



BOUNDLESS ENERGY™

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May 16, 2019

Chairman Sam Randazzo
Ohio Power Siting Board
180 East Broad Street
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Docketing Division
180 East Broad Street
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**Re: Case No. 19-1069-EL-BTA
In the Matter of the Application of AEP Ohio Transmission
Company, Inc. for an Amendment to the Certificate of
Environmental Compatibility and Public Need for the
Macksburg-Devola 138 kV Transmission Line Project**

Dear Chairman Randazzo,

Attached please find a copy of the Application of AEP Ohio Transmission Company, Inc. for an Amendment to the 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:
Macksburg-Devola 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

Counsel for AEP Ohio Transmission Company, Inc.

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

Application for Amendment

Macksburg-Devola 138 kV Transmission Line Project

OPSB Case No. 19-1069-EL-BTA

Prepared for



An **AEP** Company

BOUNDLESS ENERGYSM

Submitted to
Ohio Power Siting Board

May 16, 2019

BEFORE THE OHIO POWER SITING BOARD

Application for Amendment to the Macksburg-Devola 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
cm	centimeter
EMF	electric and magnetic field
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
I-77	Interstate 77
kV	kilovolt
NA	not applicable
NC	Not crossed
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency
OHI	Ohio Historic Inventory
OHPO	Ohio Historic Preservation Office
OPSB	Ohio Power Siting Board
ORAM	Ohio Rapid Assessment Method
PEM	palustrine emergent
PFO	palustrine forested
PHWH	Primary Headwater Habitat
Project	Macksburg to Devola 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
UNT	Unnamed tributary
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WEC	Washington Electric Cooperative, Inc.

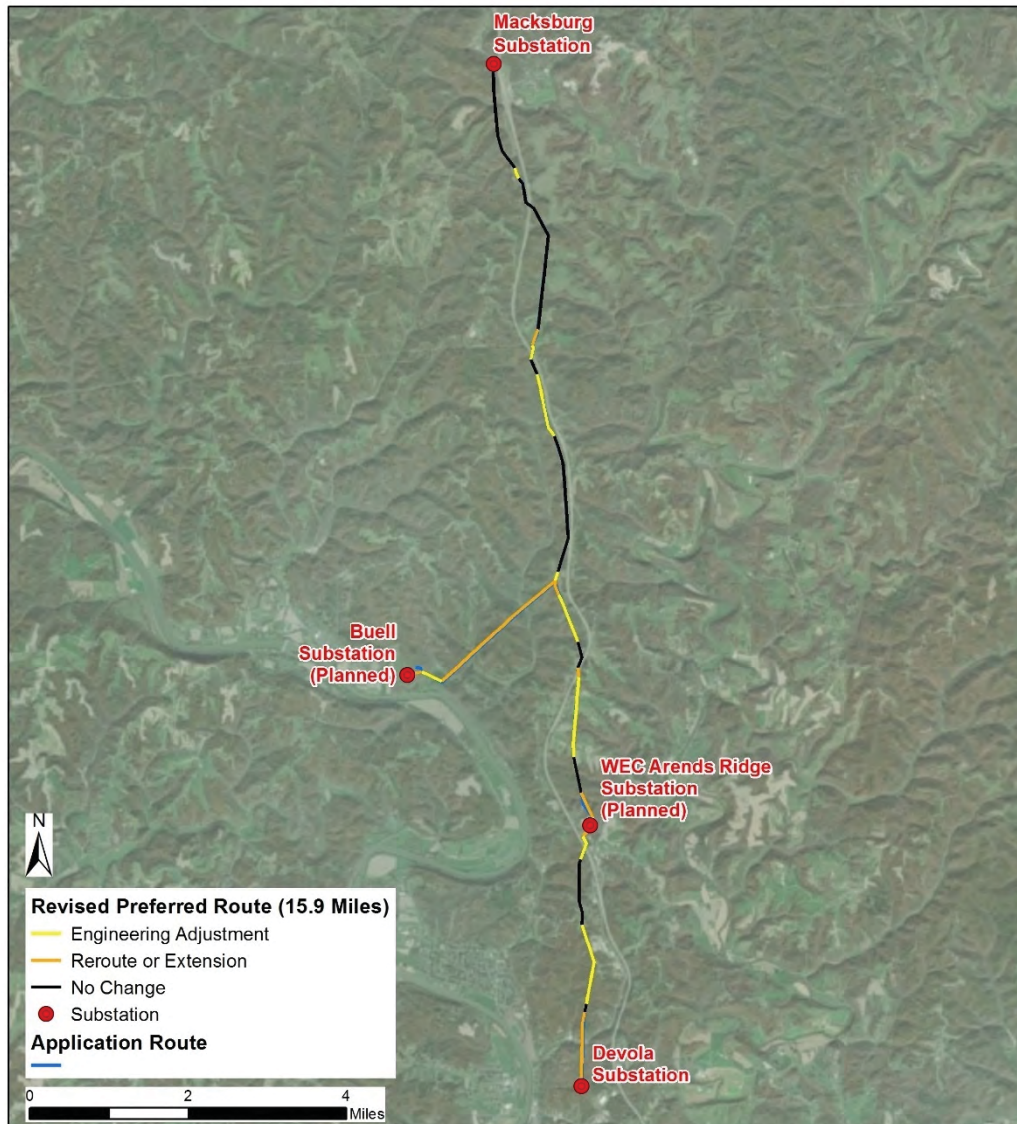
AMENDMENT CHANGE SUMMARY

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco) submitted a Certificate Application to the Ohio Power Siting Board (OPSB) on March 3, 2017 for the Macksburg to Devola 138 kV Transmission Line Project (Project). On January 18, 2018, 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 October 10, 2018, and foundations for pole structures 9, 11 and 12 have been installed to date. AEP Ohio Transco suspended Project construction activities on March 29, 2019, and will resume construction activities once this application for amendment has been reviewed and approved by the OPSB.

As detailed engineering of the transmission line progressed after submittal of the certificate application in March 2017, 19 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 or extensions (deviations outside the 100-foot ROW of the OPSB-approved alignment). No new property owners are affected by the alignment changes.

To assist in understanding the locations of the alignment changes, the Preferred Route has been split into three sections based on the description of the Preferred Route provided in the March 2017 application; Macksburg to Arends Ridge (formerly referred to as Highland Ridge in the March 2017 application), Arends Ridge to Devola, and Buell Extension. Prefixes to the structure numbers discussed herein indicate the section of the Preferred Route in which the structure is located. Structure numbers without letters are for the Macksburg to Arends Ridge section. Structure numbers with "AD" or "B" designate the Arends Ridge to Devola section and Buell Extension, respectively.

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

Ten engineering adjustments were made along the OPSB-approved Preferred Route. These engineering adjustments were made because of 1) a need to increase clearance from existing parallel utility lines; 2) property owners' requests to minimize land use impacts; 3) moving a proposed transmission line structure outside of a lawn area and the removal of previously proposed transmission line structures; and 4) the finalized location of the proposed Arends Ridge Substation (formerly referred to as Highland Ridge Substation in the March 2017 application). These engineering adjustments are described in greater detail below.

Engineering Adjustments 1 through 7 are located at various locations along all three sections of the 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 existing parallel overhead distribution line and as a result, extended outages of the distribution line would be required during construction. Shifting the alignment 10-30 feet to the west or east would provide enough clearance to the existing distribution line that extended distribution outages would not be needed. These engineering adjustments along the Preferred Route are shown below in the series of Exhibits 2 through 8.

Exhibit 2. Map Illustration of Engineering Adjustment (Structures 9 through 11)



Exhibit 3. Map Illustration of Engineering Adjustment (Structures 27 through 29)



Exhibit 4. Map Illustration of Engineering Adjustment (Structures 31 through 38)



Exhibit 5. Map Illustration of Engineering Adjustment (Structures 53 through 55)



Exhibit 6. Map Illustration of Engineering Adjustment (Structures 3-AD through 6-AD)

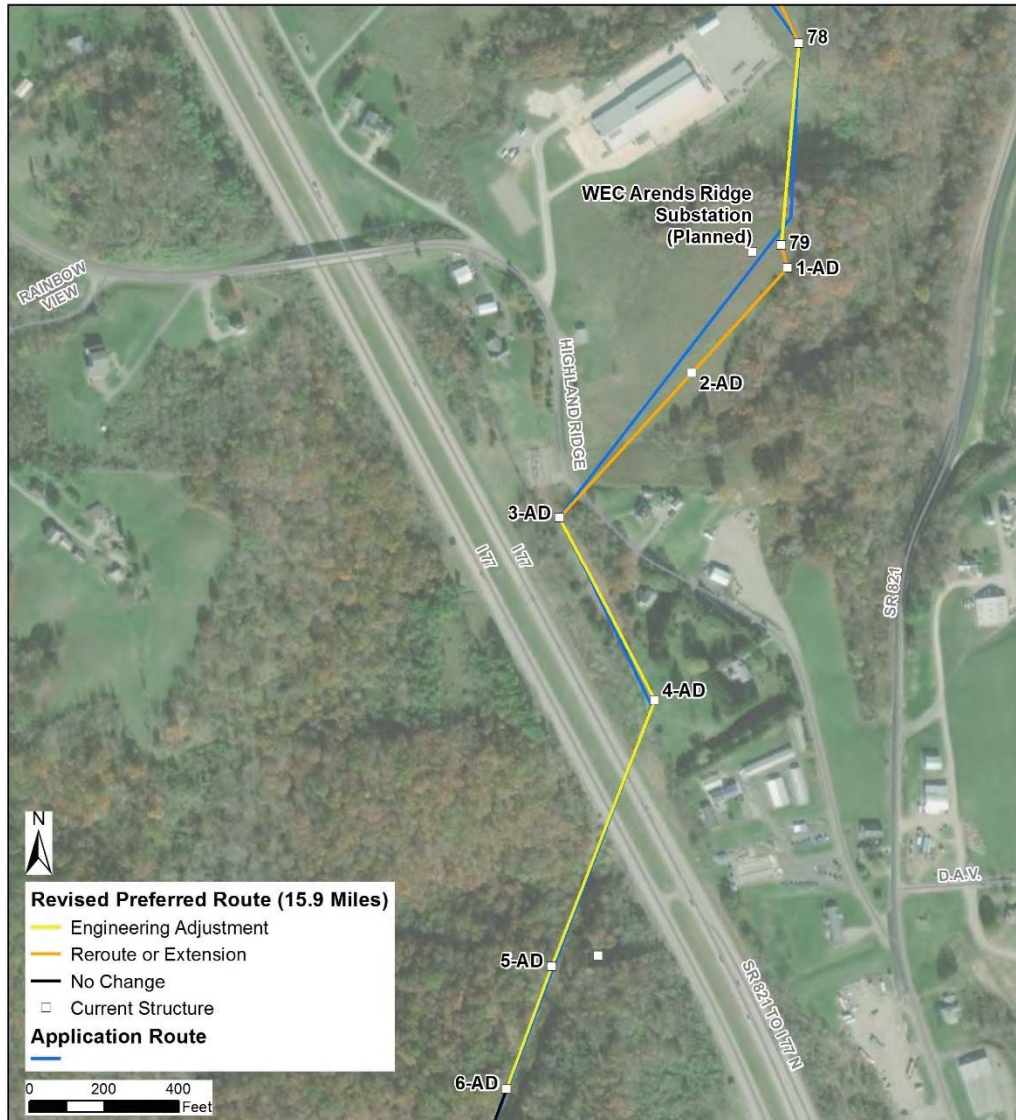


Exhibit 7. Map Illustration of Engineering Adjustment (Structures 16-AD through 24-AD)

