 26) and State Route 537 are located.

Comparisons of the various land use types and land use features for both routes are included in Tables 7-3 through 7-5 for the Preferred and Alternate Routes. The estimates of each land use type being crossed by the transmission line, land use within the 100-foot wide construction ROW, and the permanent ROW (linear feet, acreage, and percentages) were determined using GIS software calculations. The potential disturbance area during construction activities (vegetation clearing, pole installations, etc.) consists of the 100-foot wide construction ROW. The 100-foot wide permanent ROW will be restored through soil grading, seeding, and mulching, thus the permanent impact to the ROW is primarily limited to the removal of existing trees and other vegetation. Property owners may continue to utilize most of the ROW area for general uses that will not affect the safe and reliable operation of the transmission line such as lawn maintenance.

TABLE 7-3
Length and Percent of Land Uses Crossed by Route Alternatives

Land Use	Preferred Route*		Alternate Route*	
	Linear Feet	Percent	Linear Feet	Percent
Agriculture/Agricultural District Land	2,189 <u>4,920</u>	9 <u>17</u>	164	1
Industrial/Commercial	166 <u>172</u>	1	-	-
Open Land/Pasture	730 <u>2,565</u>	3 <u>9</u>	4,069	16
Residential	-	-	-	-
Institutional	-	-	-	-
Recreational ¹	- <u>20</u>	- <u><1</u>	-	-
Road Right-of-Way	1,766 <u>1,682</u>	7 <u>6</u>	721	3
Utility Right-of-Way ²	11,715 <u>3,458</u>	46 <u>12</u>	1,886	8
Woodlot	8,836 <u>13,890</u>	35 <u>49</u>	18,008	72
Water ³	32 <u>39</u>	0 <u><1</u>	-	-
Delineated Wetlands ³	<u>1,126</u>	<u>4</u>	NA	NA
Delineated Streams ³	<u>502</u>	<u>2</u>	NA	NA
Total	25,434 <u>28,375</u>	100	24,848	100

*Numbers in the table are for the planned potential disturbance area which is a nominal 100-foot wide corridor centered on the route.

¹ The Ohio Buckeye Trail was not included in the original OPSB application submitted December 19, 2016. The Buckeye Trail crosses both the Preferred and Alternate routes at the southern end of the Project. The Buckeye Trail is made up of a network of roads and wood trails that loop around the state of Ohio. Within the Project area, this specific section of the Buckeye Trail consists of Jericho Low Gap Road, State Route 26 and Highway 15 roadway. Existing distribution lines already cross and parallel the Buckeye Trail in this location. Recreational land has been updated to include this trail for the Preferred Route. This information is not included in the table for the Alternate Route because the purpose of this amendment is to document the changes to the Preferred Route alignment since the OPSB's approval of the Preferred Route.

² The original OPSB Preferred Route alignment was on the edge of the WEC distribution line ROW (i.e., the "utility right-of-way"). The length within utility ROW decreased as a result of shifting the line away from the existing WEC distribution line, and thus other land use categories such as open land and woodlots increased.

³ The methods used to quantify water features have changed since the original filed certificate application. The current method utilizes field-delineated streams and wetlands (and more accurate geo-referenced boundaries). The former Water category is based on a previous method using National Hydrography Data and aerial imagery.

NA – Not Applicable. Delineated wetlands, streams, and ponds are present on the Alternate Route (see Tables 8-2 and 8-3). This information was not included in the table because the purpose of this amendment is to document the changes to the Preferred Route alignment, as the OPSB has approved the Preferred Route.

TABLE 7-4

Acreage and Percent of Land Uses Crossed by Route Alternatives

Land Use	Preferred Route*		Alternate Route*	
	Acreage	Percent	Acreage	Percent
Agriculture/Agricultural District Land	8.1 7.9	14 12	0.6	1
Industrial/Commercial	0.5 0.5	1	-	-
Open Land/Pasture	2.7 6.3	5 10	9.2	16
Residential	- 0.1	- <1	-	-
Institutional	-	-	-	-
Recreational ¹	- 0.1	- <1	-	-
Road Right-of-Way	6.0 5.2	10 8	1.3	2
Utility Right-of-Way ²	17.8 12.9	30 20	2.9	5
Woodlot	22.6 28.1	39 43	43.2	76
Water ³	0.8 0.1	1 <1	-	-
Delineated Wetlands ³	2.8	4	NA	NA
Delineated Streams ³	1.2	2	NA	NA
Total	59.5 65.2	100	57.2	100

*Numbers in the table are for the planned potential disturbance area which is a nominal 100-foot wide corridor centered on the route.

¹ The Ohio Buckeye Trail was not included in the original OPSB application submitted December 19, 2016. The Buckeye Trail crosses both the Preferred and Alternate routes at the southern end of the Project. The Buckeye Trail is made up of a network of roads and wood trails that loop around the state of Ohio. Within the Project area, this specific section of the Buckeye Trail consists of Jericho Low Gap Road, State Route 26 and Highway 15 roadway. Existing distribution lines already cross and parallel the Buckeye Trail in this location. Recreational land has been updated to include this trail for the Preferred Route. This information is not included in the table for the Alternate Route because the purpose of this amendment is to document the changes to the Preferred Route alignment since the OPSB's approval of the Preferred Route.

² The original OPSB Preferred Route ROW overlapped the WEC distribution line ROW. Acreage within utility ROW decreased as a result of shifting the ROW off of the existing WEC distribution line ROW.

³ The methods used to quantify water features have changed since the original filed certificate application. The current method utilizes field-delineated streams and wetlands (and more accurate geo-referenced boundaries). The former Water category is based on a previous method using National Hydrography Data and aerial imagery.

NA – Not Applicable. Delineated wetlands, streams, and ponds are present on the Alternate Route (see Tables 8-2 and 8-3). This information was not included in the table because the purpose of this amendment is to document the changes to the Preferred Route alignment, as the OPSB has approved the Preferred Route.

TABLE 7-5

Number of Sensitive Features Within or Near the Potential Disturbance Area for the Route Alternatives

	Route Alternatives	
	Preferred	Alternate
Length (in miles)	4.8 <u>5.4</u>	4.7
Features within the Potential Disturbance Area of Route Alternatives*		
Historic Structures (OHI)	0	0
National Register of Historic Places	0	0
Previously Identified Archaeological Sites ¹	0 <u>2</u>	0
Residences	0	0
Commercial Buildings	0	0
Industrial Buildings	0	0
Schools and Hospitals	0	0
Churches and Civic Buildings	0	0
State/Federal Forests and Recreational Lands ²	0 <u>1</u>	0
Airports	0	0
Features within 1,000 feet of Route Alternatives (centerline)		
Historic Structures (OHI)	0	0
National Register of Historic Places	0	0
Previously Identified Archaeological Sites ¹	1 <u>6</u>	1
Residences	18 <u>19</u>	18
Commercial Buildings	4	1
Industrial Buildings	1	0
Schools and Hospitals	0	0
Churches and Civic Buildings	1	1
State/Federal Forests and Recreational Land ²	1 <u>2</u>	1
Airports	0	0

* The planned potential disturbance area is a nominal 100-foot wide corridor centered on the route.

¹ A Phase I Cultural Resources survey was completed for the Preferred Route and associated access roads in summer 2017. Three cultural resource sites were identified during the survey, two of which are located within the potential disturbance area of the Preferred Route. For this amendment, updated data files (accessed March 29, 2019) from the State Historic Preservation Office (SHPO) were used to identify cultural resources within 1,000 feet of the Preferred Route centerline which include the results of the Phase I Cultural Resources survey. Cultural

resources within 1,000 feet of the Alternate Route were not updated because the purpose of this amendment is to document the changes to the Preferred Route alignment, as the OPSB has approved the Preferred Route.

¹ The Ohio Buckeye Trail was not included in the original OPSB application submitted December 19, 2016. The Buckeye Trail crosses both the Preferred and Alternate routes at the southern end of the Project. The Buckeye Trail is made up of a network of roads and wood trails that loop around the state of Ohio. Within the Project area, this specific section of the Buckeye Trail consists of Jericho Low Gap Road, State Route 26 and Highway 15 roadway. Existing distribution lines already cross and parallel the Buckeye Trail in this location. Recreational land has been updated to include this trail for the Preferred Route. This information is not included in the table for the Alternate Route because the purpose of this amendment is to document the changes to the Preferred Route alignment, as the OPSB has approved the Preferred Route.

(a) Residential

Preferred Route: The Preferred Route is located within 1,000 feet of ~~18~~ 19 residences, none of which are within the planned potential disturbance area. As shown in Table 7-4, residential areas make up ~~0~~ less than 1 percent of the Preferred Route ROW (100 feet width).

Alternate Route: The Alternate Route is located within 1,000 feet of 18 residences, none of which are within the planned potential disturbance area. As shown in Table 7-4, residential areas make up 0 percent of the Alternate Route ROW (100 feet width).

(b) Commercial

Text provided in the December 19, 2016 Application filing remains unchanged.

(c) Industrial

Text provided in the December 19, 2016 Application filing remains unchanged.

(d) School and Hospitals

Text provided in the December 19, 2016 Application filing remains unchanged.

(e) Churches and Civic Buildings

Text provided in the December 19, 2016 Application filing remains unchanged.

(f) Recreational

Both the Preferred Route and Alternate Route are located within 1,000 feet of Wayne National Forest land. No state or federal forest ~~or recreational lands~~ are located within the planned potential disturbance area of the Preferred and Alternate Routes. The Buckeye Trail crosses both the Preferred and Alternate routes at the southern end of the Project. The Buckeye Trail is made up of a network of roads and wood trails that loop around the state of Ohio. Within the Project area, this specific section of the Buckeye Trail consists of Jericho Low Gap Road, State Route 26 and Highway 15 roadway. Existing distribution lines already cross and parallel the Buckeye Trail in this location. As shown in Table 7-4, recreational land makes up ~~0~~ less than 1 percent of the

Preferred Route ROW (100 feet width) and Alternate Route ROW (100 feet width). This information is not included in the Table 7-4 for the Alternate Route because the purpose of this amendment is to document the changes to the Preferred Route alignment since the OPSB's approval of the Preferred Route.

(g) Agricultural

As shown in Table 7-3, approximately ~~9~~ 17 percent (~~2,189~~ 4,920 feet) of the Preferred Route and 1 percent (164 feet) of the Alternate Route cross agricultural fields. A discussion of agricultural land and Agricultural District Land is provided in section (C) below.

(3) Impact on Identified Nearby Structures

(a) Structures within 200 Feet of Proposed Right-of-Way

There are seven residences within 200 feet of the Preferred Route ROW; these residences range from ~~59~~ 52 to ~~188~~ 179 feet from the ROW. There are three residences within 200 feet of the Alternate Route ROW; these residences range from 92 to 167 feet from the ROW. There are ~~20~~ 22 and ~~7~~ other structures (i.e., garage, barn, camper etc.) within 200 feet of the Preferred Route and 7 other structures within 200 feet of the Alternate Route ROW, respectively. There are no commercial, industrial, institutional, or recreational structures within 200 feet of the proposed ROW for either route.

(b) Destroyed, Acquired, or Removed Buildings

Text provided in the December 19, 2016 Application filing remains unchanged.

(c) Mitigation Procedures

Text provided in the December 19, 2016 Application filing remains unchanged.

(C) AGRICULTURAL LAND IMPACTS

The potential impacts of the Project on agricultural land use include potential damage to crops that may be present, disturbance of underground field drainage systems, compaction of soils and potential for temporary reduction of crop productivity. Agricultural land used for crop cultivation (hay) within the Preferred and Alternate Route ROWs is estimated at ~~8.1~~ 7.9 acres and 0.6 acre, respectively. Other agricultural pastureland or other open land comprises ~~2.7~~ 6.3 acres of the Preferred Route and 9.2 acres of the Alternate Route.

Soil compaction resulting from construction activities is typically a temporary issue and is resolved within a few seasons of plowing and tilling the land. AEP Ohio Transco will also work with the agricultural landowners to resolve conflicts with drainage tiles and irrigation systems that are affected by the Project, where necessary.

(1) Agricultural Land Map

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) Impacts to Agricultural Lands and Agricultural Districts

The Monroe County Auditor was contacted to obtain information on current Agricultural District lands records. The centerlines of the Preferred Route and Alternate Routes cross one Agricultural District parcel. This parcel is located at the south end of the Project. No additional Agricultural District parcels are located within 1,000 feet of the Preferred and Alternate Routes. The data was received from the Monroe County Auditor on ~~November 2, 2016~~ April 4, 2019. The provided data fulfills the requirement of OAC 4906-5-07 (C)(1)(b), which states this data must be collected not more than 60 days prior to submittal.

(a) Acreage Impacted

Text provided in the December 19, 2016 Application filing remains unchanged.

(b) Evaluation of Construction, Operation, and Maintenance Impacts

Text provided in the December 19, 2016 Application filing remains unchanged.

(c) Mitigation Procedures

Text provided in the December 19, 2016 Application filing remains unchanged.

(D) LAND USE PLANS AND REGIONAL DEVELOPMENT

Text provided in the December 19, 2016 Application filing remains unchanged.

(1) Impacts to Regional Development

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) Compatibility of Proposed Facility with Current Regional Land Use Plans

Text provided in the December 19, 2016 Application filing remains unchanged.