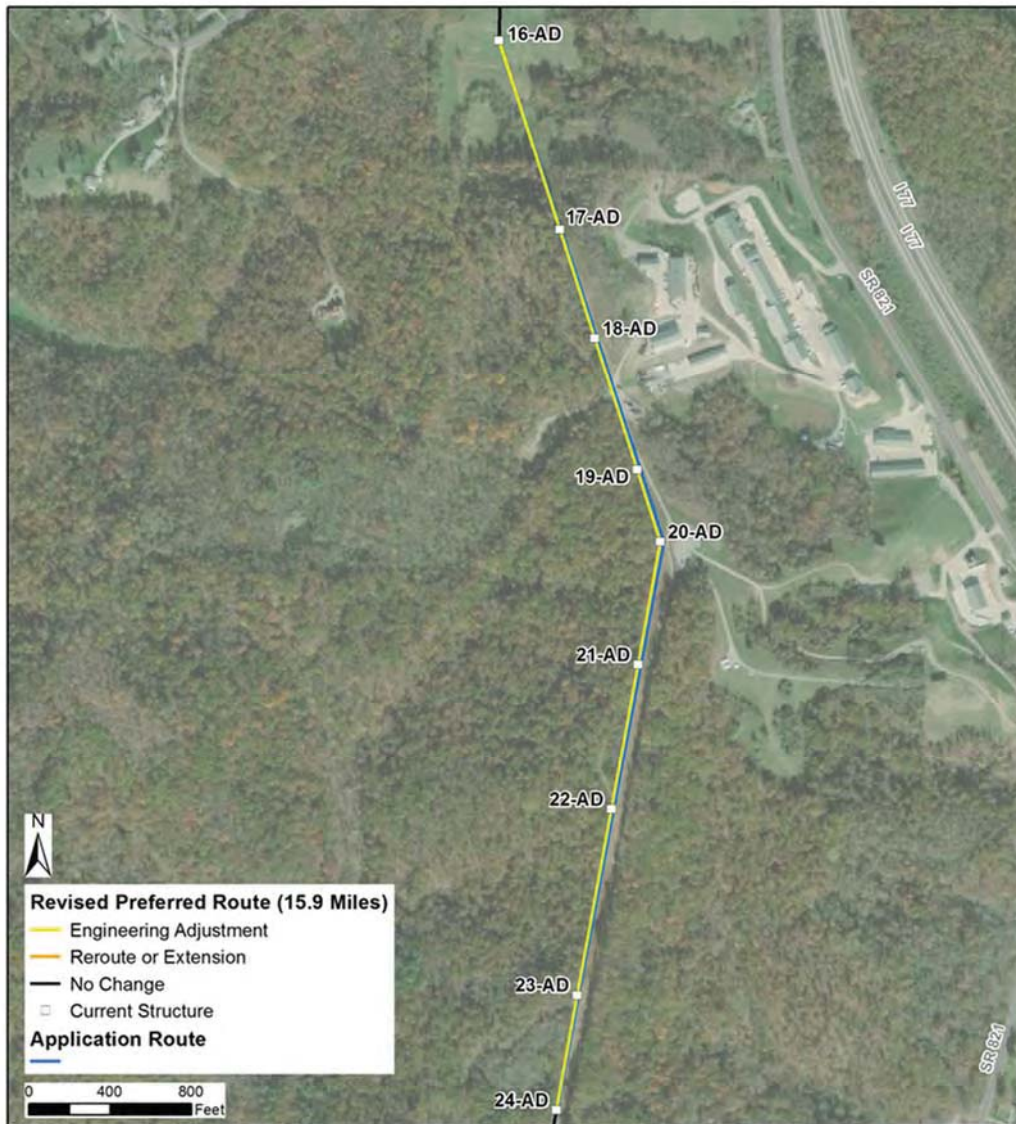


Exhibit 8. Map Illustration of Engineering Adjustment (Structures 18-B through 19-B)



Engineering Adjustment 8 is located along the Macksburg to Arends Ridge section from Structure 57 to Structure 61 (Exhibit 9). This adjustment resulted from a property owner request which shifts the alignment west to provide more space between the alignment and the property owner's house.

Exhibit 9. Map Illustration of Engineering Adjustment (Structures 57 through 61)



Engineering Adjustment 9 is located along the Macksburg to Arends Ridge section from Structure 65 to Structure 72 (Exhibit 10). This adjustment is due to moving Structure 71 outside of a lawn area in addition to eliminating two transmission structures from the original design that were to be located on either side of Structure 71. As a result of these changes, Structures 66, 67, 68, and 69 were shifted 10-25 feet east in order to keep all tangent structures, which will require smaller diameter structures compared to angle structures.

Exhibit 10. Map Illustration of Engineering Adjustment (Structures 65 through 72)



Engineering Adjustment 10 is located along the Macksburg to Arends Ridge section from Structure 78 to Structure 79 (Exhibit 11). This adjustment was made to connect the Preferred Route to the finalized location for the Arends Ridge Substation.

Exhibit 11. Map Illustration of Engineering Adjustment (Structures 78 through 79)

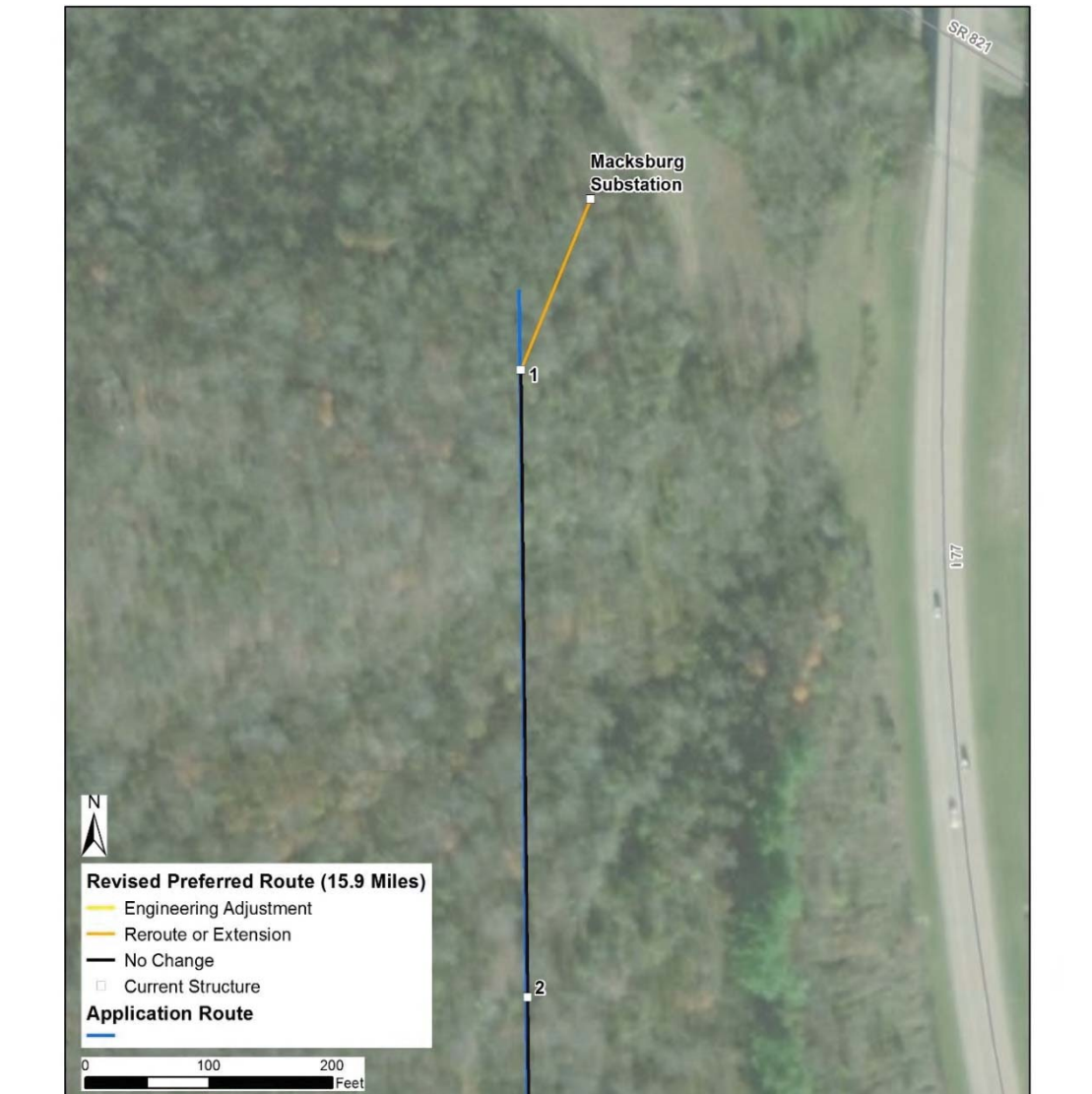


Alignment Reroutes and Extensions

Nine alignment reroutes and extensions were made along the OPSB-approved Preferred Route. These reroutes were initiated because of 1) clearance from existing utility lines; 2) property owners' requests; 3) removal of previously proposed transmission line structures; and 4) the finalized location of proposed substations. These reroutes and extensions are described in greater detail below.

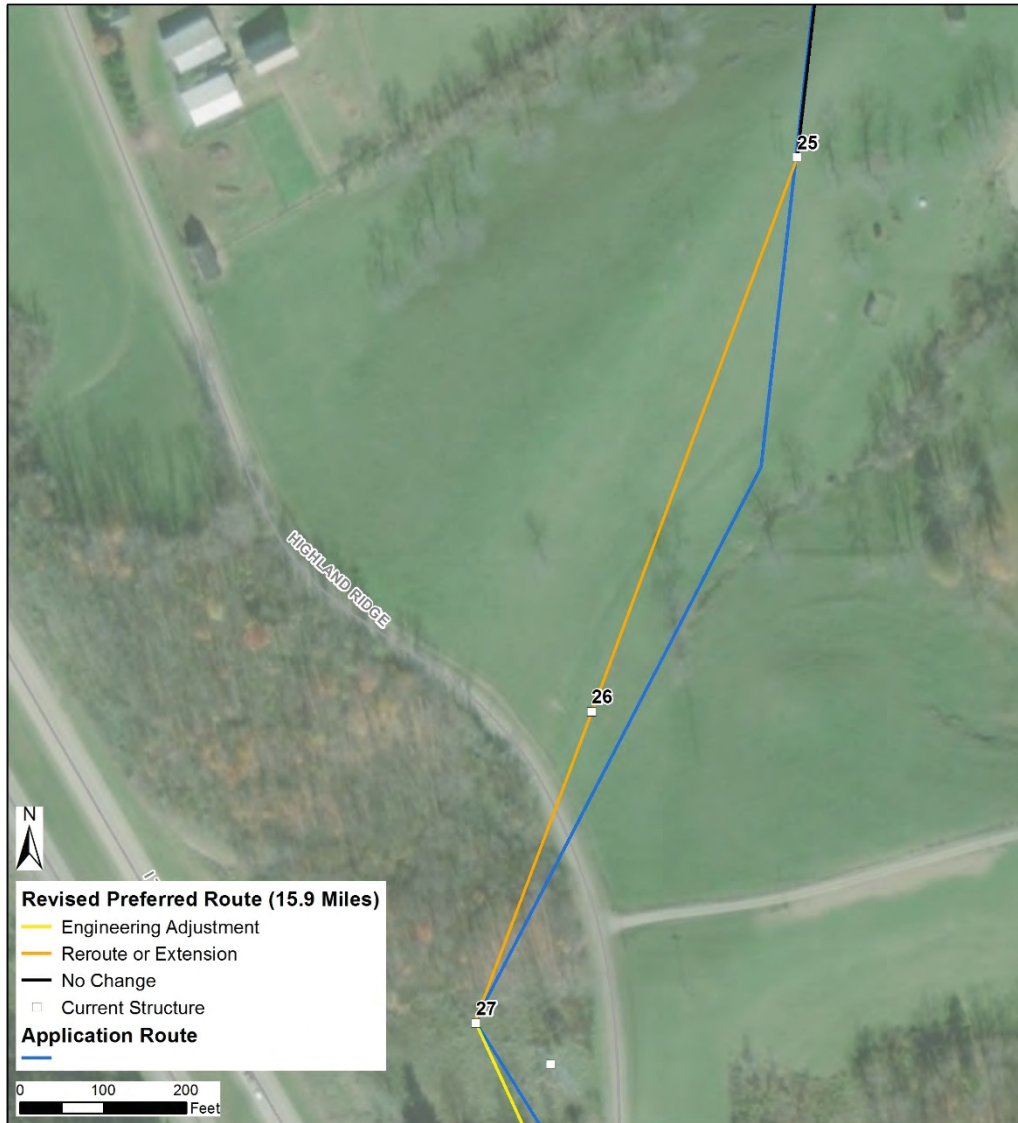
Reroute 1 is located at the northern endpoint of the Macksburg to Arends Ridge section. This reroute, as shown in Exhibit 12 below, extends the proposed route to the northeast for approximately 145 feet. This reroute is needed to connect the Preferred Route to the finalized location of the Macksburg Substation and would result in an additional 0.2 acre of tree clearing.

Exhibit 12. Map Illustration of Reroute 1 (Structures Macksburg Substation and Structure 1)



Reroute 2 is located in the northern portion of the Macksburg to Arends Ridge section. This reroute, as shown in Exhibit 13 below, is due to eliminating an extra transmission line structure on the landowner's property thereby requiring Structure 26 to shift west approximately 50 feet. The application route paralleled an existing distribution line for a portion of this segment. This reroute would result in less than 0.1 acre of additional tree clearing.

Exhibit 13. Map Illustration of Reroute 2 (Structures 25 through 27)



Reroute 3 is located along the Macksburg to Arends Ridge section where the Buell Extension splits off. This reroute, as shown in Exhibit 14 below, is due to Preferred Route alignment located too close to the existing overhead distribution line which would require extended outages of the distribution line during construction. Shifting the alignment 58 feet to the west would provide enough clearance to the existing distribution line that extended distribution outages would not be needed. Shifting the alignment west also increases the distance between the proposed transmission line and residences in the area. This reroute would result in an additional 0.3 acre of tree clearing.

Exhibit 14. Map Illustration of Reroute 3 (Structures 55 through 57)



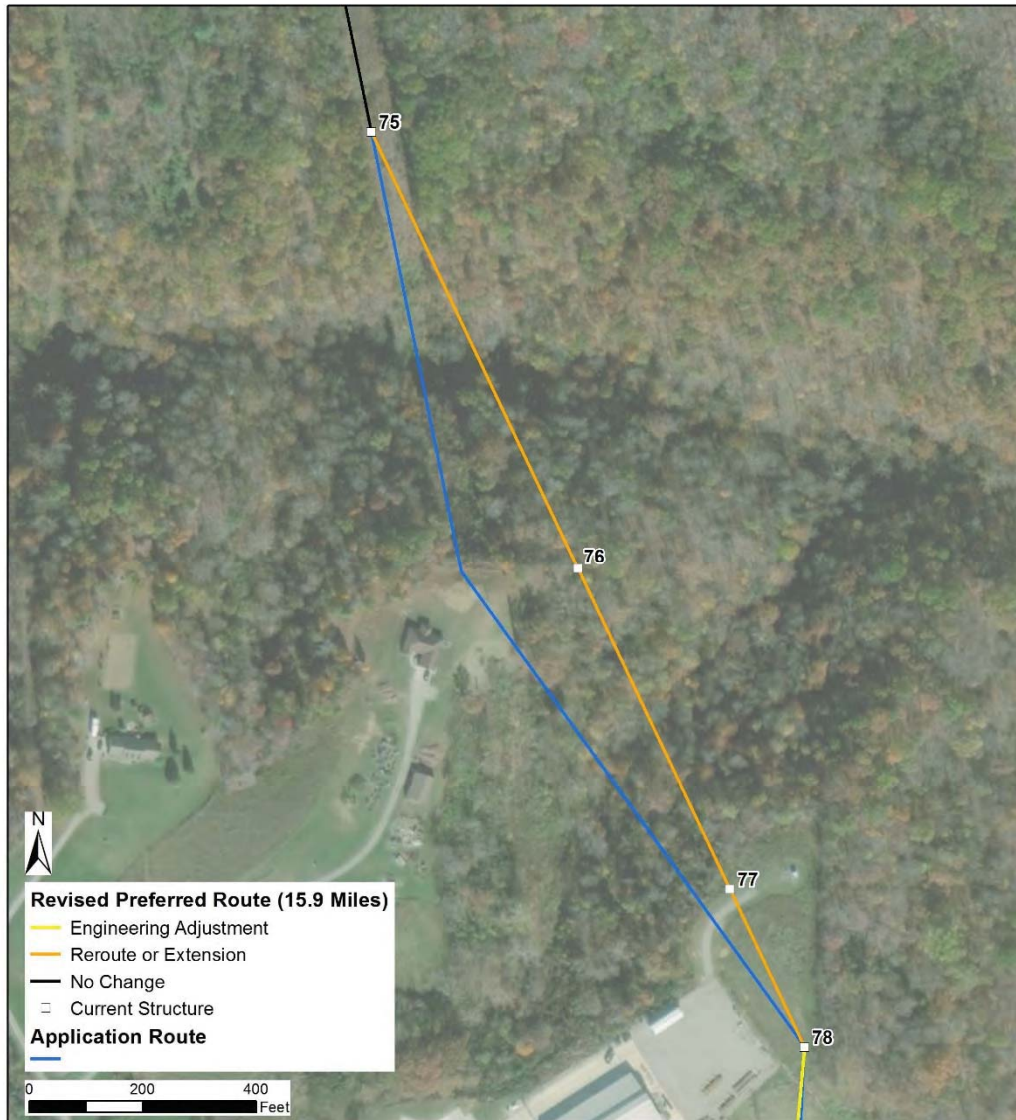
Reroute 4 is located along the Macksburg to Arends Ridge section. This reroute, as shown in Exhibit 15 below, is due to a new barn and fence proposed by the property owner which resulted in shifting the location of the Structure 64 and moving the alignment approximately 62 feet. No additional tree clearing will be required for Reroute 4.

Exhibit 15. Map Illustration of Reroute 4 (Structures 64 through 65)



Reroute 5 is located at the southern end of the Macksburg to Arends Ridge section. This reroute, as shown in Exhibit 16 below, is due to the property owner's request which resulted in shifting the location of Structure 76 and the alignment approximately 200 feet east. This reroute would result in an additional 1.0 acre of tree clearing.

Exhibit 16. Map Illustration of Reroute 5 (Structures 75 through 78)



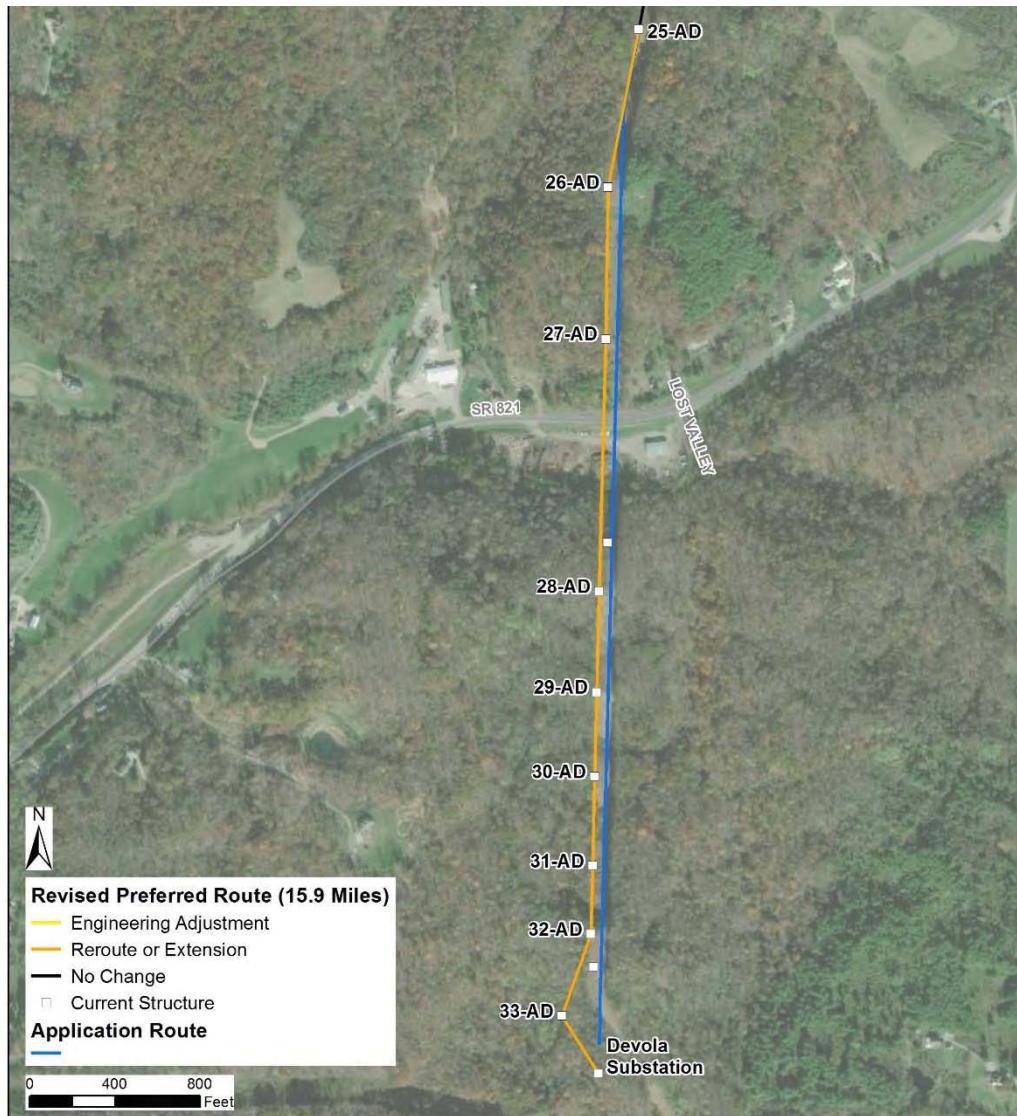
Reroute 6 is located at the northern end of the Arends Ridge to Devola section. This reroute, as shown in Exhibit 17 below, shifts the proposed route approximately 78 feet to the east based on the final location of the planned Arends Ridge Substation. This reroute results in an additional 0.2 acre of tree clearing.

Exhibit 17. Map Illustration of Reroute 6 (Structures 79 through 3-AD)



Reroute 7 is located along the Arends Ridge to Devola section. This reroute, as shown in Exhibit 18 below, is due to the Preferred Route alignment located too close to the existing overhead distribution which would require extended outages of the distribution line during construction. Shifting the alignment approximately 52 feet to the west would provide enough clearance to the existing distribution line that extended distribution outages would not be needed. This reroute would result in approximately 1.5 acres of tree clearing.

Exhibit 18. Map Illustration of Reroute 7 (Structures 25-AD through Arends Ridge - Devola Substation)

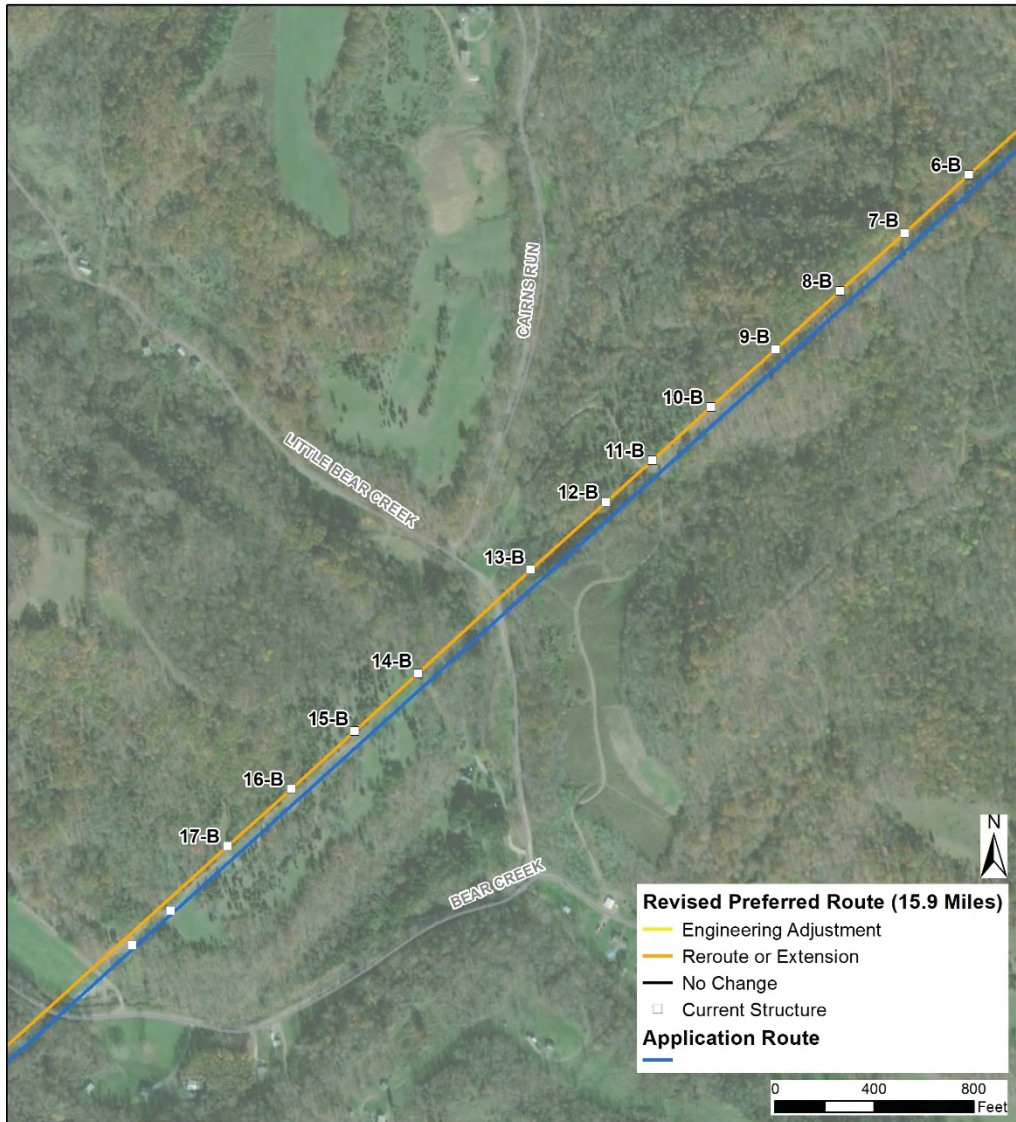


Reroute 8 is located along the Buell Extension. This reroute, as shown in Exhibits 19 and 20 below, is due to the need for adequate clearance between the Preferred Route alignment and the existing overhead distribution line, which would otherwise require extended outages of the distribution line during construction. The OPSB's staff also recommended a shift due to the number of riparian trees that would need to be cleared near Structure 4-B. Shifting the alignment approximately 60 feet to the west provides sufficient clearance from the existing distribution line, eliminates the need for a crossing of the existing distribution line, and reduces the impact to riparian trees. This reroute would result in an additional 1.9 acres of tree clearing.