(E) CULTURAL AND ARCHAEOLOGICAL RESOURCES

A Phase I Cultural Resources survey was completed for the Preferred Route and associated access roads in summer 2017 and a Phase I Cultural Resources Investigation Report, along with correspondence with the Ohio Historical Preservation Office (OHPO), was provided to the OPSB after the original certificate application filing. A Phase I Cultural Resources survey was not completed for the Alternate Route.

Three cultural resource sites were identified within 1,000 feet of the Preferred Route, two of which are located within the Preferred Route ROW and the other within an access road. None of these resources are considered significant in terms of contributing further information regarding Ohio history, as summarized in the Phase I Cultural Resources Investigation Report filed with the OPSB, and as determined by the OHPO.

For this amendment, updated data files (accessed March 29, 2019) from the State Historic Preservation Office (SHPO) were used to identify cultural resources within 1,000 feet of the Preferred Route centerline, which include the findings from the Phase I Cultural Resources survey

completed for the Preferred Route and associated access roads as well as other recent cultural surveys in the area. Cultural resources within 1,000 feet of the Alternate Route were not updated because the purpose of this amendment is to document the changes to the Preferred Route alignment since the OPSB's approval of the Preferred Route.

~~Cultural resource studies of the Project area were conducted on behalf of AEP Ohio Transco. To date, these studies have been limited to include a background records check and literature review using data files from the State Historic Preservation Office (SHPO) for both the Preferred and Alternate Routes. A summary of this effort for the Preferred Route is complete and will be filed as a confidential filing with the Board due to the sensitive nature of the location information for archaeological sites.~~

(1) Cultural Resources Map

Based on the cultural resources desktop study, there are no scenic rivers or scenic routes/byways (as defined by the Ohio Department of Natural Resources [ODNR] and/or the Ohio Department of Transportation [ODOT]) or registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance within 1,000 feet of the proposed routes.

Two cemeteries are located within 1,000 feet of the proposed routes. Low Gap Church cemetery is located approximately 115 feet north of the Preferred and Alternate Route. Henthorne cemetery is located approximately 175 feet east of the Alternate Route. Six archaeological sites are located within 1,000 feet of the Preferred Route, three of which were discovered during the Phase I Cultural Resources survey for the Project. ~~One Ohio Archaeological Inventory site is located 773 feet east of the Preferred Route.~~ Wayne National Forest is located within 1,000 feet of both the Preferred and Alternate Routes.

Cultural resource sites, based on records from OHPO information in the public domain are identified on revised Figure 7-1.

(2) Cultural Resources in Study Corridor

Cultural resources studies to date have involved background research utilizing data files from the OHPO online mapping system for both the Preferred and Alternate Routes.

For the background research, a 1-mile buffer was used around both the Preferred and Alternate Routes to identify these previously known cultural resources and to provide information on the probability of identifying cultural resources within the Project footprint. The OHPO online mapping database included a review of the Ohio Archaeological Inventory, the OHI, Determination of Eligibility files, the National Register of Historic Places, historic cemeteries, historic bridges, national historic landmarks, and previous cultural resources surveys.

Two cultural resource sites were identified within the Project footprint of the Preferred Route. No known cultural resources were identified within the Project footprint of ~~either the Preferred or the Alternate Route. from the desktop review.~~ A field investigation of the proposed disturbance

~~area will be performed if directed by the OHPO as a result of the consultation request letter submitted to the OHPO.~~

(3) Construction, Operation, and Maintenance Impacts on Cultural Resources

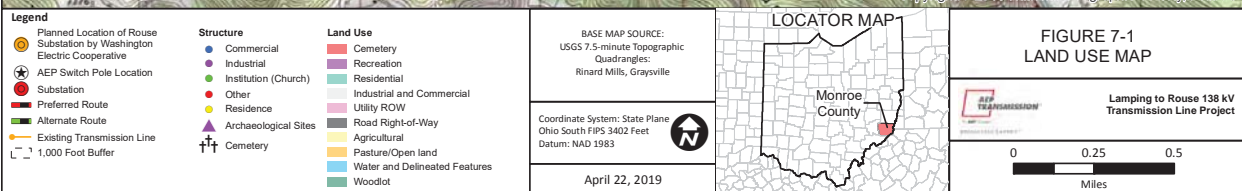
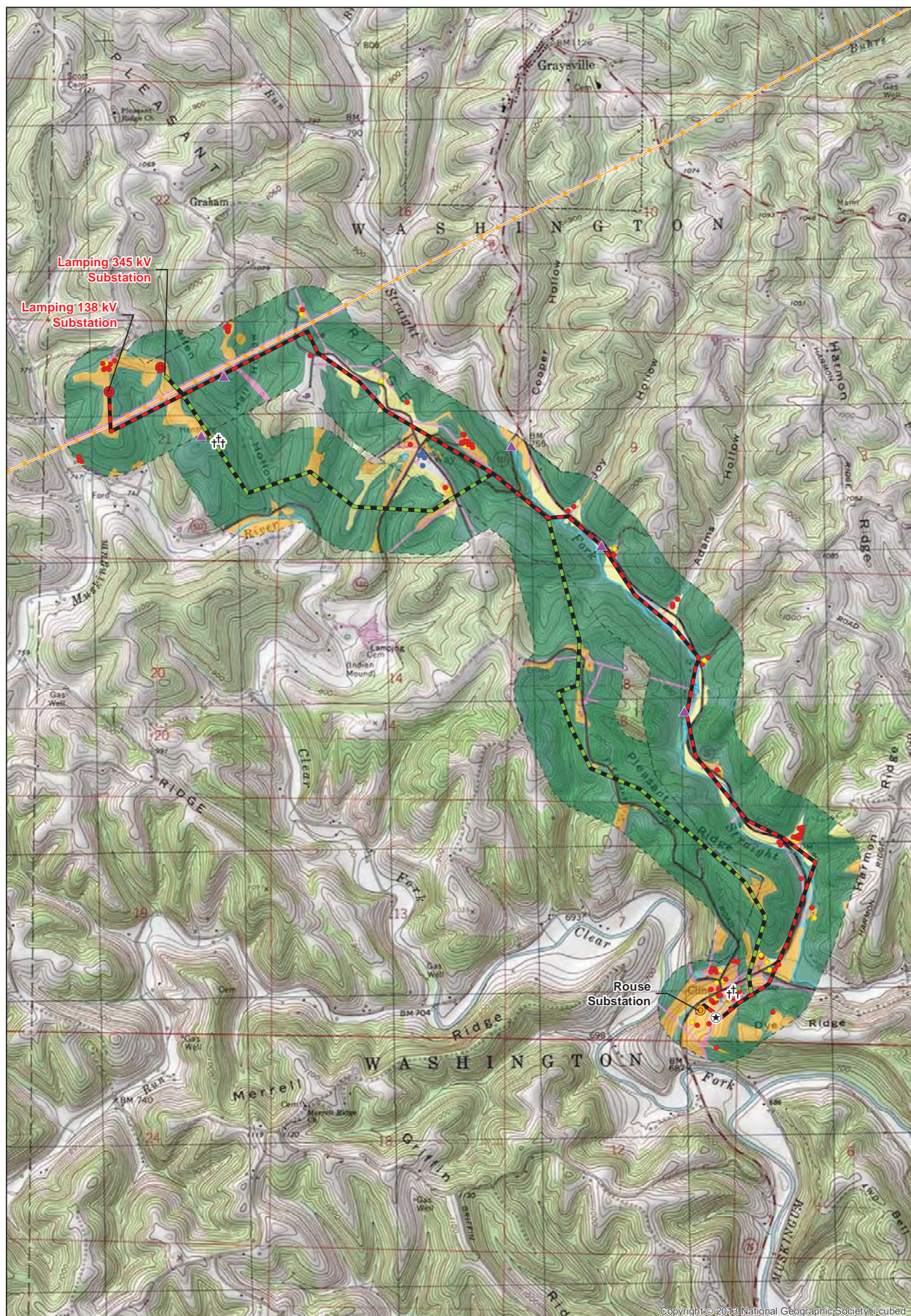
Text provided in the December 19, 2016 Application filing remains unchanged. As noted above, two cultural resource sites were identified during the Phase 1 Cultural Resources survey, however the OHPO concurred that the sites were not significant and preservation of the sites was not required.

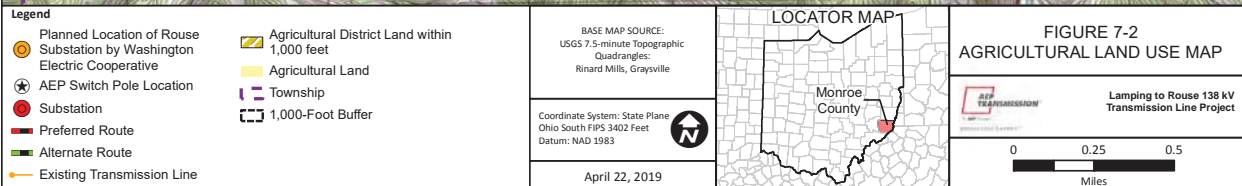
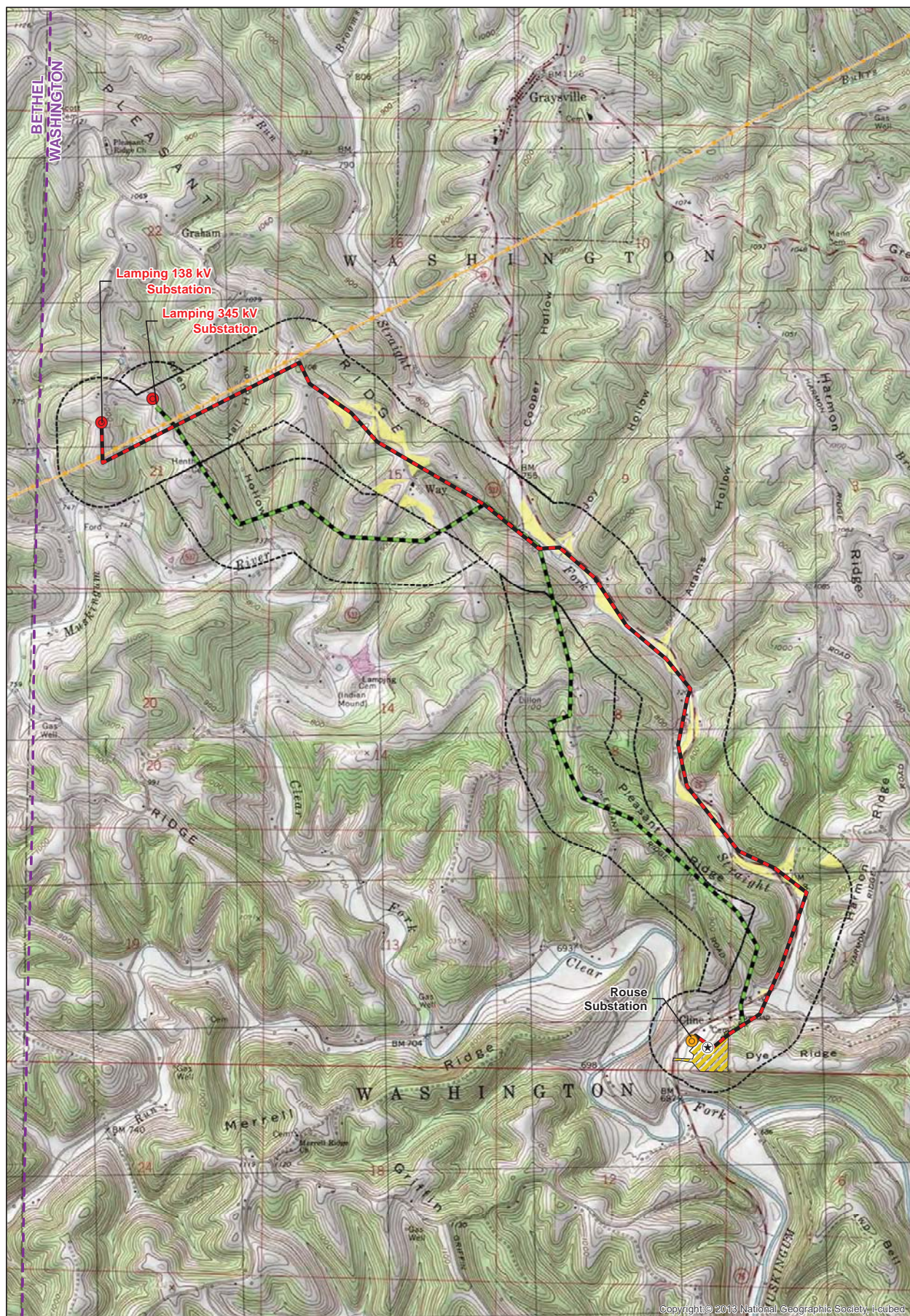
(4) Mitigation Procedures

Text provided in the December 19, 2016 Application filing remains unchanged.

(5) Aesthetic Impact

Text provided in the December 19, 2016 Application filing remains unchanged.





4906-5-08 ECOLOGICAL INFORMATION AND COMPLIANCE WITH PERMITTING REQUIREMENTS

Text provided in the December 19, 2016 Application filing remains unchanged.

(A) ECOLOGICAL MAP

Text provided in the December 19, 2016 Application filing remains unchanged.

(B) FIELD SURVEY REPORT FOR VEGETATION AND SURFACE WATERS

Text provided in the December 19, 2016 Application filing remains unchanged.

(1) Vegetative Communities, Wetlands, and Streams in Study Area**(a) Vegetative Communities**

Text provided in the December 19, 2016 Application filing remains unchanged.

(i) Agricultural and Pasture Fields

Text provided in the December 19, 2016 Application filing remains unchanged.

(ii) Old Field and Scrub-Shrub

Text provided in the December 19, 2016 Application filing remains unchanged.

(iii) Wetlands

Text provided in the December 19, 2016 Application filing remains unchanged.

(iv) Residential

~~Eighteen~~ Nineteen (18 19) residences are located within 1,000 feet of the Preferred Route and 18 residences are located within 1,000 feet of the Alternate Route. Vegetation identified on residential property includes areas of grasses and other herbaceous species, such as fescue, common dandelion, white clover, red clover, and groundivy maintained through mowing.

(v) Utility ROW

Text provided in the December 19, 2016 Application filing remains unchanged.

(vi) Upland Forest

Text provided in the December 19, 2016 Application filing remains unchanged.

(b) Wetlands

Text provided in the December 19, 2016 Application filing remains unchanged.

(i) Summary of National Wetland Inventory Data

Text provided in the December 19, 2016 Application filing remains unchanged.

(ii) Field-Delineated Wetlands

~~Thirty-six~~ Thirty-seven (36 37) wetlands totaling ~~6.86~~ 6.8 acres were delineated within the Preferred Route Field Survey Area. Twenty-one (21) wetlands totaling 0.9 acre were delineated

within the Alternate Route Field Survey Area. Of these wetlands, six wetlands (WRH001, WSM001, WSM002, WSM003, WSM004, and WSM027) were delineated within both the Preferred and Alternate Routes where the routes overlapped.

A total of ~~3.07~~ 2.8 acres of wetlands were delineated within the Preferred Route ROW and 0.21 acre within the Alternate Route ROW. These field-delineated wetlands for the Preferred and Alternate Routes are mapped on revised Figure 8-2A through 8-2E and Figure 8-3A through 8-3E, respectively.

Detailed information on each wetland is provided in Table 8-2. The anticipated temporary construction impacts, where unavoidable, on these wetlands are included in Table 8-2 and further discussed in Section 4906-05-08(B)(3)(b).

TABLE 8-2

Delineated Wetlands within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Wetland Name	Route	Figure	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)	Acreage within Field Survey Area ^b	Acreage within Potential Disturbance Area/ROW ^{c, d}
Preferred Route Wetlands								
WRH001	Preferred/Alternate	2E/3E	PEM	55	2	--	<0.04 <0.1	--
WRH002	Preferred	2D-E	PEM	52	2	--	0.06 0.1	<0.04 <0.1
WRH003	Preferred	2B	PEM	26	1	--	0.03 <0.1	--
WSM001	Preferred/Alternate	2E/3E	PEM	23.5	1	--	<0.04 <0.1	-- <0.1
WSM002	Preferred/Alternate	2E/3E	PEM	36	Modified 2	--	0.04 <0.1	--
WSM003	Preferred/Alternate	2E/3E	PEM	42.5	Modified 2	5	0.07 0.1	0.05 0.1
WSM004	Preferred/Alternate	2E/3E	PEM	41.5	Modified 2	--	0.04 <0.1	<0.04 <0.1
WSM006	Preferred	2E	PSS	45	2	--	0.04 <0.1	--
WSM007	Preferred	2E	PEM	28	1	--	0.05 0.1	--
WSM008	Preferred	2E	PEM	37	Modified 2	--	0.22 0.2	--
WSM009	Preferred	2D-E	PEM	37	Modified 2	--	0.78 0.8	0.15 0.1
WSM011	Preferred	2D-E	PSS	39	Modified 2	--	<0.04	--
WSM012	Preferred	2D-E	PFO	50	2	--	0.03 <0.1	--
WSM013	Preferred	2D	PSS	37	Modified 2	34 21	0.05 0.1	0.05 <0.1
WSM014	Preferred	2D	PEM	34.5	1 or 2 Gray Zone	19 22	0.14 0.1	0.09 0.1
WSM015	Preferred	2C-D	PEM	40.5	Modified 2	105 72	0.21 0.2	0.20 0.2
			PSS			--	0.17 0.2	0.04 <0.1
WSM016	Preferred	2C-D	PSS	40.5	Modified 2	--	0.04 <0.1	<0.04 --

TABLE 8-2

Delineated Wetlands within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Wetland Name	Route	Figure	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)	Acreage within Field Survey Area ^b	Acreage within Potential Disturbance Area/ROW ^{c, d}
WSM017	Preferred	2C-D	PEM	40.5	Modified 2	245 139	0.33 0.3	0.3
			PFO			--	0.49 0.5	0.24 <0.1
WSM018	Preferred	2C-D	PEM	38.5	Modified 2	290 186	0.39 0.4	0.37 0.3
WSM019	Preferred	2C-D	PEM	38.5	Modified 2	463 126	0.49 0.5	0.25 0.3
			PSS			--	0.1	<0.01 <0.1
WSM020	Preferred	2C-D	PEM	38.5	Modified 2	--	0.06 0.1	--
WSM021	Preferred	2C-D	PEM	28.5	1	--	0.03 <0.1	<0.01 <0.1
WSM022	Preferred	2C-D	PEM	50.5	2	260 53	0.64 0.6	0.35 0.3
			PFO			483 446	1.26 1.3	0.67 0.8
WSM023	Preferred	2C	PEM	41	Modified 2	--	0.02 <0.1	-- <0.1
			PSS			--	0.08 0.1	<0.01 <0.1
WSM024	Preferred	2C	PEM	38.5	Modified 2	48 --	0.08 0.1	0.04 <0.1
WSM025	Preferred	2C	PEM	40.5	Modified 2	--	0.07 0.1	0.04 0.1
			PSS			--	0.32 0.3	0.07 0.1
WSM026	Preferred	2C	PSS	55.5	2	-- 11	0.18 0.2	0.04 0.1
WSM027	Preferred/Alternate	2C/3C	PEM	52	2	--	0.04 <0.1	<0.01 --
			PSS			--	0.1	--
			PFO			--	0.04 <0.1	<0.01 --
WSM033	Preferred	2B	PEM	34.5	1 or 2 Gray Zone	--	<0.01 <0.1	--
WSM034	Preferred	2B	PEM	27	1	34 10	0.02 <0.1	0.02 <0.1

TABLE 8-2

Delineated Wetlands within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Wetland Name	Route	Figure	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)	Acreage within Field Survey Area ^b	Acreage within Potential Disturbance Area/ROW ^{c, d}
WSM035	Preferred	2B	PEM	32	1 or 2 Gray Zone	--	0.05 0.1	--
WSM036	Preferred	2B	PEM	38	Modified 2	<u>18</u>	<u><0.01</u> <u><0.1</u>	<u><0.01</u> <u><0.1</u>
WSM037	Preferred	2B	PEM	38.5	Modified 2	--	0.02 <u><0.1</u>	<u><0.01</u> <u><0.1</u>
WSM039	Preferred	2A	PEM	37	Modified 2	<u>17</u>	0.04 <u><0.1</u>	0.03 <u><0.1</u>
WSM040	Preferred	2A	PEM	38	Modified 2	--	<u><0.01</u> <u><0.1</u>	--
WSM042	Preferred	2B	PEM	26	1	--	0.04 <u><0.1</u>	--
<u>WBR008</u>	<u>Preferred</u>	<u>2E</u>	<u>PEM</u>	<u>23</u>	<u>1</u>	<u>--</u>	<u>0.1</u>	<u>--</u>
<u>WDS027</u>	<u>Preferred</u>	<u>2E</u>	<u>PEM</u>	<u>22.5</u>	<u>1</u>	<u>--</u>	<u><0.1</u>	<u>--</u>
Total						<u>1,341</u> <u>1,126</u>	<u>6.96</u> <u>6.8</u>	<u>3.07</u> <u>2.8</u>
Alternate Route Wetlands								
WRH001	Preferred/Alternate	2E/3E	PEM	55	2	--	<0.01	--
WSM001	Preferred/Alternate	2E/3E	PEM	23.5	1	--	<0.01	--
WSM002	Preferred/Alternate	2E/3E	PEM	36	Modified 2	--	0.04	
WSM003	Preferred/Alternate	2E/3E	PEM	42.5	Modified 2	5	0.07	0.05
WSM004	Preferred/Alternate	2E/3E	PEM	41.5	Modified 2	--	0.01	<0.01
WSM005	Alternate	3E	PEM	31	1 or 2 Gray Zone	--	0.04	--
WSM027	Preferred/Alternate	2C/3C	PEM	52	2	--	0.04	<0.01
			PSS			--	0.10	--
			PFO			--	0.04	<0.01

TABLE 8-2

Delineated Wetlands within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Wetland Name	Route	Figure	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)	Acreage within Field Survey Area ^b	Acreage within Potential Disturbance Area/ROW ^{c, d}
WSM028	Alternate	3D	PEM	38.5	Modified 2	--	0.17	--
WSM029	Alternate	3D-E	PEM	46.5	2	14	0.02	0.02
WSM030	Alternate	3D-E	PEM	46.5	2	--	<0.01	--
WSM031	Alternate	3E	PEM	34.5	1 or 2 Gray Zone	--	0.05	<0.01
WSM032	Alternate	3E	PEM	37.5	Modified 2	--	<0.01	--
WSM043	Alternate	3B	PEM	45	2	--	<0.01	--
WSM044	Alternate	3B	PEM	45	2	--	<0.01	--
WSM046	Alternate	3B	PEM	36.5	Modified 2	18	0.05	0.02
WSM047	Alternate	3B	PEM	42	Modified 2	--	0.02	<0.01
WSM048	Alternate	3B	PEM	36	Modified 2	13	0.06	0.03
WSM049	Alternate	3B	PEM	32	1 or 2 Gray Zone	--	0.02	--
WSM050	Alternate	3A	PEM	42	Modified 2	-	<0.01	--
WSM051	Alternate	3A	PEM	44	Modified 2	10	0.03	0.02
WSM052	Alternate	3A-B	PEM	33	1 or 2 Gray Zone	7	0.06	0.02
Total						67	0.89	0.21

TABLE 8-2

Delineated Wetlands within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Wetland Name	Route	Figure	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)	Acreage within Field Survey Area ^b	Acreage within Potential Disturbance Area/ROW ^{c, d}
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Notes:

- a Wetland Type: PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested.
- b The width of the Field Survey Area was 300 feet.
- c The width of the potential disturbance area and the final maintained ROW is planned to be 100 feet.
- d All measurements listed as less than 0.01 were assumed to be 0.01 for calculations (Alternate Route). All measurements listed as less than 0.1 were assumed to be 0 for calculations (Preferred Route).

(c) Waterbodies**(i) Field-Delineated Streams**

Streams and drainage channels were delineated and assessed during the ecological survey of the Preferred and Alternate Routes. Streams with drainage areas greater than one square mile or maximum pool depths greater than 40 centimeters (cm) were assessed using the OEPA Qualitative Habitat Evaluation Index (QHEI). The QHEI is one measure that is used by OEPA, in association with biotic sampling, to determine a stream's aquatic life use designation in accordance with the Ohio water quality standards (OEPA, 2006). The QHEI method classifies streams based on their drainage area. Streams that drain greater than or equal to 20 square miles are classified as "larger streams," while those that drain less than 20 square miles are classified as "headwaters." QHEI-classified streams then receive a narrative rating based upon their score:

- Score less than 30 for both headwaters and larger streams = Very Poor
- Score between 30 and 42 for headwaters, and 30 and 44 for larger streams = Poor
- Score between 43 and 54 for headwaters, and 45 and 59 for larger streams = Fair
- Score between 55 and 69 for headwaters, and 60 and 74 for larger streams = Good
- Score greater than or equal to 70 for headwaters, and 75 for larger streams = Excellent

One stream (SSM010) was evaluated using the QHEI method. This stream had segments located in the Preferred Route and both the Preferred and Alternate Routes where the routes overlapped. Field personnel completed the QHEI near the proposed centerline of the transmission line crossing when possible.

The OEPA's Headwater Habitat Evaluation Index (HHEI) is used to evaluate streams with a drainage area less than or equal to one square mile, and maximum pool depths less than or equal to 40 cm (OEPA, 2012). The HHEI is generally used to assess Primary Headwater Habitat (PHWH) streams that typically fall under the classification of first or second-order streams. The HHEI rates a stream based on its physical habitat and uses that information to determine the biological potential of the stream. The physical habitats scored for the HHEI are substrate type, pool depth, and bank full width. Scores for Class I PHWH Streams range from 0 to 29.9; scores for Class II PHWH Streams range from 30 to 69.9; and scores for Class III PHWH Streams range from 70 to 100. A "Modified" qualifier may be added as a prefix to any of these classes if evidence of anthropogenic alterations, such as channelization and bank stabilization, are observed. A higher PHWH class corresponds with a more continuous flow regime. The flow regime determines the physical habitat of the stream, and is therefore indicative of the biological communities it can support. Streams with scores between 30 and 69 may be classified as potential rheocrene habitat, depending on substrate type, watershed size, and stream flow. The PHWH class for these potential rheocrene streams is then identified by evaluating the biology (fish, salamanders, and benthic macroinvertebrates). Per AEP Ohio Transco's consultant's standard operating procedures, it was not necessary to perform a biotic evaluation, and potential rheocrene streams were listed in Table 8-3 as "Rheocrene Potential."