Exhibit 19. Map Illustration of Reroute 8 (Structures 55 through 9-B)



Exhibit 20. Map Illustration of Reroute 8 (Structures 6-B through 18-B)



Reroute 9 is located at the southern endpoint of the Buell Extension. This reroute, as shown in Exhibit 21 below, extends the proposed route to the southwest for approximately 855 feet. This reroute is needed to connect the Preferred Route to the final location of the planned Buell Substation. This reroute would result in less than 0.2 acre of tree clearing.

Exhibit 21. Map Illustration of Reroute 9 (Structures 19-B through 22-B)



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

Text provided in the March 3, 2017 Application filing remains unchanged.

(1) General Purpose of the Facility

Text provided in the March 3, 2017 Application filing remains unchanged.

(2) General Location, Size, and Operating Characteristics

The proposed Project is located in central Washington County, between Macksburg, Ohio and Marietta, Ohio.

The proposed Project begins approximately 0.5 mile northwest of Macksburg, Ohio at the ~~proposed~~ site of the Macksburg Substation, located approximately ~~385~~ 320 feet southwest of the intersection of Interstate 77 (I-77) and County Road 821, and extends generally south. The proposed Project terminates approximately ~~2.4~~ 2.5 miles southeast of Devola, Ohio at the ~~proposed~~ site of the Devola Substation, located approximately ~~0.57~~ 0.5 mile north of the intersection of Colegate Drive and Mill Creek Road. Between the ~~proposed~~ Macksburg Substation and ~~proposed~~ Devola Substation, the Project connects to the ~~proposed~~ planned Buell Substation (located approximately 1.1 miles east of Lowell, Ohio and approximately ~~655 feet~~ 0.4 mile northeast of the intersection of Highway 60 and County Road 48) and the planned Highland Arends Ridge Substation (formerly referred to as Highland Ridge in the March 2017 application) (located approximately 2.2 miles northeast of Devola, Ohio and approximately 900 feet south of the intersection of I-77 and County Road 8). The proposed Project is approximately ~~15.7~~ 15.9 to 16.5 miles in length, depending on the route selected, and will be constructed using primarily steel monopoles, requiring 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 March 3, 2017 Application filing remains unchanged.

(i) Preferred Route

The entirety of the Preferred Route from the ~~proposed~~ Macksburg Substation to the ~~proposed~~ Devola Substation is approximately ~~15.7~~ 15.9 miles in length.

The ~~15.7~~ 15.9-mile route begins at the ~~proposed~~ Macksburg Substation and runs immediately south for approximately ~~2.96~~ 2.0 miles, paralleling I-77 on the west side. The route crosses over I-77, then continues south for approximately 2.0 miles before crossing back over I-77. The route continues to parallel I-77 on the west side for approximately ~~2.98~~ 2.9 miles before splitting just northwest of the intersection of County Roads 8 and 316. The western branch of the route (known as the Buell Extension) runs southwest for approximately 1.9 miles before turning northwest and running to the ~~proposed~~ planned Buell Substation, just north of Highway 60. The eastern branch

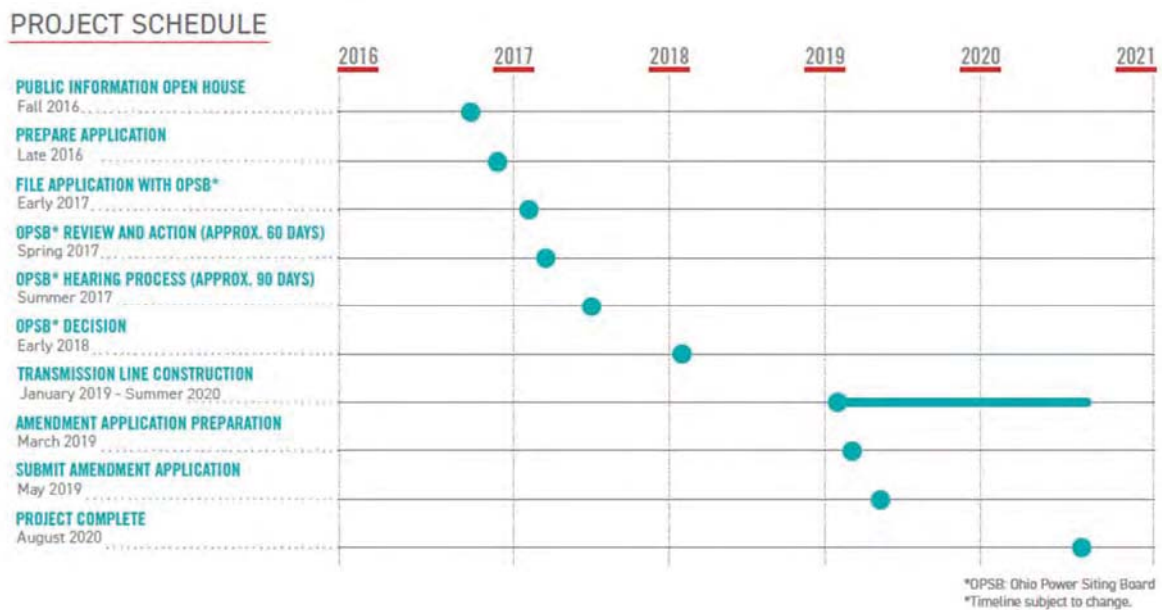
continues south for approximately 1.2 miles, crosses over I-77, then continues south for approximately ~~2.13~~ 2.1 miles until it connects to the planned Highland Arends Ridge Substation. The route then crosses back over I-77 before continuing south for approximately 3.1 miles, then terminating at the planned proposed Devola Substation.

(ii) Alternate Route

Text provided in the March 3, 2017 Application filing remains unchanged.

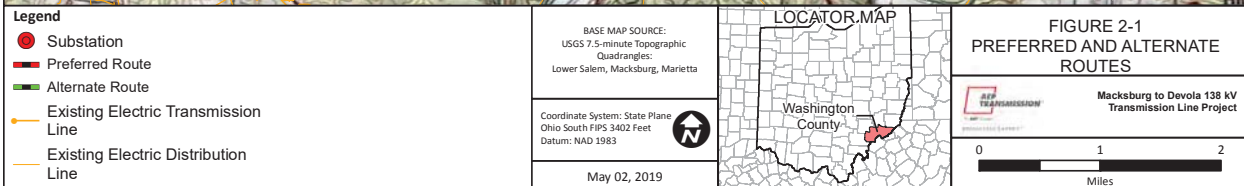
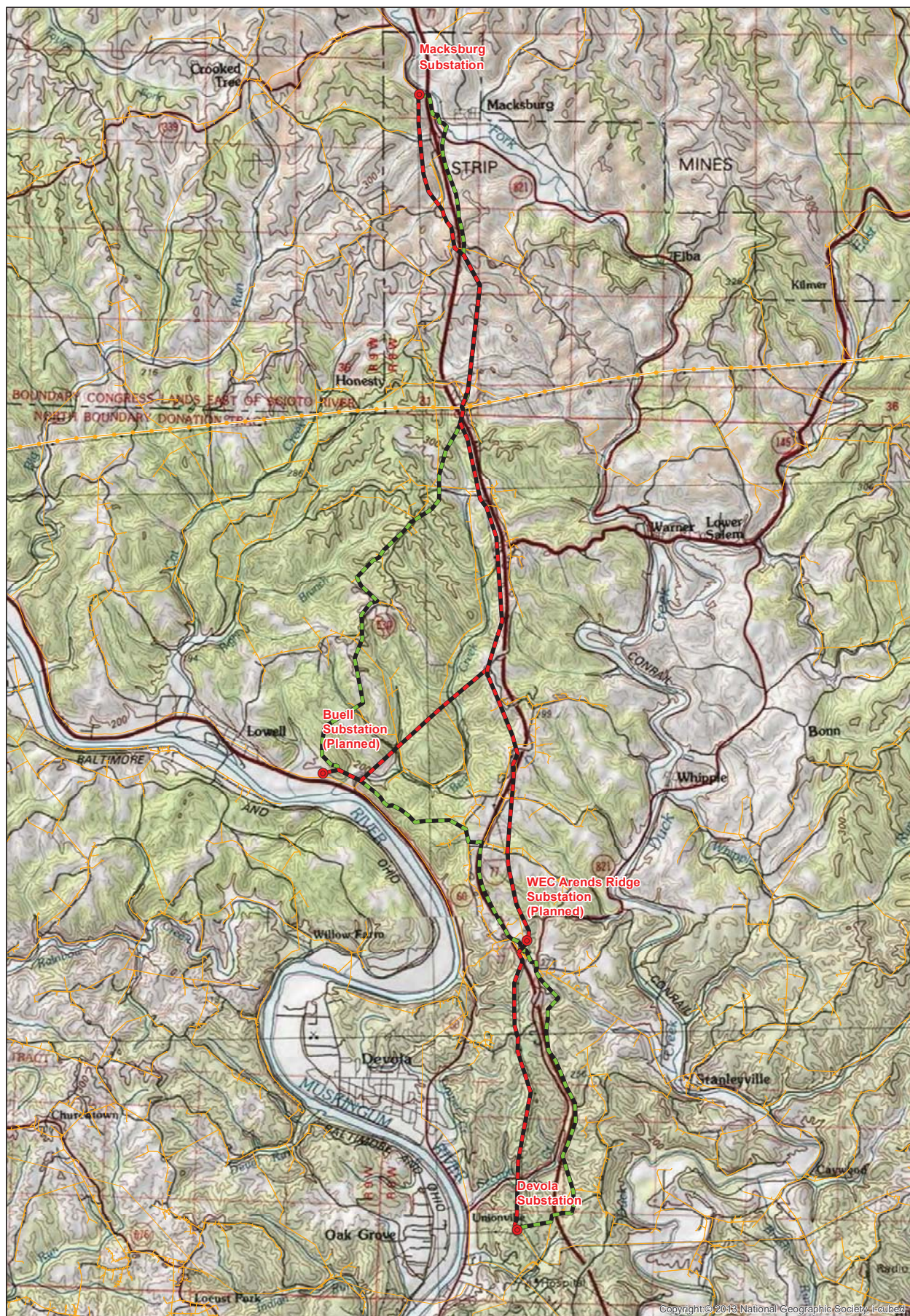
(4) Schedule

The current Project schedule is illustrated in the diagram below. ~~Note that the estimated end date indicated for construction is based on the latest finish if acquisition of property easements is delayed or longer than expected.~~



(B) APPLICANT DESCRIPTION

Text provided in the March 3, 2017 Application filing remains unchanged.



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

Text provided in the March 3, 2017 Application filing remains unchanged.

(B) REGIONAL EXPANSION PLANS

Text provided in the March 3, 2017 Application filing remains unchanged.

(A) SYSTEM ECONOMY AND RELIABILITY

Text provided in the March 3, 2017 Application filing remains unchanged.

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

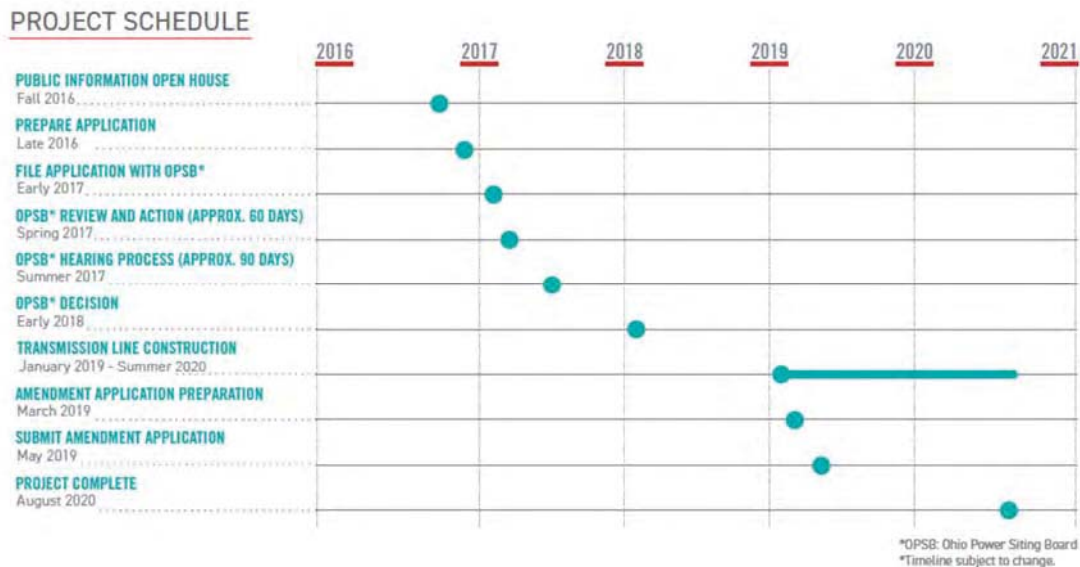
Text provided in the March 3, 2017 Application filing remains unchanged.