A total of ~~110~~ 113 streams were evaluated using the HHEI method. ~~Sixty-seven (67)~~ Sixty-nine (69) streams were identified along the Preferred Route Field Survey Area and 55 streams were identified along the Alternate Route Field Survey Area. ~~Seven~~ Six streams (SSM001, SSM002, SSM036, SSM037, SSM039, and SSM040, ~~and SSM094~~) were identified along both the Preferred and Alternate Routes where the routes overlapped. Two streams (SSM007 and SSM035) had segments located within the Field Survey Area of both the Preferred Route and Alternate Route. One stream (SSM034) had segments in both the Preferred Route and the Preferred and Alternate Routes where the routes overlapped. One stream (SSM038) had segments in both the Alternate Route and the Preferred and Alternate Routes where the routes overlapped. One stream (SSM003) had segments located within the Preferred Route, the Alternate Route, and the common portion of the Preferred and Alternate Routes. The HHEI evaluations were completed at the proposed transmission line crossing points, if crossed by the proposed alignment.

Streams identified during the ecological survey on the Preferred and Alternate Routes are shown on revised Figure 8-2A through 8-2E and Figure 8-3A through 8-3E, respectively. Detailed information on each delineated stream is included in Table 8-3. Aquatic life use designations within the Central Ohio tributaries basin obtained from OAC 3745-1-09 are also provided. The Ohio River, located approximately 21 miles south of the project area, is a traditionally navigable waterway (TNW) as defined by the USACE.

Approximately ~~6,443~~ 6,532 linear feet of stream are located within the Preferred Route ROW, while approximately 3,693 linear feet are located within the Alternate Route ROW.

Thirty-two streams are crossed by the Preferred Route centerline ~~has 35 stream crossings~~ with all the streams being crossed once except streams SSM073, SSM075, and SSM003 ~~is~~ are crossed twice and stream SSM010 (Straight Fork) is crossed ~~six~~ seven times. The length of delineated streams located within the Preferred Route Field Survey Area is approximately ~~19,921~~ 22,079 linear feet. The Alternate Route centerline has 26 stream crossings with all the streams being crossed once except streams SSH071, SSM003, SSM038, and SSM092 are each crossed twice. The total length of streams located within the Field Survey Area of the Alternate Route is approximately 12,151 linear feet. Construction impacts on these features are included in Table 8-3 and further discussed in Section 4906-05-08(B)(3)(c).

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QH EI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
Preferred Route												
<u>SBR001</u> <u>UNT to Clear</u> <u>Fork Little</u> <u>Muskingum</u> <u>River</u>	<u>Preferred</u>	<u>2A</u>	<u>Ephemeral</u>	<u>2</u>	<u>1</u>	<u>HHEI</u>	<u>29</u>	--	<u>Modified</u> <u>Class I PHWH</u>	<u>NC</u>	<u>133</u>	<u>73</u>
<u>SBR002</u> <u>UNT to Clear</u> <u>Fork Little</u> <u>Muskingum</u> <u>River</u>	<u>Preferred</u>	<u>2A</u>	<u>Ephemeral</u>	<u>3</u>	<u>2</u>	<u>HHEI</u>	<u>42</u>	--	<u>Modified</u> <u>Class I PHWH</u>	<u>NC</u>	<u>139</u>	<u>0</u>
SDCS001 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	2	0	HHEI	22	--	Class I PHWH	NC	150 <u>161</u>	41 <u>51</u>
SDC002 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	2	0	HHEI	18	--	Class I PHWH	NC	63	--
SDC003 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	1	0	HHEI	18	--	Class I PHWH	NC	94 <u>103</u>	--

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
<u>SMT008</u> <u>UNT to Clear</u> <u>Fork Little</u> <u>Muskingum</u> <u>River</u>	<u>Preferred</u>	<u>2A</u>	<u>Intermittent</u>	<u>2</u>	<u>1</u>	<u>HHEI</u>	<u>30</u>	--	<u>Class II PHWH</u>	<u>Yes</u>	<u>595</u>	<u>283</u>
SRH002 UNT to Straight Fork	Preferred	2D-E	Ephemeral	3-8	0	HHEI	25	--	Modified Class I PHWH	NC	273 <u>270</u>	67 <u>65</u>
SRH003 UNT to Straight Fork	Preferred	2D-E	Intermittent	6-15	0	HHEI	38	--	Modified Class II PHWH	NC <u>Yes</u>	237 <u>235</u>	86 <u>85</u>
SRH004 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	3	0	HHEI	23	--	Modified Class I PHWH	NC	60 <u>71</u>	--
SRH005 UNT to Straight Fork	Preferred	2B	Ephemeral	8	0	HHEI	53	--	Modified Class II PHWH	NC	194	--
SRH006 UNT to Straight Fork	Preferred	2B	Ephemeral	4	0	HHEI	37	--	Modified Class II PHWH	NC	406 <u>116</u>	-7
<u>SRH007</u> <u>UNT to Clear</u> <u>Fork Little</u> <u>Muskingum</u> <u>River</u>	<u>Preferred</u>	<u>2A</u>	<u>Ephemeral</u>	<u>2</u>	<u>0</u>	<u>HHEI</u>	<u>14</u>	--	<u>Modified</u> <u>Class I PHWH</u>	<u>Yes</u>	<u>312</u>	<u>101</u>

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SRH009 UNT to Clear Fork Little Muskingum River	Preferred	2A	Ephemeral	2	0	HHEI	25	--	Modified Class I PHWH	NC	236	56
SSM001 UNT to Straight Fork	Preferred/ Alternate	2E 3E	Intermittent	3	2.4	HHEI	33	--	Modified Class I PHWH	Yes	305	243 197
SSM002 UNT to Straight Fork	Preferred/ Alternate	2E 3E	Ephemeral	3	0	HHEI	14	--	Class I PHWH	Yes	80	55 65
SSM003 UNT to Straight Fork	Preferred, Alternate, Preferred/ Alternate	2E 3E	Intermittent	4-10	6	HHEI	50	--	Modified Class II PHWH	Yes	629	210
SSM005 UNT to Straight Fork	Preferred	2E	Ephemeral	2	0	HHEI	15	--	Class I PHWH	NC	54	--
SSM007 UNT to Straight Fork	Preferred, Alternate	2E 3E	Perennial	5-10	6.3	HHEI	58	--	Modified Class II PHWH	NC	264	55
SSM008 UNT to Straight Fork	Preferred	2E	Ephemeral/ Intermittent	3	3.5	HHEI	38	--	Modified Class II PHWH	NC	436	415 408

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM009 UNT to Straight Fork	Preferred	2E	Intermittent	3-6	3.5	HHEI	38	--	Modified Class II PHWH	Yes	287	416 <u>120</u>
SSM010 Straight Fork	Preferred, Preferred/ Alternate	2C-E 3C	Perennial	50	1	QHEI	68.5	WWH	Good	Yes	6500 <u>7,183</u>	1593 <u>1,287</u>
SSM017 UNT to Straight Fork	Preferred	2D-E	Ephemeral	3	0	HHEI	16	--	Modified Class I PHWH	NC	23 <u>15</u>	--
SSM018 UNT to Straight Fork	Preferred	2D-E	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	NC	225 <u>170</u>	--
SSM019 UNT to Straight Fork	Preferred	2D	Intermittent	6	0	HHEI	35	--	Modified Class II PHWH	Yes	238 <u>251</u>	429 <u>123</u>
SSM020 UNT to Straight Fork	Preferred	2D-E	Intermittent	5	0	HHEI	43	--	Modified Class II PHWH	NC	99	41 <u>22</u>
SSM021 UNT to Straight Fork	Preferred	2D	Perennial	4	3.5	HHEI	38	--	Modified Class II PHWH	NC	408 <u>73</u>	--
SSM022 UNT to Straight Fork	Preferred	2D	Ephemeral	2	0	HHEI	23	--	Modified Class I PHWH	NC	43	-

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM023 UNT to Straight Fork	Preferred	2D	Intermittent	4	4	HHEI	38	--	Modified Class II PHWH	Yes	356 <u>323</u>	464 <u>158</u>
SSM024 UNT to Straight Fork	Preferred	2D	Perennial	4	3.5	HHEI	58	--	Modified Class II PHWH	Yes	209 <u>262</u>	408 <u>118</u>
SSM025 UNT to Straight Fork	Preferred	2C-D	Intermittent	3	3	HHEI	39	--	Modified Class II PHWH	Yes	279 <u>322</u>	72 <u>81</u>
SSM026 UNT to Straight Fork	Preferred	2D	Perennial	8	6	HHEI	65	--	Modified Class II PHWH	Yes	234 <u>232</u>	415 <u>121</u>
SSM027 UNT to Straight Fork	Preferred	2C-D	Intermittent	5	3	HHEI	44	--	Modified Class II PHWH	NC	295 <u>284</u>	--
SSM028 UNT to Straight Fork	Preferred	2C-D	Perennial	7-12	4.3	HHEI	67	--	Modified Class II PHWH	Yes	269 <u>257</u>	404 <u>105</u>
SSM029 UNT to Straight Fork	Preferred	2C-D	Perennial	3-4	7.5	HHEI	45	--	Modified Class II PHWH	Yes	566 <u>590</u>	287 <u>194</u>
SSM030 UNT to Straight Fork	Preferred	2C	Intermittent	4	3.5	HHEI	47	--	Modified Class II PHWH	Yes	328 <u>325</u>	407 <u>109</u>

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM031 UNT to Straight Fork	Preferred	2C	Perennial	4	3	HHEI	35	--	Modified Class II PHWH	Yes	362 <u>357</u>	413 <u>117</u>
SSM032 UNT to Straight Fork	Preferred	2C	Intermittent	6	13.4	HHEI	68	--	Modified Class II PHWH	Yes	309	402 <u>103</u>
SSM033 UNT to Straight Fork	Preferred	2C	Ephemeral	2	2.4	HHEI	31	--	Modified Class II PHWH	NC	333	--
SSM034 UNT to Straight Fork	Preferred, Preferred/ Alternate	2C 3C	Ephemeral	3	0	HHEI	16	--	Modified Class I PHWH	NC	82	26 <u>9</u>
SSM035 UNT to Straight Fork	Preferred, Alternate	2C 3C	Intermittent	5-8	5.5	HHEI	58	--	Class II PHWH	NC	72 <u>94</u>	--
SSM036 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	3	0	HHEI	15	--	Modified Class I PHWH	NC	31	26 <u>13</u>
SSM037 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	NC	116	99 <u>73</u>
SSM038 UNT to Straight Fork	Alternate, Preferred/ Alternate	2C 3B-C	Perennial	8-10	3	HHEI	64	--	Modified Class II PHWH	Yes	405 <u>403</u>	409 <u>119</u>

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM039 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	4	0	HHEI	17	--	Class I PHWH	NC	58 <u>72</u>	--
SSM040 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	4	0	HHEI	16	--	Class I PHWH	NC	18	--
SSM058 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	3	0	HHEI	17	--	Class I PHWH	NC <u>Yes</u>	192 <u>203</u>	62 <u>75</u>
SSM059 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	2	0	HHEI	17	--	Class I PHWH	NC	59	23 <u>33</u>
SSM060 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	2-3	0	HHEI	17	--	Class I PHWH	Yes	179 <u>190</u>	58 <u>69</u>
SSM061 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	Yes	266 <u>277</u>	107

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM062 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	4	0	HHEI	24	--	Modified Class I PHWH	Yes	308 <u>309</u>	403 <u>104</u>
SSM063 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	2	0	HHEI	17	--	Modified Class I PHWH	Yes	50	50
SSM064 UNT to Clear Fork Little Muskingum River	Preferred	2A	Perennial	12	6	HHEI	67	--	Modified Class II PHWH	Yes	340	106
SSM065 UNT to Clear Fork Little Muskingum River	Preferred	2A	Intermittent	4	0	HHEI	27	--	Modified Class I PHWH	Yes <u>NC</u>	524 <u>494</u>	88 <u>85</u>
SSM066 UNT to Clear Fork Little Muskingum River	Preferred	2A	Intermittent	4	1.5	HHEI	22	--	Modified Class I PHWH	NC	52	3 <u>--</u>

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM067 UNT to Clear Fork Little Muskingum River	Preferred	2A	Ephemeral	2	0	HHEI	20	--	Modified Class I PHWH	NC	1	--
SSM069 UNT to Clear Fork Little Muskingum River	Preferred	2A	Ephemeral	2	0	HHEI	16	--	Modified Class I PHWH	NC	25 22	--
SSM070 UNT to Clear Fork Little Muskingum River	Preferred	2A	Ephemeral	2	0	HHEI	16	--	Modified Class I PHWH	NC	3	--
SSM071 UNT to Clear Fork Little Muskingum River	Preferred	2A	Intermittent	5	3	HHEI	60	--	Modified Class II PHWH	NC	136 131	46 --
SSM072 UNT to Clear Fork Little Muskingum River	Preferred	2A	Perennial	8	3	HHEI	64	--	Modified Class II PHWH	Yes	379 384	136

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM073 UNT to Clear Fork Little Muskingum River	Preferred	2A	Intermittent	4	1.5	HHEI	31	--	Class II PHWH	Yes	179	179
SSM074 UNT to Clear Fork Little Muskingum River	Preferred	2A	Ephemeral	2	0	HHEI	24	--	Class I PHWH	NC <u>Yes</u>	33	33
SSM075 UNT to Clear Fork Little Muskingum River	Preferred	2A-B	Intermittent	6	0	HHEI	38	--	Class II PHWH	Yes	710	481 <u>476</u>
SSM076 UNT to Clear Fork Little Muskingum River	Preferred	2A-B	Ephemeral	2	0	HHEI	15	--	Class I PHWH	NC	31	29 <u>26</u>
SSM077 UNT to Clear Fork Little Muskingum River	Preferred	2A-B	Ephemeral	3	0	HHEI	15	--	Class I PHWH	NC	95	88 <u>85</u>