(C) FACILITY SELECTION RATIONALE

Text provided in the March 3, 2017 Application filing remains unchanged.

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

A schedule of the proposed Project is presented below. ~~which is based on an early finish for construction of the Project.~~

**(2) Impact of Critical Delays**

Text provided in the March 3, 2017 Application filing remains unchanged.

4906-5-04 ROUTE ALTERNATIVES ANALYSIS

Text provided in the March 3, 2017 Application filing remains unchanged.

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

Text provided in the March 3, 2017 Application filing remains unchanged.

(1) Project Area Map

Text provided in the March 3, 2017 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)	190.6 <u>192.3</u>	200.1
Length (in miles)	15.7 <u>15.9</u>	16.5
Number of properties crossed (by ROW)	123 <u>155</u>	145

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

Text provided in the March 3, 2017 Application filing remains unchanged.

(a) Surveying and Soil Testing

Text provided in the March 3, 2017 Application filing remains unchanged.

(b) Grading and Excavation

Text provided in the March 3, 2017 Application filing remains unchanged.

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

Access road easements with landowners have been obtained. Planned access road locations are illustrated in revised Figure 8-2A through 8-2M. 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 8-2M.~~

~~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 March 3, 2017 Application filing remains unchanged.

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

Text provided in the March 3, 2017 Application filing remains unchanged.

(f) Post-Construction Reclamation

Text provided in the March 3, 2017 Application filing remains unchanged.

(2) Facility Layout

Text provided in the March 3, 2017 Application filing remains unchanged.

(a) Transmission Line Route Map

Revised Figure 8-2A through 8-2M and Figure 8-3A through 8-3N 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) (for example, 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 Route as illustrated in Figures 8-2A through 8-2M. 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 8-2M has been updated to include proposed transmission line structure locations. Planned 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 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 March 3, 2017 Application filing remains unchanged.

(c) Plans for Future Modifications

Text provided in the March 3, 2017 Application filing remains unchanged.

(C) DESCRIPTION OF PROPOSED TRANSMISSION LINES OR PIPELINES

Text provided in the March 3, 2017 Application filing remains unchanged.

4906-5-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

Text provided in the March 3, 2017 Application filing remains unchanged.

4906-5-07 HEALTH AND SAFETY, LAND USE, AND REGIONAL DEVELOPMENT**(A) HEALTH AND SAFETY****(1) Compliance with Safety Regulations**

Text provided in the March 3, 2017 Application filing remains unchanged.

(2) Electric and Magnetic Fields

Text provided in the March 3, 2017 Application filing remains unchanged.

(a) Calculated Electric and Magnetic Field Strength Levels

Text provided in the March 3, 2017 Application filing remains unchanged

(b) Electric and Magnetic Field Strength Values

In accordance with OAC 4905-5-07 (2)(a), EMF strength values are provided for the most utilized pole configuration for the Project. Additional pole and conductor configurations were not modeled because the ~~seven~~ three residences located within 100 feet of the Alternate Route centerline and ~~one~~ eight residences (see note below) located within the Preferred Route centerline do not constitute more than 10 percent of the total line length or more than 1 mile of the total line length being certificated.

(Note: The March 3, 2017 Application filing should have listed seven residences located within 100 feet of the Preferred Route centerline and three residence located within 100 feet of the Alternate Route centerline. The additional residence is located northwest of the Buell Extension near Bear Creek Road.)

(c) Current State of EMF Knowledge

Text provided in the March 3, 2017 Application filing remains unchanged.

(d) Line Design Considerations

Text provided in the March 3, 2017 Application filing remains unchanged.

(e) EMF Public Inquiries Policy

Text provided in the March 3, 2017 Application filing remains unchanged.

(3) Estimate of Radio, Television, and Communications Interference

Text provided in the March 3, 2017 Application filing remains unchanged.

(4) Noise from Construction, Operations, and Maintenance

Text provided in the March 3, 2017 Application filing remains unchanged.

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

Text provided in the March 3, 2017 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 pockets of residential, commercial, and industrial structures. Residential, commercial, and industrial structures are mainly confined to the I-77 corridor in the southern part of the project area. Residential structures are also located along the eastern bank of the Muskingum River associated with the village of Lowell, census designated place of Devola and the city of Marietta, as well as located within the village of Macksburg.

Comparisons of the various land use types and land use features for both routes are included in Tables 7-4 through 7-6 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 7-4
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	1,610 <u>1,797</u>	2	7,455	9
Industrial/Commercial	316 <u>0</u>	0	207	0
Open Land/Pasture	7,903 <u>8,275</u>	9 <u>10</u>	8,076	9
Residential	1,586 <u>1,753</u>	2	1,611	2
Institutional	0	0	0	0
Recreational ¹	0 <u>6</u>	0	0	0
Road Right-of-Way	2,141 <u>2,184</u>	3	2,048	2
Utility Right-of-Way ²	43,615 <u>27,776</u>	53 <u>33</u>	17,925	21
Woodlot	25,607 <u>40,563</u>	31 <u>48</u>	49,727	57
Water ³	146 <u>87</u>	0	292	0
Delineated Streams ³	624	<u>1</u>	<u>NA</u>	<u>NA</u>
Delineated Wetlands ³	726	<u>1</u>	<u>NA</u>	<u>NA</u>
Delineated Ponds ³	<u>0</u>	<u>0</u>	<u>NA</u>	<u>NA</u>
Total	82,924 <u>83,791</u>	100	87,341	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 March 3, 2017. The Buckeye Trail crosses both the Preferred and Alternate routes at the northern 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 Buckeye Trail consists of the State Route 821 and Highway 301 roadway south of Macksburg. Existing distribution lines already cross 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 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 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, wetlands, and ponds (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, 8-3, and 8-4). This information was not included in the table 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.

TABLE 7-5

Acreage and Percent of Land Uses Crossed by Route Alternatives

Land Use	Preferred Route*		Alternate Route*	
	Acreage	Percent	Acreage	Percent
Agriculture / Agricultural District Land	2.7 3.4	1 2	14.6	7
Industrial/Commercial	0.4 <0.1	0	0.8	0
Open Land/Pasture	21.5 20.1	11 10	20.3	10
Residential	3.7 3.4	2	3.8	2
Institutional	0	0	0	0
Recreational ¹	0 <0.1	0	0	0
Road Right-of-Way	5.4	3	7.9	4
Utility Right-of-Way ²	73.6 66.8	39 34	26.5	13
Woodlot	82.9 90.1	44 47	125.3	63
Water ³	0.4 0.2	0	0.9	1
Delineated Streams ³	1.3	1	NA	NA
Delineated Wetlands ³	1.6	1	NA	NA
Delineated Ponds ³	<0.1	0	NA	NA
Total	190.6 192.3	100	200.1	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 March 3, 2017. The Buckeye Trail crosses both the Preferred and Alternate routes at the northern 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 the State Route 821 and Highway 301 roadway south of Macksburg. Existing distribution lines already cross 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 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 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, wetlands, and ponds (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, 8-3, and 8-4). This information was not included in the table 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.

TABLE 7-6

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

	Route Alternatives	
	Preferred	Alternate
Length (in miles)	15.7 <u>15.9</u>	16.5
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>5</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 <u>1</u>
Airports	0	0
Features within 1,000 feet of Route Alternatives (centerline)		
Historic Structures (OHI)	6	15
National Register of Historic Places ¹	0 <u>1</u>	0
Previously Identified Archaeological Sites ¹	3 <u>9</u>	3
Residences	90 <u>89</u>	154
Commercial Buildings	37 <u>43</u>	33
Industrial Buildings	0	2
Schools and Hospitals	0	0
Churches and Civic Buildings	1	1
State/Federal Forests and Recreational Land ²	0 <u>1</u>	0 <u>1</u>
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. Five cultural resource sites were identified during the survey, all 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 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.

TABLE 7-6

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

	Route Alternatives	
	Preferred	Alternate

² The Ohio Buckeye Trail was not included in the original OPSB application submitted March 3, 2017. Recreational land has been updated to include this trail. The Buckeye Trail crosses both the Preferred and Alternate routes at the northern 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 the State Route 821 and Highway 301 roadway south of Macksburg. Existing distribution lines already cross the Buckeye Trail in this location.

(a) Residential

Preferred Route: The Preferred Route is located within 1,000 feet of ~~90~~ 89 residences, none of which are within the planned potential disturbance area. As shown in Table 7-5, residential land makes up 2 percent of the Preferred Route ROW (100 feet wide).

Alternate Route: The Alternate Route is located within 1,000 feet of 154 residences, none of which are within the planned potential disturbance area. As shown in Table 7-5, residential land makes up 2 percent of the Alternate Route ROW (100 feet wide).

(b) Commercial

Preferred Route: The Preferred Route is located within 1,000 feet of ~~37~~ 43 commercial buildings, none of which are within the planned potential disturbance area. As shown in Table 7-5, industrial/commercial land makes up 0 percent of the Preferred Route ROW (100 feet wide).

Alternate Route: The Alternate Route is located within 1,000 feet of 33 commercial buildings, none of which are within the planned potential disturbance area. As shown in Table 7-5, industrial/commercial land makes up 0 percent of the Alternate Route ROW (100 feet wide).

(c) Industrial

Text provided in the March 3, 2017 Application filing remains unchanged.

(d) School and Hospitals

Text provided in the March 3, 2017 Application filing remains unchanged.

(e) Churches and Civic Buildings

Text provided in the March 3, 2017 Application filing remains unchanged.

(f) Recreational

No state or federal forests ~~or recreational lands~~ are located within the planned potential disturbance area or within 1,000 feet of the Preferred and Alternate Route. The Buckeye Trail crosses both the Preferred and Alternate routes at the northern 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 the State Route 821 and Highway 301 roadway south of Macksburg. Existing distribution lines already cross the Buckeye Trail in this location. As shown in Table 7-5, recreational lands make up 0 percent of the Preferred Route ROW (100 feet wide) and Alternate Route ROW (100 feet wide) due to the small area associated with the trail crossing.

(g) Agricultural

As shown in Table 7-4, approximately 2 percent (~~1,610~~ 1,797 feet) of the Preferred Route and 9 percent (7,455 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 ~~21~~ 23 residences within 200 feet of the Preferred Route ROW; these residences range from ~~25~~ 18 to ~~150~~ 199 feet from the ROW. There are 25 residences within 200 feet of the Alternate Route ROW; these residences range from 25 to 197 feet from the ROW. There are ~~five~~ seven commercial building within 200 feet of the Preferred Route ROW; these buildings range from ~~89~~ 137 to ~~177~~ 198 feet from the ROW. There are nine commercial buildings within 200 feet of the Alternate Route ROW; these buildings range from 5 to 111 feet from the ROW. There are ~~38~~ 39 and 53 other structures (garage, barn, or camper) within 200 feet of the Preferred Route and Alternate Route ROW, respectively. There are no 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 March 3, 2017 Application filing remains unchanged.

(c) Mitigation Procedures

Text provided in the March 3, 2017 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 within the Preferred and Alternate Route ROWs is estimated at ~~2.7~~ 3.4 acres and 14.6 acres, respectively. Other agricultural pastureland or other open land comprises ~~21.5~~ 20.1 acres of the Preferred Route and 20.3 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. AEP Ohio Transco will 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 March 3, 2017 Application filing remains unchanged.

(2) Impacts to Agricultural Lands and Agricultural Districts

The Washington County Auditor was contacted to obtain information on current Agricultural District lands records. The centerline of the Preferred Route crosses ~~one~~ two Agricultural District parcels. The parcels crossed ~~is~~ are located near the middle of the Project where the Preferred Route crosses to the east side of I-77. ~~Two~~ One additional Agricultural District parcels ~~are~~ is located within the Preferred Route ROW and eight additional Agricultural District parcels are located within 1,000 feet of the Preferred Route. The centerline of the Alternate Route does not cross any Agricultural District parcels. Four Agricultural District parcels are located within 1,000 feet of the Alternate Route. The data was received from the Washington County Auditor on ~~February 3, 2017~~ May 1, 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 March 3, 2017 Application filing remains unchanged.

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

Text provided in the March 3, 2017 Application filing remains unchanged.

(c) Mitigation Procedures

Text provided in the March 3, 2017 Application filing remains unchanged.

(D) LAND USE PLANS AND REGIONAL DEVELOPMENT

Text provided in the March 3, 2017 Application filing remains unchanged.

(1) Impacts to Regional Development

Text provided in the March 3, 2017 Application filing remains unchanged.

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

Text provided in the March 3, 2017 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. Field surveys for cultural resources were not conducted for the Alternate Route.

Five cultural resource sites were identified during the Phase I Cultural Resources survey for the Preferred Route, all of which are located within the potential disturbance area of the Preferred

Route. 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 results of 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 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

Text provided in the March 3, 2017 Application filing remains unchanged.

(2) Cultural Resources in Study Corridor

Cultural resources studies to date have involved background research utilizing data files from the Ohio Historic Preservation Office (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 NRHP, historic cemeteries, historic bridges, national historic landmarks, and previous cultural resources surveys.

Five 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 March 3, 2017 Application filing remains unchanged. As noted above, five cultural resource sites were identified within the potential disturbance area of the Preferred

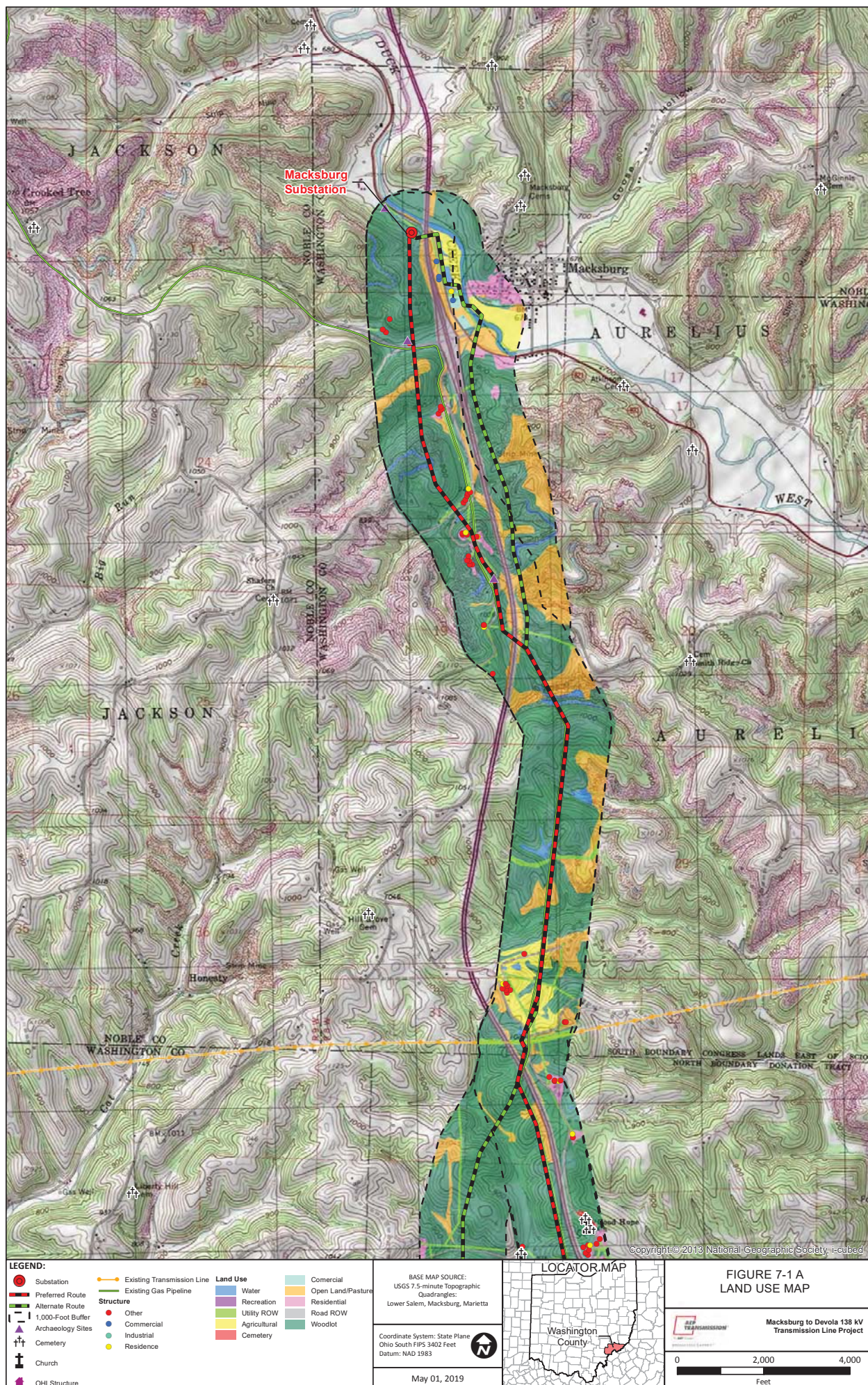
Route during the Phase 1 Cultural Resources survey, however the OHPO concurred that the sites were not significant and preservation of the sites was not required.

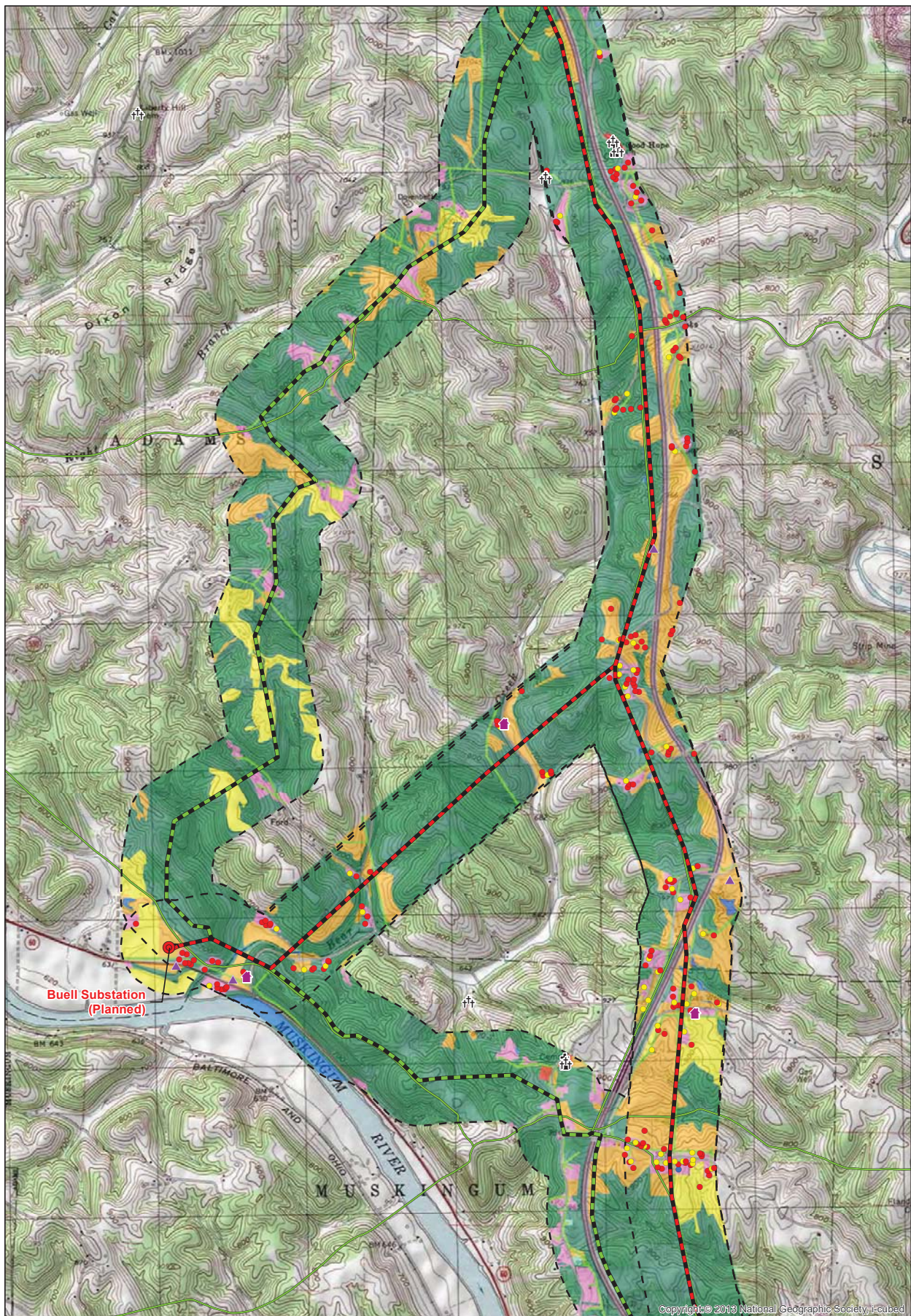
(4) Mitigation Procedures

Text provided in the March 3, 2017 Application filing remains unchanged.

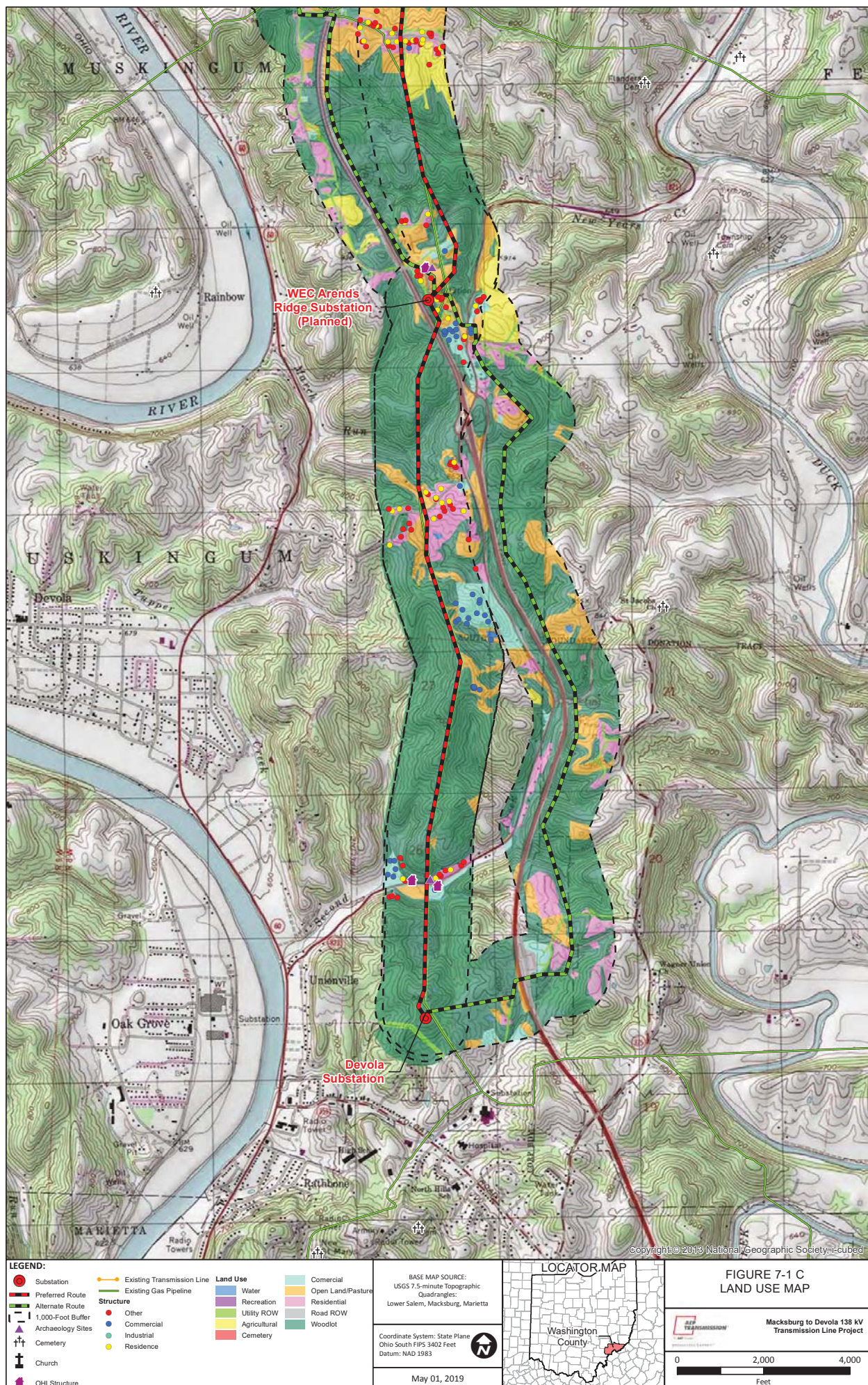
(5) Aesthetic Impact

Text provided in the March 3, 2017 Application filing remains unchanged.