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM078 UNT to Clear Fork Little Muskingum River	Preferred	2A-B	Intermittent	3	0	HHEI	28	--	Modified Class I PHWH	NC	596	433 <u>112</u>
SSM081 UNT to Clear Fork Little Muskingum River	Preferred	2B-C	Ephemeral	3-4	0	HHEI	16	--	Modified Class I PHWH	NC <u>Yes</u>	157 <u>170</u>	79 <u>90</u>
SSM082 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	3-6	0	HHEI	15	--	Modified Class I PHWH	Yes	190 <u>202</u>	107 <u>95</u>
SSM083 UNT to Clear Fork Little Muskingum River	Preferred	2B-C	Ephemeral	4-4.5	0	HHEI	17	--	Modified Class I PHWH	NC	108 <u>119</u>	39 <u>50</u>
SSM084 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	3-6	0	HHEI	16	--	Modified Class I PHWH	Yes	278 <u>290</u>	83 <u>93</u>

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QH EI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM086 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	4	0	HHEI	17	--	Modified Class I PHWH	NC	70	--
SSM087 UNT to Clear Fork Little Muskingum River	Preferred	2B	Intermittent	4	1.5	HHEI	31	--	Modified Class II PHWH	NC	85	--
SSM088 UNT to Clear Fork Little Muskingum River	Preferred	2B	Ephemeral	2	0	HHEI	14	--	Modified Class I PHWH	NC	50	--
SSM094 UNT to Clear Fork Little Muskingum River	Preferred/ Alternate	2A 3A	Intermittent	6	10	HHEI	51	--	Class II PHWH	NC	41	--
SSM097 UNT to Clear Fork Little Muskingum River	Preferred	2A	Ephemeral	2	0	HHEI	16	--	Modified Class I PHWH	NC	54	--
Total											19,921 22,079	6,443 6,532

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
Alternate Route												
SRH001 UNT to Straight Fork	Alternate	3E	Ephemeral	3	0	HHEI	19	--	Modified Class I PHWH	NC	61	--
SRH013 UNT to Clear Fork Little Muskingum River	Alternate	3D	Ephemeral	5	0	HHEI	22	--	Class I PHWH	NC	54	--
SSH071 UNT to Clear Fork Little Muskingum River	Alternate	3C-D	Intermittent	8-12	2	HHEI	45	--	Class II PHWH	Yes	1432	308
SSH072 UNT to Clear Fork Little Muskingum River	Alternate	3C-D	Ephemeral	2	0	HHEI	21	--	Class I PHWH	NC	111	--
SSH073 UNT to Clear Fork Little Muskingum River	Alternate	3D	Ephemeral	8	0	HHEI	40	--	Class II PHWH	NC	114	--

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSH074 UNT to Clear Fork Little Muskingum River	Alternate	3D	Ephemeral	3-6	0	HHEI	13	--	Modified Class I PHWH	Yes	212	105
SSH075 UNT to Clear Fork Little Muskingum River	Alternate	3D	Ephemeral	5	0	HHEI	30	--	Class I PHWH	NC	127	18
SSM001 UNT to Straight Fork	Preferred/ Alternate	2E 3E	Intermittent	3	2.4	HHEI	33	--	Modified Class I PHWH	Yes	305	213
SSM002 UNT to Straight Fork	Preferred/ Alternate	2E 3E	Ephemeral	3	0	HHEI	14	--	Class I PHWH	Yes	80	55
SSM003 UNT to Straight Fork	Preferred, Alternate, Preferred/ Alternate	2E 3E	Intermittent	4-10	6	HHEI	42	--	Modified Class II PHWH	Yes	830	225
SSM004 UNT to Straight Fork	Alternate	3E	Intermittent	2	0.8	HHEI	21	--	Class I PHWH	NC	37	--
SSM007 UNT to Straight Fork	Preferred, Alternate	2E 3E	Intermittent	5-10	1.5	HHEI	53	--	Class II PHWH	Yes	506	195

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM010 Straight Fork	Preferred, Preferred/ Alternate	2C-E 3C	Perennial	50	1	QHEI	68.5	WWH	Good	NC	714	--
SSM034 UNT to Straight Fork	Preferred, Preferred/ Alternate	2C 3C	Ephemeral	3	0	HHEI	16	--	Modified Class I PHWH	NC	82	16
SSM035 UNT to Straight Fork	Preferred, Alternate	2C 3C	Intermittent	4	1.5	HHEI	48	--	Class II PHWH	Yes	441	109
SSM036 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	3	0	HHEI	15	--	Modified Class I PHWH	NC	31	26
SSM037 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	NC	116	89
SSM038 UNT to Straight Fork	Alternate, Preferred/ Alternate	2C 3B-C	Perennial	5-8	4	HHEI	66	--	Modified Class II PHWH	Yes	736	211
SSM039 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	4	0	HHEI	17	--	Class I PHWH	NC	58	--
SSM040 UNT to Straight Fork	Preferred/ Alternate	2C 3C	Ephemeral	4	0	HHEI	16	--	Class I PHWH	NC	18	--

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM041 UNT to Straight Fork	Alternate	3C	Ephemeral	2	0	HHEI	15	--	Modified Class I PHWH	NC	124	--
SSM042 UNT to Straight Fork	Alternate	3C	Ephemeral	3	0	HHEI	18	--	Class I PHWH	NC	114	--
SSM043 UNT to Straight Fork	Alternate	3C	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	Yes	252	134
SSM044 UNT to Straight Fork	Alternate	3C	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	Yes	261	121
SSM045 UNT to Straight Fork	Alternate	3C	Ephemeral	2	0	HHEI	17	--	Class I PHWH	NC	43	--
SSM046 UNT to Straight Fork	Alternate	3C	Perennial	14	3	HHEI	65	--	Class III PHWH	Yes	273	104
SSM047 UNT to Straight Fork	Alternate	3C	Ephemeral	3	0	HHEI	18	--	Class I PHWH	Yes	154	154
SSM048 UNT to Straight Fork	Alternate	3C	Intermittent	5	1.2	HHEI	42	--	Class II PHWH	NC	77	--

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM049 UNT to Straight Fork	Alternate	3D-E	Ephemeral	2	0	HHEI	17	--	Modified Class I PHWH	NC	168	29
SSM050 UNT to Straight Fork	Alternate	3D-E	Intermittent	4	1.5	HHEI	42	--	Class II PHWH	NC	343	--
SSM051 UNT to Straight Fork	Alternate	3D-E	Ephemeral	3	0	HHEI	17	--	Class I PHWH	NC	110	72
SSM052 UNT to Straight Fork	Alternate	3D-E	Intermittent	3	1.2	HHEI	22	--	Class I PHWH	Yes	161	106
SSM053 UNT to Straight Fork	Alternate	3E	Ephemeral	2	0	HHEI	14	--	Class I PHWH	NC	121	--
SSM054 UNT to Straight Fork	Alternate	3E	Ephemeral	3	0	HHEI	17	--	Class I PHWH	NC	82	--
SSM055 UNT to Straight Fork	Alternate	3E	Ephemeral	3	0	HHEI	25	--	Class I PHWH	NC	94	--
SSM056 UNT to Straight Fork	Alternate	3E	Ephemeral	3	0	HHEI	17	--	Modified Class I PHWH	Yes	256	141

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM057 UNT to Straight Fork	Alternate	3E	Ephemeral	2	0	HHEI	17	--	Class I PHWH	Yes	120	81
SSM089 UNT to Straight Fork	Alternate	3B-C	Ephemeral	3	0.8	HHEI	21	--	Class I PHWH	NC	390	285
SSM090 UNT to Straight Fork	Alternate	3B-C	Ephemeral	3	0	HHEI	16	--	Class I PHWH	NC	109	24
SSM091 UNT to Straight Fork	Alternate	3B-C	Ephemeral	5	0	HHEI	17	--	Modified Class I PHWH	NC	116	60
SSM092 UNT to Clear Fork Little Muskingum River	Alternate	3B	Perennial	9	5.5	HHEI	66	--	Class III PHWH	Yes	403	137
SSM094 UNT to Clear Fork Little Muskingum River	Preferred/ Alternate	2A 3A	Intermittent	6	10	HHEI	51	--	Class II PHWH	NC	41	--
SSM098 UNT to Clear Fork Little Muskingum River	Alternate	3B	Intermittent	6	4	HHEI	48	--	Rheocrene Potential	Yes	307	100

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM099 UNT to Clear Fork Little Muskingum River	Alternate	3B	Intermittent	3	1.2	HHEI	22	--	Class I PHWH	NC	45	19
SSM100 UNT to Clear Fork Little Muskingum River	Alternate	3B	Ephemeral	2	0	HHEI	16	--	Modified Class I PHWH	NC	41	--
SSM101 UNT to Clear Fork Little Muskingum River	Alternate	3B	Ephemeral	3	0	HHEI	18	--	Modified Class I PHWH	NC	60	--
SSM102 UNT to Clear Fork Little Muskingum River	Alternate	3B	Ephemeral	4	1.2	HHEI	31	--	Modified Class II PHWH	NC	191	54
SSM103 UNT to Clear Fork Little Muskingum River	Alternate	3B	Perennial	10	6.3	HHEI	63	--	Class III PHWH	Yes	371	127

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM104 UNT to Clear Fork Little Muskingum River	Alternate	3B	Ephemeral	3	0	HHEI	25	--	Class I PHWH	NC	49	2
SSM105 UNT to Clear Fork Little Muskingum River	Alternate	3B	Ephemeral	3	0	HHEI	26	--	Class I PHWH	NC	266	--
SSM106 UNT to Clear Fork Little Muskingum River	Alternate	3A-B	Perennial	5	6.3	HHEI	58	--	Modified Class II PHWH	Yes	310	100
SSM107 UNT to Clear Fork Little Muskingum River	Alternate	3A	Intermittent	4	0.8	HHEI	22	--	Modified Class I PHWH	Yes	245	101
SSM108 UNT to Clear Fork Little Muskingum River	Alternate	3A	Ephemeral	2	0	HHEI	16	--	Modified Class I PHWH	Yes	88	55

TABLE 8-3

Streams within the Preferred and Alternate Route Environmental Field Survey Area and Potential Disturbance Area/ROW

Stream ID Waterbody Name	Route	Figure	Flow Regime	Top of Bank Width (feet)	Maximum Pool Depth (inches)	Form	Score	OEPA Aquatic Life Use Designation	PHWH Class (HHEI)/ Narrative Rating (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SSM109 UNT to Clear Fork Little Muskingum River	Alternate	3A	Ephemeral	2	0	HHEI	23	--	Class I PHWH	Yes	217	117
SSM110 UNT to Clear Fork Little Muskingum River	Alternate	3A	Ephemeral	2	0	HHEI	16	--	Modified Class I PHWH	NC	52	--
SSM111 UNT to Clear Fork Little Muskingum River	Alternate	3A	Ephemeral	2	0	HHEI	15	--	Modified Class I PHWH	NC	32	--
Total											12,151	3,693

Notes:

- a NC = Not crossed by proposed ROW.
- b The width of the Field Survey Area was 300 feet.
- c The width of the potential disturbance area and the final maintained ROW is planned to be 100 feet.
- UNT = unnamed tributary

(ii) Lakes, Ponds, and Reservoirs

Text provided in the December 19, 2016 Application filing remains unchanged.

(2) Map of Facility, Right-of-Way, and Delineated Resources

Text provided in the December 19, 2016 Application filing remains unchanged.

(3) Construction Impacts on Vegetation and Surface Waters**(a) Construction Impacts on Vegetation**

The construction impacts on woody and herbaceous vegetation along both the Preferred and Alternate Routes will be limited to the initial clearing of vegetation within the 100-foot ROW for the proposed transmission line and access roads. Specific locations for access roads will be identified at the time of AEP Ohio Transco's transmission line easement acquisition process. Trees adjacent to the proposed ROW, that are dead, dying, diseased, leaning, significantly encroaching, or prone to failure may require clearing to allow for safe operation of the transmission line. Vegetative wastes (such as tree limbs and trunks) generated during the construction phase will be windrowed or chipped and disposed of appropriately depending on individual landowner requests. The approximate vegetation impacts along the Preferred and Alternate Route ROWs are provided in Table 8-4.