<p>LEGEND:</p> <ul style="list-style-type: none"> Substation Preferred Route Alternate Route 1,000-Foot Buffer Archaeology Sites Cemetery Church OHI Structure 	<p>Structure</p> <ul style="list-style-type: none"> Other Commercial Industrial Residence 	<p>Land Use</p> <ul style="list-style-type: none"> Water Recreation Utility ROW Agricultural Cemetery Commercial Open Land/Pasture Residential Road ROW Woodlot 	<p>BASE MAP SOURCE: USGS 7.5-minute Topographic Quadrangles: Lower Salem, Macksburg, Marietta</p> <p>Coordinate System: State Plane Ohio South FIPS 3402 Feet Datum: NAD 1983</p> <p>May 01, 2019</p>	<p>LOCATOR MAP</p> <p>Washington County</p>	<p>FIGURE 7-1 B LAND USE MAP</p> <p>Macksburg to Devola 138 kV Transmission Line Project</p> <p>0 2,000 4,000 Feet</p>
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4906-5-08 ECOLOGICAL INFORMATION AND COMPLIANCE WITH PERMITTING REQUIREMENTS

Text provided in the March 3, 2017 Application filing remains unchanged.

(A) ECOLOGICAL MAP

Text provided in the March 3, 2017 Application filing remains unchanged.

(B) FIELD SURVEY REPORT FOR VEGETATION AND SURFACE WATERS

Text provided in the March 3, 2017 Application filing remains unchanged.

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

(a) Vegetative Communities

Text provided in the March 3, 2017 Application filing remains unchanged.

(b) Wetlands

Text provided in the March 3, 2017 Application filing remains unchanged.

(i) Summary of National Wetland Inventory Data

USFWS NWI data, including freshwater wetlands and riverine areas, were mapped within 1,000 feet of the Preferred and Alternate Routes, and reviewed to guide the field ecological survey as one factor in identifying potential wetland locations (USFWS, 2014). The NWI-mapped areas for the Preferred and Alternate Routes are shown on revised Figure 8-2A through 8-2M and Figure 8-3A through 8-3N, respectively. Table 8-1 summarizes the NWI data by wetland classification and habitat type. The actual extent and type of field-delineated wetlands along the routes are discussed in the next section.

TABLE 8-1
NWI Wetlands Within 1,000 feet of the Preferred and Alternate Routes

Wetland Type	NWI Code	NWI Habitat Type*	Total Number of Each Habitat Type Preferred/ Alternate
Freshwater Emergent Wetland	PEM1A	Palustrine Emergent Persistent Temporary Flooded	4 – Preferred 4 – Alternate
Freshwater Forested/Shrub Wetland	PFO1A	Palustrine Forested Broad-Leaved Deciduous Temporary Flooded	5 4 – Preferred 7 – Alternate
Freshwater Pond	PUBGh	Palustrine Unconsolidated Bottom Intermittently Exposed Diked/Impounded	17 11 – Preferred 19 – Alternate
	PUBGx	Palustrine Unconsolidated Bottom Excavated	21 19 – Preferred 20 – Alternate
	<u>PUBHh</u>	<u>Palustrine Unconsolidated Bottom Permanently Flooded Diked/Impounded</u>	<u>2</u> - Preferred

TABLE 8-1

NWI Wetlands Within 1,000 feet of the Preferred and Alternate Routes

Wetland Type	NWI Code	NWI Habitat Type*	Total Number of Each Habitat Type Preferred/ Alternate
Riverine	R2UBH	Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded	2 – Preferred 2 – Alternate
	R4SBC	Riverine Intermittent Streambed Seasonally Flooded	36 - Preferred
	R5UBH	Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded	7 - Preferred
Total Number of Preferred Route NWI Wetlands:			49 85
Total Number of Alternate Route NWI Wetlands:			52

Notes:

Total number of PEM = 8, PFO= ~~12~~ 11, PUB = ~~77~~ 71, R2UBH = 4 47* USFWS, ~~2010~~ 2018**(ii) Field-Delineated Wetlands**

A total of ~~30~~ 37 wetlands (totaling ~~4.36~~ 4.7 acres) were delineated within the Preferred Route field survey area. Within the Alternate Route field survey area, 22 wetlands (totaling 5.87 acres) were delineated. Of these wetlands, six wetlands (WRJ009, WRJ010, WRJ011, WRJ012, WRJ013, WSM028) were delineated within both the Preferred and Alternate Routes where the routes overlapped.

A total of ~~1.56~~ 1.6 acres of wetlands were delineated within the Preferred Route ROW and 2.56 acres within the Alternate Route ROW. These field-delineated wetlands for the Preferred and Alternate Routes are mapped on revised Figures 8-2A through 8-2M and Figures 8-3A through 8-3N, 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								
WSM002	Preferred	8-2A	PEM	45	2	—	0.04 <0.1	—
WSM003	Preferred	8-2A	PEM	42	Modified 2	52 <u>50</u>	0.05 <0.1	0.05 <u>0.1</u>
WSM004	Preferred	8-2A	PSS	42	Modified 2	—	0.02 <0.1	0.02 <0.1
WSM005	Preferred	8-2A	PEM	31	1 or 2 Gray Zone	—	0.04 <0.1	<0.04 <0.1
WSM006	Preferred	8-2B	PEM	48	2	—	0.05 <u>0.1</u>	—
WSM007	Preferred	8-2B	PFO	50	2	59	0.27 <u>0.3</u>	0.42 <u>0.1</u>
WSM008	Preferred	8-2B	PSS	49	2	8	0.06 <u>0.1</u>	0.02 <0.1
WSM009	Preferred	8-2B	PFO	48	2	—	0.09 <u>0.1</u>	<0.04 <0.1
WSM010	Preferred	8-2B	PEM	35	Modified 2	—	0.04 <0.1	0.04 <0.1
WSM011	Preferred	8-2B	PSS	43	Modified 2	127	0.54 <u>0.5</u>	0.28 <u>0.3</u>
WSM012	Preferred	8-2B	PFO	29.5	1	—	0.06 <u>0.1</u>	<0.04 —
WRJ009	Preferred	8-2B/C	PSS	38	Modified 2	—	0.06 <u>0.1</u>	—
WRJ010	Preferred	8-2B/C	PEM	38	Modified 2	225	0.93 <u>1.0</u>	0.43 <u>0.4</u>
WRJ011	Preferred	8-2C	PFO	25	1	—	0.04 <u>0.1</u>	—
WRJ012	Preferred	8-2C	PEM	24	1	94 <u>93</u>	0.53 <u>0.5</u>	0.24 <u>0.2</u>
WRJ013	Preferred	8-2D	PSS	41	Modified 2	—	0.05 <u>0.1</u>	—
WSM028	Preferred	8-2D	PSS	38	Modified 2	—	0.28 <u>0.4</u>	<0.04 <0.1
WJF004	Preferred	<u>8-2D</u>	<u>PEM</u>	<u>33.5</u>	<u>Modified 2</u>	<u>—</u>	<u><0.1</u>	<u>—</u>
WBR001	Preferred	<u>8-2D</u>	<u>PEM</u>	<u>28</u>	<u>1</u>	<u>—</u>	<u><0.1</u>	<u><0.1</u>

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}
WSH004	Preferred	8-2E	PEM	24	1	—	0.09 <u>0.1</u>	0.06 <u>0.1</u>
WSH002	Preferred	8-2E	PEM	26	1	—	0.26 <u>0.3</u>	0.03 <u><0.1</u>
WSH003	Preferred	8-2F	PEM	23	1	—	0.09 <u>0.1</u>	0.06 <u>0.1</u>
WMJ001	Preferred	8-2F	PEM	24	1	— <u>25</u>	0.04 <u><0.1</u>	<0.04 <u><0.1</u>
<u>WDS202</u>	<u>Preferred</u>	<u>8-2H</u>	<u>PEM</u>	<u>12</u>	<u>1</u>	<u>—</u>	<u><0.1</u>	<u>—</u>
WSM023	Preferred	8-2I	PEM	23	1	—	0.02 <u><0.1</u>	—
WSM022	Preferred	8-2I	PEM	23	1	— <u>24</u>	0.03 <u><0.1</u>	0.03 <u><0.1</u>
WSM013	Preferred	8-2I	PEM	36.5	Modified 2	—	0.29 <u>0.3</u>	—
WSM018	Preferred	8-2I	PEM	36.5	Modified 2	26 <u>24</u>	0.06 <u>0.1</u>	0.05 <u>0.1</u>
WSM019	Preferred	8-2I	PEM	32	1 or 2 Gray Zone	28 <u><1</u>	0.25 <u>0.2</u>	0.08 <u>0.1</u>
WSM020	Preferred	8-2I	PEM	21	1	—	0.04 <u><0.1</u>	—
WSM021	Preferred	8-2I	PEM	23	1	—	0.04 <u><0.1</u>	—
WSM027	Preferred	8-2J/K	PEM	24.5	1	—	<0.04 <u><0.1</u>	<0.04 <u><0.1</u>
WSM026	Preferred	8-2J/K	PSS	36	Modified 2	—	0.06 <u>0.1</u>	—
			PEM			33 <u>37</u>	0.05 <u>0.1</u>	0.05 <u>0.1</u>
<u>WTQ009</u>	<u>Preferred</u>	<u>8-2M</u>	<u>PEM</u>	<u>24</u>	<u>1</u>	<u>—</u>	<u><0.1</u>	<u>—</u>
<u>WDS017</u>	<u>Preferred</u>	<u>8-2M</u>	<u>PEM/PSS</u>	<u>30</u>	<u>Modified 2</u>	<u>39.0</u>	<u><0.1</u>	<u><0.1</u>
<u>WDS016</u>	<u>Preferred</u>	<u>8-2M</u>	<u>PEM/PSS</u>	<u>26</u>	<u>1</u>	<u>1.0</u>	<u><0.1</u>	<u><0.1</u>
<u>WDS015A</u>	<u>Preferred</u>	<u>8-2M</u>	<u>PEM/PSS</u>	<u>35.5</u>	<u>Modified 2</u>	<u>12.0</u>	<u><0.1</u>	<u><0.1</u>
			<u>PFO</u>			<u>—</u>	<u><0.1</u>	<u><0.1</u>

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}
Alternate Route Wetlands								
WSM001	Alternate	8-3A	PEM	29	1	39	0.16	0.08
WRJ001	Alternate	8-3A	PEM	19	1	173	0.58	0.37
WRJ004	Alternate	8-3A	PEM	12	1	—	0.01	—
WRJ002	Alternate	8-3A	PEM	12	1	16	0.06	0.03
WRJ003	Alternate	8-3A	PEM	16	1	656	2.60	1.24
WRJ005	Alternate	8-3A	PEM	12	1	—	0.04	—
WRJ006a	Alternate	8-3A	PEM	23	1	-	< 0.01	-
WRJ006	Alternate	8-3A	PFO	23	1	-	0.04	0.01
			PSS			-	0.04	< 0.01
			PEM			30	0.07	0.05
WRJ007	Alternate	8-3B	PFO	48	2	10	0.03	0.03
WRJ008	Alternate	8-3B	PEM	28	1	—	0.02	—
WRJ009	Alternate	8-3B/C	PSS	38	Modified 2	—	0.06	—
WRJ010	Alternate	8-3B/C	PEM	38	Modified 2	225	0.93	0.43
WRJ011	Alternate	8-3C	PFO	25	1	—	0.04	—
WRJ012	Alternate	8-3C	PEM	24	1	94	0.53	0.21
WRJ013	Alternate	8-3D	PSS	41	Modified 2	—	0.05	—
WSM028	Alternate	8-3D	PSS	38	Modified 2	—	0.28	< 0.01
Total						652 725	4.36 4.7	1.56 1.6

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}
WTQ001	Alternate	8-3E	PEM	30	1 or 2 Gray Zone	—	0.02	—
WTQ002	Alternate	8-3E	PEM	30	1 or 2 Gray Zone	—	< 0.01	< 0.01
WRJ014	Alternate	8-3J	PEM	10	1	—	0.08	0.06
WRJ015	Alternate	8-3J/K	PEM	17	1	—	0.18	—
WMJ002	Alternate	8-3K	PEM	30	1 or 2 Gray Zone	—	0.01	—
WSM024	Alternate	8-3N	PFO	52.5	2	25	0.02	0.02
Total						1,268	5.87	2.56

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).
- < = less than

(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 1 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

Nine streams (SSM008, SMJ021, SMJ015, STQ025A, STQ025, STQ032, SSM004, SRJ002, and SRJ003) were evaluated using the QHEI method. Of these streams, five had segments located in the Preferred Route, three had segments located in the Alternate Route and one stream had segments in 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 pools 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 ~~233~~ 243 streams were evaluated using the HHEI method. One hundred and ~~seven~~ seventeen (~~107~~ 117) streams were identified along the Preferred Route Field Survey Area and 110 streams were identified along the Alternate Route Field Survey Area. Sixteen (16) streams were identified along both the Preferred and Alternate Routes where the routes overlapped. 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 8-2M and Figure 8-3A through 8-3N, 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 2.7 miles south of the proposed Devola substation, is a traditionally navigable waterway as defined by USACE.