TABLE 8-4
Approximate Vegetation Impacts Along the Potential Disturbance Area/ROW

Land Use Type	Length of Route (in feet)	Length of Route (in miles)	Acreage within ROW
Preferred Route			
Agricultural	2,189 <u>4,920</u>	0.41 <u>0.9</u>	8.1 <u>7.92</u>
Industrial/Commercial	166 <u>172</u>	0.03	0.5 <u>0.49</u>
Open Land / Pasture	730 <u>2,565</u>	0.14 <u>0.5</u>	2.7 <u>6.30</u>
Utility ROW	11,715 <u>3,458</u>	2.22 <u>0.7</u>	17.8 <u>12.93</u>
Road / Railroad ROW	1,766 <u>1,682</u>	0.33 <u>0.3</u>	6.0 <u>5.24</u>
Water (including delineated wetlands and streams)	32 <u>1,667</u>	0.01 <u>0.3</u>	0.8 <u>4.14</u>
Woodlot	8,836 <u>13,890</u>	1.67 <u>2.6</u>	22.6 <u>28.06</u>
Alternate Route			
Agricultural	164	0.03	0.6
Open Land / Pasture	4,069	0.77	9.2
Utility ROW	1,886	0.36	2.9
Road / Railroad ROW	721	0.14	1.3
Woodlot	18,008	3.41	43.2

(b) Construction Impacts on Wetlands

Preferred Route: During wetland and waterbody delineations, ~~21~~ 22 wetlands were identified along the Preferred Route within the proposed ROW, totaling ~~3.07~~ 2.8 acres. Detailed information about each feature can be found in Table 8-2 in Section 4906-05-08(B)(b)(ii). ~~Eleven~~ Twelve of these wetlands are crossed by the Preferred Route centerline, totaling ~~1,341~~ 1,126 linear feet. Impacts to the wetlands will be avoided by placing transmission line structures outside of wetland boundaries. Where temporary construction access through a wetland cannot be avoided, the crossing will occur during dry conditions or protective construction matting will be used to minimize impacts from construction vehicles.

Wetland ORAM categories delineated in the Preferred Route ROW are detailed below:

- Category 1 wetlands: ~~Two~~ Three Category 1 wetlands with ORAM scores of 23.5, 27 and 28.5 were identified within the ROW, totaling ~~0.03~~ <0.1 acre. ~~Neither~~ None of these ~~were~~ are wooded wetlands (PFO) or scrub-shrub wetlands (PSS).
- Category 2 wetlands: ~~Twenty~~ Eighteen Category 2 wetlands with ORAM scores ranging from 34.5 to 55.5 were identified within the proposed ROW, totaling ~~3.04~~ 2.8 acres. Of that total, ~~0.89~~ 0.8 acre of PFO wetland and ~~0.23~~ 0.2 acre of PSS wetland will be impacted through the clearing of trees and shrubs during construction. This will result in these PFO and PSS wetlands being converted to PEM.
- Category 3 wetlands: No Category 3 wetlands will be crossed; therefore, no construction impacts are anticipated.

Alternate Route: During wetland and waterbody delineations, 10 wetlands were identified along the Alternate Route ROW, totaling 0.21 acre. The delineated wetlands are shown on Figures 8-3A through 8-3E. Detailed information about each feature can be found in Table 8-2 in Section 4906-05-08(B)(b)(ii).

Six wetlands were crossed by the centerline of the proposed Alternate Route, totaling 67 linear feet. Impacts to wetlands will be avoided by placing transmission line structures outside wetland boundaries. Where temporary construction access through a wetland cannot be avoided, the crossing will occur during dry conditions or matting will be used to minimize impacts.

Wetland ORAM categories delineated in the Alternate Route ROW are detailed below:

- Category 1 wetlands: For the Alternate Route, no Category 1 wetlands will be crossed; therefore, no construction impacts are anticipated.
- Category 2 wetlands: Ten Category 2 wetlands with ORAM scores ranging from 33 to 52 were identified within the proposed ROW, totaling 0.21 acre. Of that total, less than 0.01 acre of PFO wetland will be impacted through the clearing of trees and shrubs during construction. This will result in this PFO wetland being converted to PEM.

- Category 3 wetlands: For the Alternate Route, no Category 3 wetlands will be crossed; therefore, no construction impacts are anticipated.

Through appropriate planning and permitting, care will be taken near wetlands to avoid or minimize filling and sedimentation during construction. AEP Ohio Transco will avoid the placement of pole structures within wetlands to the extent practical. Selective clearing will be required to remove specific types of woody vegetation in wetlands that might impede construction or interfere with operation of the transmission line. Where wooded or forested wetlands occur within the ROW, the trees will be removed.

To minimize soil erosion and sedimentation during construction, best management practices (BMPs) such as utilization of silt fences and construction matting will be implemented as required during construction. Sedimentation potential at wetlands is unlikely because of the plans for structure placement outside of wetlands, and the fact that construction equipment will only cross wetlands if necessary, and will do so using construction matting if wet conditions require.

Disturbance of soils in wetland areas during construction will be minimized. No fill material will be placed in any wetland area. Although not anticipated, if it is necessary to place a pole or guy wires within a wetland, they will be accessed using construction matting if wet conditions exist at the time of construction. No excavation other than the boring of a hole for pole installation will be performed within the wetland. In the event that pole placement is required within a wetland, no additional fill will be placed in the wetlands beyond the placement of the pole structure and borehole backfill.

Wetland areas will be clearly staked prior to the commencement of any clearing in order to minimize incidental vehicle impacts. Other than the remote possibility of pole locations within wetlands discussed above, operation of heavy mechanized equipment is not planned within any identified wetland areas, although some construction equipment may need to cross wetland areas on construction matting if wet conditions exist at the time. Woody vegetation in wetlands will be hand-cut by chain saws or other non-mechanized techniques. When necessary, rubber-wheeled vehicles, or vehicles equipped with tracks, will be used to remove vegetation debris. AEP Ohio Transco will perform all construction work in accordance with the conditions and requirements of regulatory permits obtained for the Project.

(c) Construction Impacts on Waterbodies

The Preferred Route centerline crosses ~~35~~ 32 streams. The Alternate Route centerline crosses 26 streams. ~~Five~~ Seven streams, SSH071, SSM003, SSM010, SSM038, SSM073, SSM075, and SSM092 are crossed by the centerline more than once. Detailed information about each feature can be found in Table 8-3 in Section 4906-05-08(B)(c)(i).

Approximately ~~6,443~~ 6,532 linear feet of stream are located within the Preferred Route ROW, while approximately 3,693 linear feet are located within the Alternate Route ROW.

AEP Ohio Transco will not conduct mechanized clearing within 25 feet of any stream, and will only clear (using hand cutting techniques) those trees in this area that are tall enough to or have the potential to interfere with safe construction and operation of the line. No streams will be filled or

permanently impacted. Some streams may have to be crossed by construction vehicles. Exact pole locations have not been fully determined to date. Access paths to proposed pole locations will be evaluated when more detailed engineering is performed and landowner negotiations progress. If a new stream crossing were necessary, it would comply with one of the following three proposed methods to cross streams:

- Temporary stream ford
- Temporary culvert stream crossings
- Temporary access bridge

Temporary stream fords are proposed for crossing low quality ephemeral and intermittent streams with a drainage basin less than 1 square mile. This will involve minimum clearing necessary to gain access to the stream and for passage of construction vehicles. Stone, rock, or aggregate of ODOT number 1 as a minimum size will be placed in the channel to provide a solid base for vehicle passage.

- Disturbance of the stream will be kept to a minimum, stream bank vegetation will be preserved to the maximum extent practical, and the stream crossing width will be kept as narrow as possible. Clearing will be done by hand cutting rather than grubbing.
- Sediment-laden runoff will be prevented from flowing from the access road directly into the stream. Diversions and swales will be used to direct runoff to stormwater management locations. Silt fences will be used as needed according to local topographic conditions.
- Aggregate stone and rock used for this type of stream crossing will not be removed. It will be formed so that it does not create an impoundment, impede fish passage, or cause erosion of the stream banks.
- Following completion of the work, the areas cleared for the temporary access crossing will be stabilized through plantings of woody species where appropriate. Areas of exposed soil will be stabilized in accordance with the stormwater pollution prevention plan (SWPPP) for the Project.

Culvert stream crossings are proposed for crossing marginal quality perennial, ephemeral, and intermittent streams with a drainage basin of less than 1 mile. These crossings may be removed or remain in place in order to provide maintenance access to the line (critical if service is to be reliable).

- Disturbance of the stream will be kept to a minimum, stream bank vegetation will be preserved to the maximum extent practical, and the stream crossing width will be kept as narrow as possible. Clearing will be done by hand-cutting techniques rather than grubbing. Roots and stumps will be left in place to aid stabilization and to accelerate re-vegetation.

- Sediment laden runoff controlled to minimize from flowing from the access road directly into the stream. Diversions and swales will be used to direct runoff to stormwater management locations. Silt fence will be used as needed according to local topographic conditions.
- Culvert pipes will be placed on the existing streambed to avoid a drop or waterfall at the downstream end of the pipe, which would be a barrier to fish migration. Crossings will be placed in shallow areas rather than pools.
- Culverts will be sized to be at least three times the depth of the normal stream flow at the crossing location. The minimum diameter culvert that will be used is 18 inches.
- There will be a sufficient number of culvert pipes to cross the stream completely with no more than a 12-inch space between each one.
- Stone, rock, or aggregate of ODOT number 1 as a minimum size will be placed in the channel, and between culverts. To prevent washouts, larger stone may be used with gabion mattresses. No soil will be placed in the stream channel.
- After completion of construction, some rock aggregate and structures such as culvert pipes used for the crossing will be left in place if approved by the landowner. Care will be taken so that aggregate does not create an impoundment or impede fish passage. Structures such as gabion mattresses will be removed.
- Stream banks will be stabilized and woody species planted as appropriate.

Temporary access bridges or culvert stream crossings will be used for high quality perennial, ephemeral, and intermittent streams and streams with a drainage basin greater than 1 square mile.

- Disturbance of the stream will be kept to a minimum, stream bank vegetation will be preserved to the maximum extent practical, and the stream crossing width will be kept as narrow as possible. Clearing will be done by hand cutting rather than grubbing. Roots and stumps will be left in place to aid stabilization and to accelerate re-vegetation.
- Sediment laden runoff will be controlled to minimize flowing from the access road directly into the stream. Diversions and swales will be used to direct runoff to stormwater management locations. Silt fence will be used as needed according to local topographic conditions.
- Bridges will be constructed to span the entire channel. If the channel width exceeds 8 feet, then a floating pier or bridge support may be placed in the channel. No more than one pier, footing, or support will be allowed for every 8 feet of span width. No footings, piers, or supports will be allowed for spans of less than 8 feet.
- No fill other than clean stone, free from soil, will be placed within the stream channel.

These crossings will be addressed in the Project SWPPP. Some of the access routes may be left in place for maintenance activity. Details regarding the proposed access road stream crossing methods will be provided to the OPSB separately.

Impacts to ponds are not anticipated by the construction, operation, or maintenance of the proposed transmission line. BMPs, including utilization of silt fence or filter sock, will be used as appropriate during construction to minimize runoff siltation.

(4) Operation and Maintenance Impacts on Vegetation and Surface Water

Text provided in the December 19, 2016 Application filing remains unchanged.

(5) Mitigation Procedures

Text provided in the December 19, 2016 Application filing remains unchanged.

(C) LITERATURE SURVEY OF PLANT AND ANIMAL LIFE POTENTIALLY AFFECTED

Text provided in the December 19, 2016 Application filing remains unchanged.

(D) SITE GEOLOGY

(1) Site Geology

Both routes are located within the Marietta Plateau region of the Appalachian Plateaus physiographic province (ODNR, 1998). The Marietta Plateau region is characterized by high relief and elevations between 515 and 1,400 feet above sea level. Pennsylvanian-age Upper Conemaugh Group through Permian-age Dunkard Group cyclic sequences of red and gray shales, and siltstones, sandstones, limes, and coals characterizes the geology of the area. Pleistocene-age Minford clay, red and brown silty clay loam colluvium, and landslide deposits are also notable geologic characteristics of the area (ODNR, 1998). Approximately ~~56~~ 57 percent of the area within 1,000 feet of the Preferred Route occurs within the Monongahela Group and ~~44~~ 43 percent within the Dunkard Group. Approximately 53 percent of the area within 1,000 feet of the Alternate Route occurs within the Dunkard Group and 47 percent within the Monongahela Group (USGS, 2005).

(2) Slopes and Foundation Soil Suitability

Slopes exceeding 12 percent, obtained from the USGS, National Elevation Dataset, are identified in revised Figure 8-2A through 8-2E and Figure 8-3A through 8-3E. Approximately ~~82~~ 83 percent of the area within 1,000 feet of the Preferred Route occurs where slopes exceed 12 percent. Slopes exceeding 12 percent occur within approximately 86 percent of the area within 1,000 feet of the Alternate Route. During construction, AEP Ohio Transco will implement a SWPPP and associated BMPs as necessary to control erosion and sedimentation in areas with slopes exceeding 12 percent. Once construction is complete, soils will be revegetated and stabilized. As a result, no erosional impacts resulting from slopes exceeding 12 percent are expected.

The bedrock geologies consisting primarily of shales and siltstones and overlaying soils consisting of primarily silt loams and silty clay loams, present along both routes, are generally expected to

be suitable for foundation construction. To obtain further site-specific details on the suitability of the soils for foundation construction, AEP Ohio Transco will conduct detailed engineering design and geotechnical soil borings. Engineering design and geotechnical test drilling will likely be completed soon after the Project is certificated by OPSB and engineering plans and boring logs will be provided to the staff shortly thereafter.

At a minimum, geotechnical soil borings will provide the following information to be utilized for structure placement and foundation design engineering as needed:

- (1) Subsurface Soil Properties
- (2) Static Water Level
- (3) Rock Quality Description
- (4) Percent Recovery
- (5) Depth and Description of Bedrock Contact

AEP Ohio Transco anticipates that foundations will only be required at some angle structures that will be ultimately determined during the engineering design. When required, foundations will be engineered based on the results of geotechnical soil boring and laboratory test results to ensure they are sited in locations considered suitable based on soil and rock properties and surface slope.

(E) ENVIRONMENTAL AND AVIATION REGULATION COMPLIANCE

Text provided in the December 19, 2016 Application filing remains unchanged.

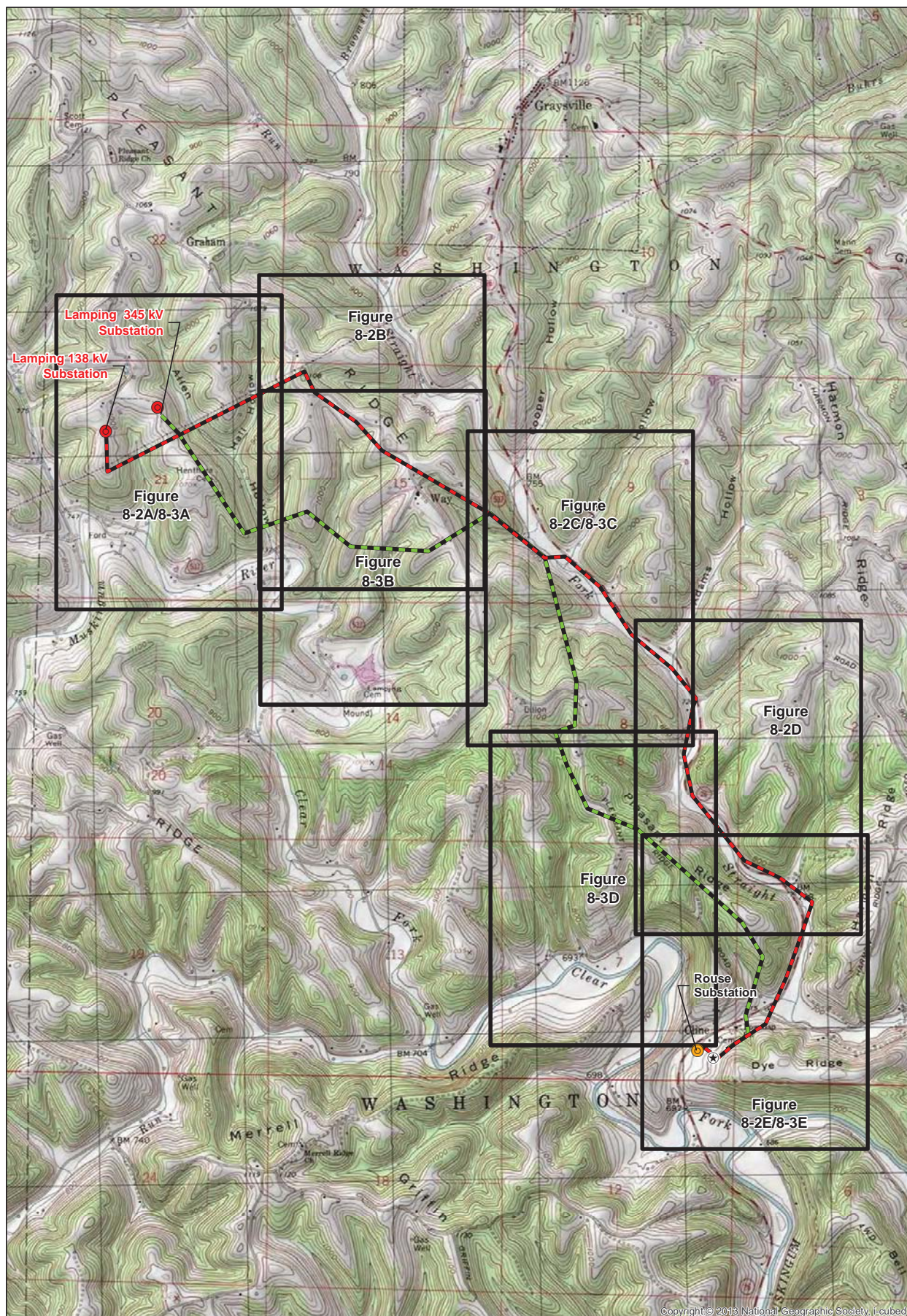
REFERENCES

Ohio Department of Natural Resources (ODNR). 1998. Physiographic regions of Ohio: Ohio Department of Natural resources. Division of Geological Survey. page-size map with text, 2 p., scale 1:2,100,00.

Ohio Environmental Protection Agency (OEPA). 2006. *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. OEPA Technical Bulletin EAS/2006-06-1.

Ohio Environmental Protection Agency (OEPA). 2012. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. Version 3.0. January 2012.

U.S. Geological Survey (USGS). 2005. Mineral Resources On-Line Spatial Data. Ohio Geologic map data. <http://mrddata.usgs.gov/geology/state/state.php?state=OH>. Page last modified on July 20, 2016. Accessed October 25, 2016.



Legend

- Planned Location of Rouse Substation by Washington Electric Cooperative
- AEP Switch Pole Location
- Substation
- Preferred Route
- Alternate Route
- Figure Key

BASE MAP SOURCE:
USGS 7.5-minute Topographic
Quadrangles:
Rinard Mills, Graysville

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983

April 22, 2019

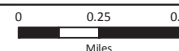
LOCATOR MAP

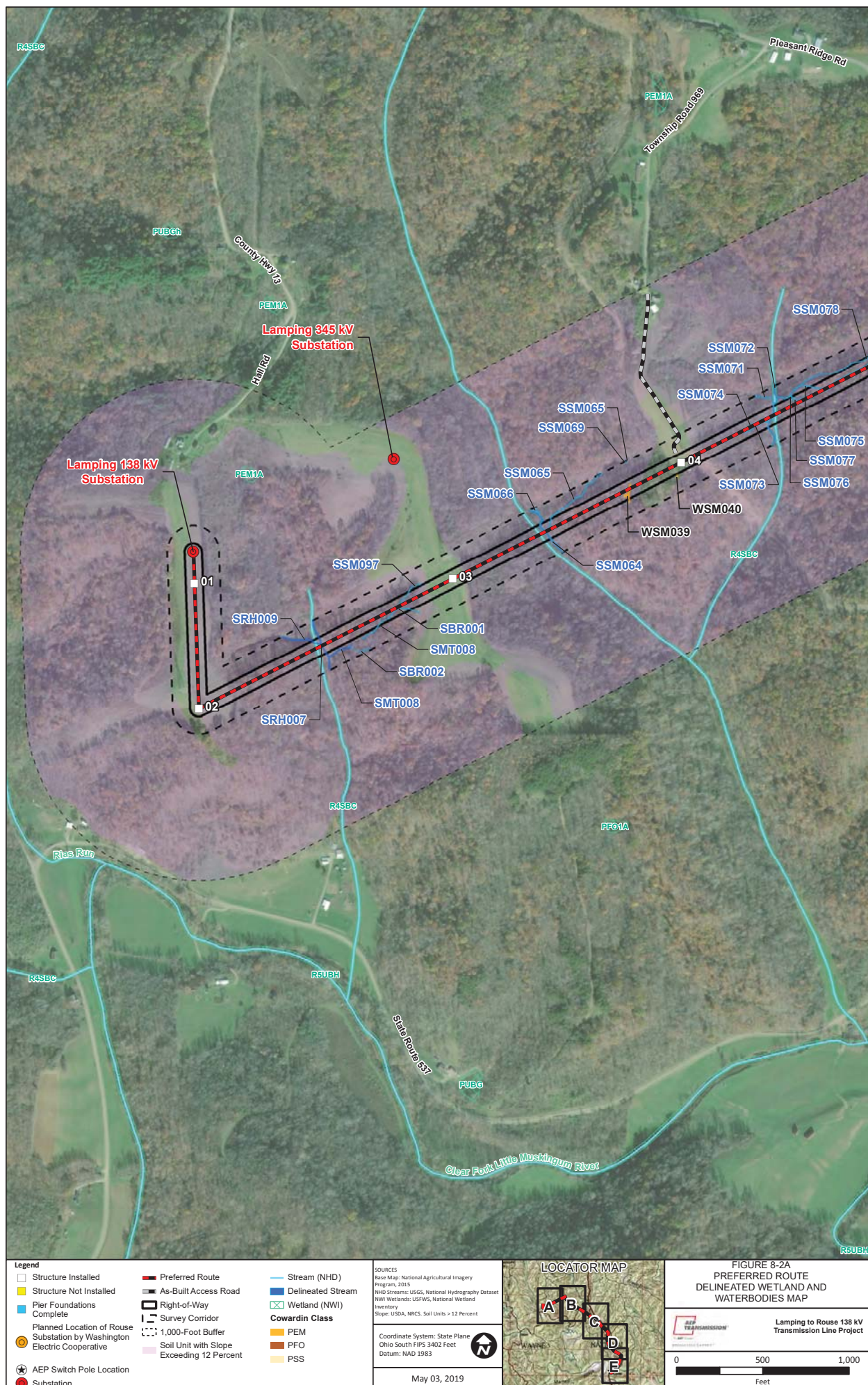


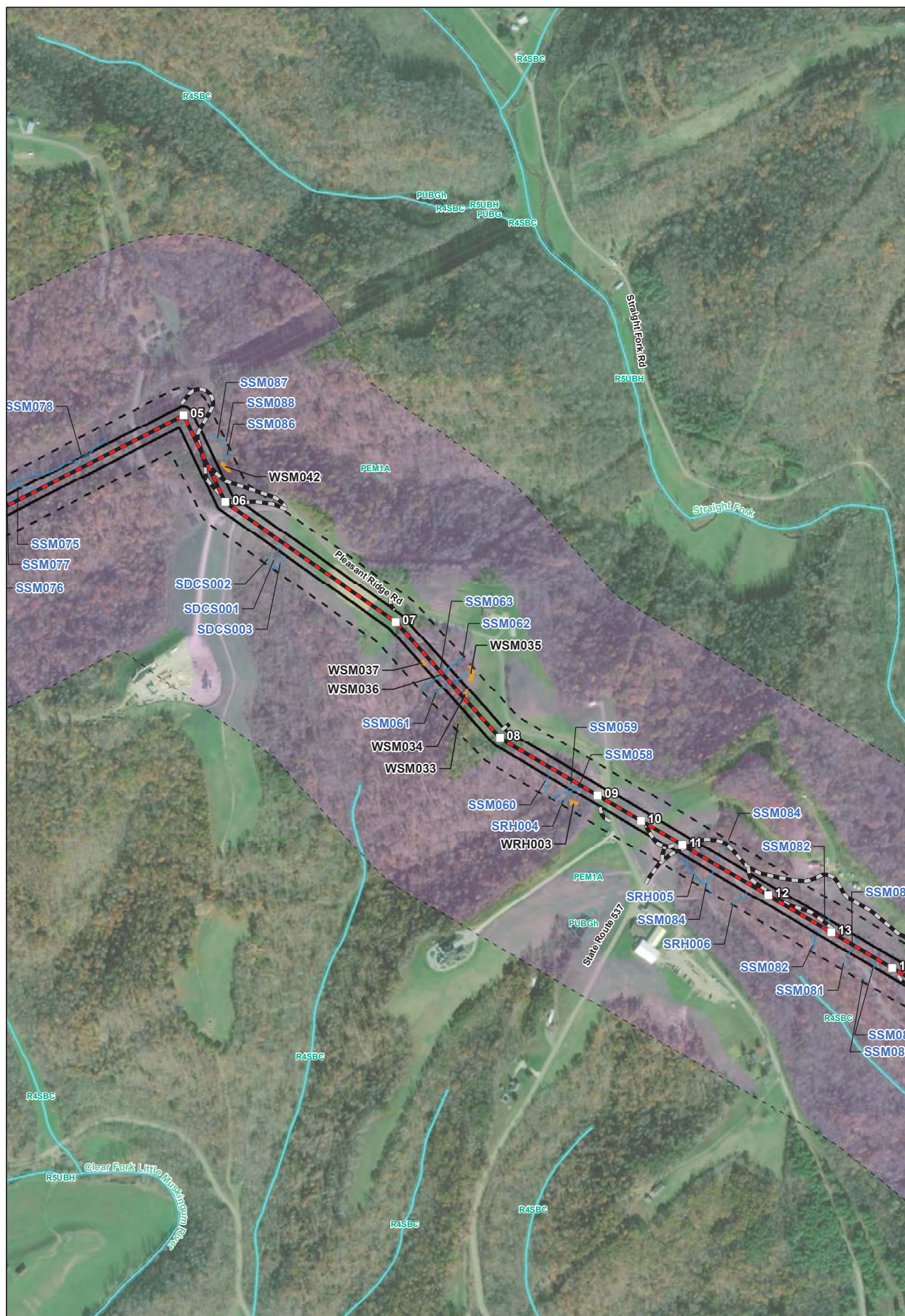
FIGURE 8-1 OVERVIEW MAP



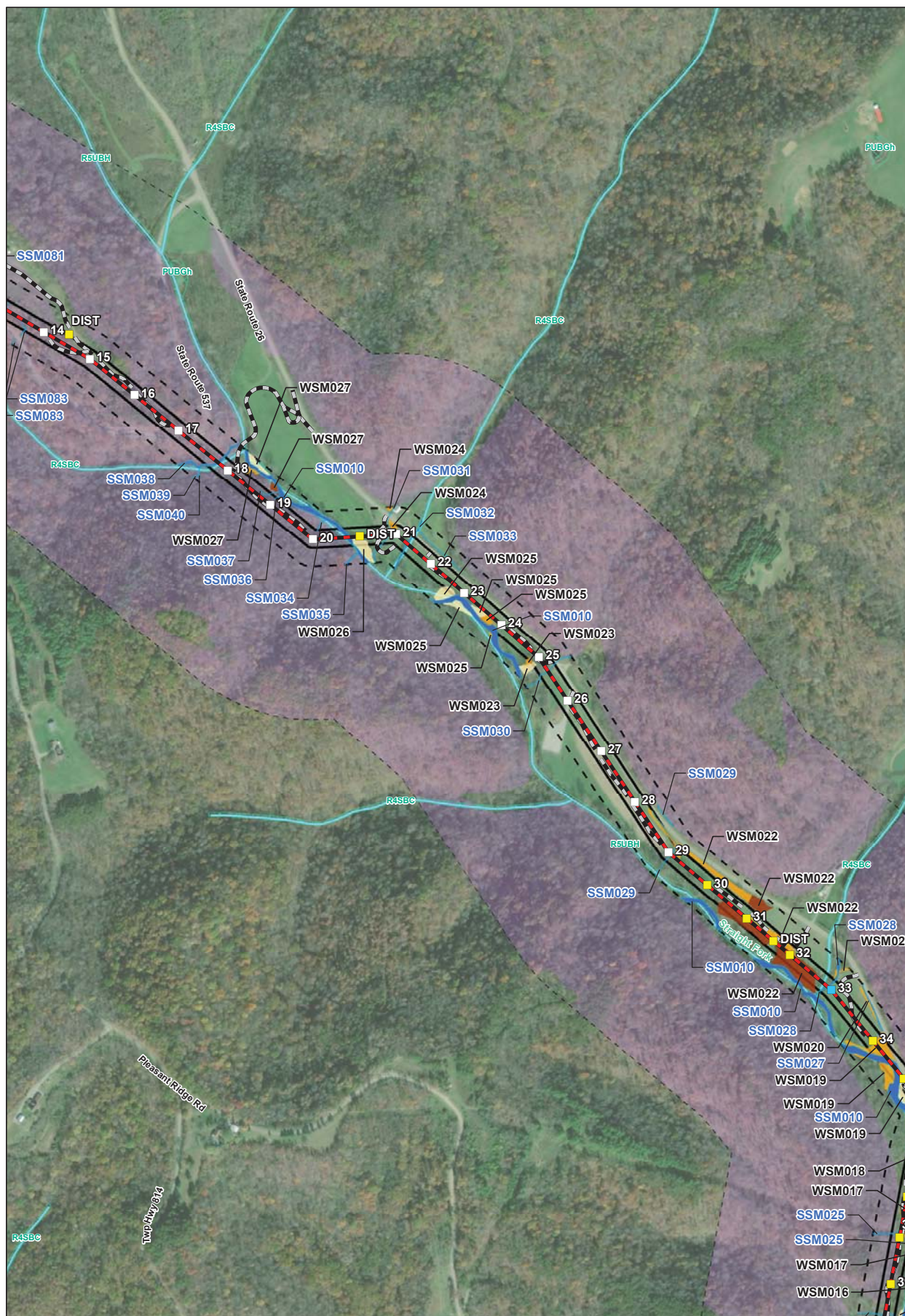
Lamping to Rouse 138 kV
Transmission Line Project



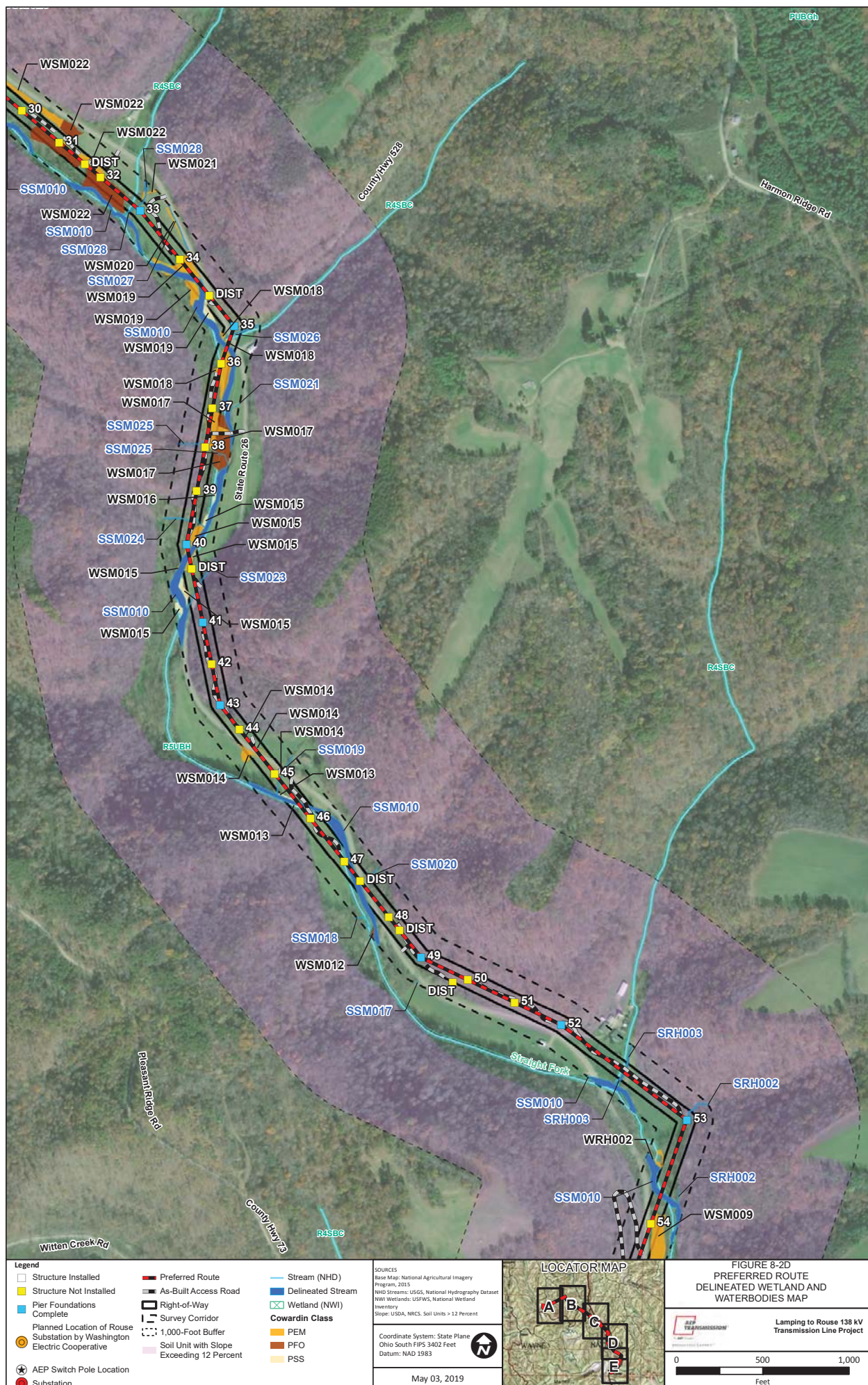


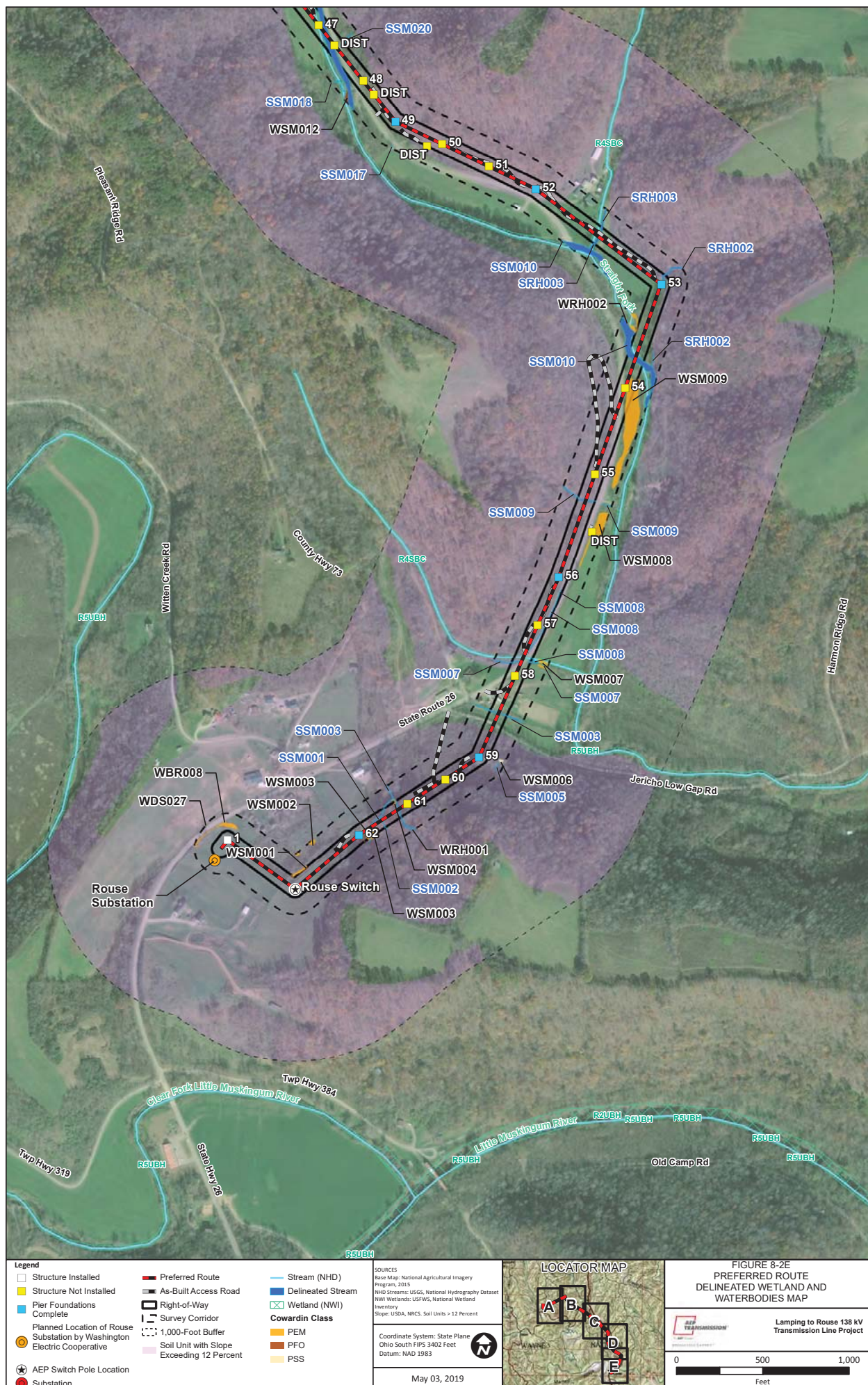


<p>Legend</p> <ul style="list-style-type: none"> Structure Installed Structure Not Installed Pier Foundations Complete Planned Location of Rouse Substation by Washington Electric Cooperative AEP Switch Pole Location Substation 	<ul style="list-style-type: none"> Preferred Route As-Built Access Road Right-of-Way Survey Corridor 1,000-Foot Buffer Soil Unit with Slope Exceeding 12 Percent 	<ul style="list-style-type: none"> Stream (NHD) Delineated Stream Wetland (NWI) <p>Cowardin Class</p> <ul style="list-style-type: none"> PEM PFO PSS 	<p>SOURCES</p> <p>Base Map: National Agricultural Imagery Program, 2015</p> <p>NHD Streams: USGS, National Hydrography Dataset</p> <p>Wet Wetlands: USFWS, National Wetland Inventory</p> <p>Slope: USDA, NRCS, Soil Units > 12 Percent</p> <p>Coordinate System: State Plane Ohio South FIPS 3402 Feet</p> <p>Datum: NAD 1983</p> <p>May 03, 2019</p>	<p>FIGURE 8-2B</p> <p>PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP</p> <p>Lamping to Rouse 138 kV Transmission Line Project</p> <p>0 500 1,000 Feet</p>
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<p>Legend</p> <ul style="list-style-type: none"> Structure Installed Structure Not Installed Pier Foundations Complete Planned Location of Rouse Substation by Washington Electric Cooperative AEP Switch Pole Location Substation 	<ul style="list-style-type: none"> Preferred Route As-Built Access Road Right-of-Way Survey Corridor 1,000-Foot Buffer Soil Unit with Slope Exceeding 12 Percent <p>Cowardin Class</p> <ul style="list-style-type: none"> PEM PFO PSS 	<p>SOURCES</p> <p>Base Map: National Agricultural Imagery Program, 2015</p> <p>NHD Streams: USGS, National Hydrography Dataset</p> <p>Wet Wetlands: USFWS, National Wetland Inventory</p> <p>Slope: USDA, NRCS, Soil Units > 12 Percent</p> <p>Coordinate System: State Plane Ohio South FIPS 3402 Feet</p> <p>Datum: NAD 1983</p> <p>May 03, 2019</p>	<p>LOCATOR MAP</p>	<p>FIGURE 8-2C PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP</p> <p>AIT TRANSMISSION</p> <p>Lamping to Rouse 138 kV Transmission Line Project</p> <p>0 500 1,000 Feet</p>
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Case No(s). 19-0972-EL-BTA

Summary: Application - Amended Application for Lamping to Rouse 138 kV Transmission Line Project electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Company, Inc.