Approximately ~~9,994~~ 10,155 linear feet of stream are located within the Preferred Route ROW, while approximately 11,417 linear feet are located within the Alternate Route ROW.

The Preferred Route centerline has ~~69~~ 75 stream crossings with all the streams being crossed once, with the following exceptions: stream SSH020 is crossed four times, stream ~~SMJ019~~ SMJ011 is crossed twice, and stream SMJ003 is crossed three times. The length of delineated streams located within the Preferred Route Field Survey Area is approximately ~~29,780~~ 32,009 linear feet. The Alternate Route centerline has 77 stream crossings with all the streams being crossed once, with the following exceptions: stream SSM004 is crossed twice, stream SSH070 is crossed twice, and SSM031 is crossed three times. The total length of streams located within the field survey area of the Alternate Route is approximately 33,619 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 (QHEI)	Crossed by Centerline ^a	Length (linear feet) within Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
Preferred Route												
SSM001 UNT to West Fork Duck Creek	Preferred	8-2A	Intermittent	3	3	HHEI	42	—	Modified Class II PHWH	Yes	316 <u>320</u>	105
SSM002 UNT to West Fork Duck Creek	Preferred	8-2A	Ephemeral	2	0	HHEI	18	—	Modified Class I PHWH	NC	141 <u>145</u>	—
SSM003 UNT to West Fork Duck Creek	Preferred	8-2A	Ephemeral	3	0	HHEI	18	—	Class I PHWH	Yes	320 <u>319</u>	102
SJF002 UNT to West Fork Duck Creek	Preferred	8-2A	Ephemeral	1	2	HHEI	25	—	Modified Class I PHWH	NC	70	0
SSM005 UNT to West Fork Duck Creek	Preferred	8-2A	Ephemeral	2	0	HHEI	16	—	Class I PHWH	NC	28	—
SSM006 UNT to West Fork Duck Creek	Preferred	8-2A	Ephemeral	3	0	HHEI	26	—	Class I PHWH	NC	100 <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
SSM007 UNT to West Fork Duck Creek	Preferred	8-2A	Ephemeral	3	0	HHEI	27	—	Modified Class I PHWH	NC	171	58 <u>59</u>
SSM008 UNT to West Fork Duck Creek	Preferred	8-2A	Perennial	10	20	QHEI	67.5	—	Good	Yes	304 <u>303</u>	102
SSM009 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	3	0	HHEI	26	—	Class I PHWH	Yes	301	232 <u>223</u>
SSM010 UNT to West Fork Duck Creek	Preferred	8-2B	Perennial	8	6	HHEI	65	—	Modified Class II PHWH	Yes	346 <u>350</u>	108
SSM011 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	3	0	HHEI	15	—	Class I PHWH	Yes	348	105
SSM012 UNT to West Fork Duck Creek	Preferred	8-2B	Perennial	10	5	HHEI	64	—	Modified Class II PHWH	Yes	302	101

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
SSM013 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	2	0	HHEI	18	—	Modified Class I PHWH	NC	212	42 <u>11</u>
SSM014 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	2	0	HHEI	18	—	Class I PHWH	NC	59	—
SSM015 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	2	0	HHEI	18	—	Class I PHWH	NC	40	—
SSM016 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	2	0	HHEI	18	—	Class I PHWH	NC	49	—
SSM017 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	2	0	HHEI	17	—	Class I PHWH	NC	54 <u>50</u>	—
SSM018 UNT to West Fork Duck Creek	Preferred	8-2B	Intermittent	5	0	HHEI	25	—	Modified Class I PHWH	NC	440 <u>439</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
SRJ016 UNT to West Fork Duck Creek	Preferred	8-2B	Ephemeral	8	0	HHEI	30	—	Class II PHWH	NC	432 <u>133</u>	31
SRJ017 UNT to West Fork Duck Creek	Preferred	8-2B/C	Ephemeral	6	0	HHEI	17	—	Class I PHWH	NC	147	56
SRJ018 UNT to West Fork Duck Creek	Preferred	8-2B/C	Intermittent	6	2	HHEI	32	—	Class II PHWH	Yes	301	101
SRJ019 UNT to West Fork Duck Creek	Preferred	8-2B/C	Intermittent	4	0	HHEI	22	—	Class I PHWH	NC	32 <u>33</u>	—
SRJ020 UNT to West Fork Duck Creek	Preferred	8-2B/C	Perennial	6	12	HHEI	70	—	Class III PHWH	Yes	265 <u>266</u>	437 <u>138</u>
SRJ021 UNT to West Fork Duck Creek	Preferred	8-2C	Ephemeral	6	0	HHEI	35	—	Class II PHWH	NC	230	86 <u>89</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
SRJ022 UNT to West Fork Duck Creek	Preferred	8-2C	Ephemeral	6	0	HHEI	35	—	Class II PHWH	NC	124	21 <u>22</u>
SRJ023 UNT to West Fork Duck Creek	Preferred	8-2C	Ephemeral	6	0	HHEI	35	—	Class II PHWH	Yes	226 <u>225</u>	106
SRJ024 UNT to West Fork Duck Creek	Preferred	8-2C	Ephemeral	4	0	HHEI	27	—	Class I PHWH	Yes	339 <u>334</u>	101
SRJ025 UNT to West Fork Duck Creek	Preferred	8-2C	Perennial	4	4	HHEI	46	—	Rheocrene Potential	Yes	270 <u>268</u>	122 <u>121</u>
SRJ026 UNT to West Fork Duck Creek	Preferred	8-2C	Intermittent	8	4	HHEI	50	—	Rheocrene Potential	NC	92	—
SRJ027 UNT to West Fork Duck Creek	Preferred	8-2C	Perennial	10	4	HHEI	57	—	Class II PHWH	Yes	418 <u>464</u>	169 <u>172</u>
SRJ028 UNT to West	Preferred	8-2C	Perennial	20	8	HHEI	81	—	Class III PHWH	Yes	318 <u>317</u>	104

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
Fork Duck Creek			Intermittent	15	8			—		NC	73 —	—
SRJ128 UNT to West Fork Duck Creek	Preferred	8-2C	Intermittent	20	8	HHEI	81	—	Class III PHWH	NC	77	0
SRJ029 UNT to West Fork Duck Creek	Preferred	8-2D	Intermittent	8	2	HHEI	46	—	Rheocrene Potential	Yes	325 323	124 125
SBR001 UNT to Bear Creek	Preferred	8-2D	Intermittent	2	4	HHEI	37	—	Modified Class II PHWH	Yes	151	132
SSM036 UNT to Bear Creek	Preferred	8-2D	Intermittent	3	2	HHEI	29	—	Class I PHWH	NC	99 104	— 3
SBR002 UNT to Bear Creek	Preferred	8-2D	Intermittent	1.5	1.5	HHEI	23	—	Modified	Yes	111	106
SSH037 UNT to Bear Creek	Preferred	8-2D	Ephemeral	2	2	HHEI	15	—	Modified Class I PHWH	Yes	245 276	102
SSH036 UNT to Bear Creek	Preferred	8-2D	Intermittent	8	3	HHEI	46	—	Modified Class II PHWH	Yes	251 349	119 122

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
SSH035 UNT to Bear Creek	Preferred	8-2D	Ephemeral	10	0	HHEI	34	—	Modified Class II PHWH	Yes	265 <u>303</u>	440 <u>133</u>
SBR003 UNT to Bear Creek	Preferred	<u>8-2D</u>	<u>Intermittent</u>	<u>1</u>	<u>1</u>	<u>HHEI</u>	<u>29</u>	<u>—</u>	<u>Modified Class I PHWH</u>	<u>Yes</u>	<u>88</u>	<u>79</u>
SSH034 UNT to Bear Creek	Preferred	8-2D	Intermittent	10	2	HHEI	35	—	Modified Class II PHWH	Yes	132 <u>194</u>	58 <u>89</u>
SSH033 UNT to Bear Creek	Preferred	8-2D/E	Ephemeral	5	0	HHEI	21	—	Modified Class I PHWH	NC	421 <u>86</u>	18 <u>—</u>
SSH024 UNT to Bear Creek	Preferred	8-2E	Ephemeral	2	0	HHEI	13	—	Modified Class I PHWH	NC	100	41 <u>15</u>
SSH025 UNT to Bear Creek	Preferred	8-2E	Ephemeral	2	0	HHEI	11	—	Modified Class I PHWH	NC	194	—
SSH023 UNT to Bear Creek	Preferred	8-2E	Intermittent	10	4	HHEI	56	—	Modified Class II PHWH	Yes	336 <u>353</u>	103
SSH026 UNT to Bear Creek	Preferred	8-2E	Ephemeral	5	0	HHEI	12	—	Modified Class I PHWH	NC	79	—

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
SSH022 UNT to Bear Creek	Preferred	8-2E	Ephemeral	2	0	HHEI	11	—	Modified Class I PHWH	NC	24 <u>23</u>	—
SSH007 UNT to Bear Creek	Preferred	8-2E	Intermittent	12	2	HHEI	43	—	Modified Class II PHWH	Yes	208	119 <u>120</u>
SSH008 UNT to Bear Creek	Preferred	8-2E	Ephemeral	5	0	HHEI	39	—	Modified Class II PHWH	Yes	181	114 <u>115</u>
SSH009 UNT to Bear Creek	Preferred	8-2E	Ephemeral	2	0	HHEI	11	—	Modified Class I PHWH	NC	88	—
SSH010 UNT to Bear Creek	Preferred	8-2E	Ephemeral	2	0	HHEI	11	—	Modified Class I PHWH	Yes	238 <u>237</u>	119
SSH011 UNT to Bear Creek	Preferred	8-2E	Ephemeral	2	0	HHEI	11	—	Modified Class I PHWH	NC	96 <u>95</u>	—
SSH012 UNT to Bear Creek	Preferred	8-2E	Ephemeral	10	0	HHEI	23	—	Modified Class I PHWH	Yes	305 <u>303</u>	100
SSH013 UNT to Bear Creek	Preferred	8-2E	Intermittent	5	0	HHEI	12	—	Modified Class I PHWH	NC	138 <u>137</u>	33 <u>32</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
SSH014 UNT to Bear Creek	Preferred	8-2E	Intermittent	10	2	HHEI	28	—	Modified Class I PHWH	Yes	756 <u>752</u>	138
SSH015 UNT to Bear Creek	Preferred	8-2E/F	Intermittent	20	2	HHEI	28	—	Modified Class I PHWH	Yes	186 <u>184</u>	77 <u>76</u>
SSH016 UNT to Bear Creek	Preferred	8-2F	Ephemeral	3	0	HHEI	11	—	Modified Class I PHWH	NC	60 <u>59</u>	—
SSH017 UNT to Bear Creek	Preferred	8-2F	Intermittent	5	0	HHEI	12	—	Modified Class I PHWH	Yes	330 <u>329</u>	123
SSH018 UNT to Bear Creek	Preferred	8-2F	Ephemeral	4	0	HHEI	12	—	Modified Class I PHWH	NC	152 <u>151</u>	—
SSH019 UNT to Bear Creek	Preferred	8-2F	Intermittent	8	1	HHEI	38	—	Modified Class II PHWH	Yes	304	107
SSH020 UNT to Bear Creek	Preferred	8-2F	Intermittent	6	1	HHEI	37	—	Modified Class II PHWH	Yes	1090 <u>1,079</u>	672 <u>662</u>
SSH021 UNT to Bear Creek	Preferred	8-2F	Ephemeral	4	0	HHEI	24	—	Modified Class I PHWH	NC <u>Yes</u>	175	75 <u>78</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
SMJ016 UNT to Bear Creek	Preferred	8-2F	Ephemeral	5	1	HHEI	39	—	Class II PHWH	NC	204	— <u>43</u>
			Intermittent	6	1	HHEI	42	—	Class II PHWH	NC	46 <u>303</u>	—
SMJ017 UNT to Bear Creek	Preferred	8-2F	Ephemeral	3	1	HHEI	16	—	Class I PHWH	NC	33 <u>89</u>	—
SMJ018 UNT to Bear Creek	Preferred	8-2F	Ephemeral	1	1	HHEI	12	—	Class I PHWH	NC	109 <u>189</u>	— <u>47</u>
SMJ019 UNT to Bear Creek	Preferred	8-2F/G	Ephemeral	3	2	HHEI	27	—	Class I PHWH	Yes	177	177 <u>—</u>
			Intermittent	8	2	HHEI	45	—	Class II PHWH	Yes	554	521 <u>168</u>
SMJ020 UNT to Bear Creek	Preferred	8-2F/G	Ephemeral	2	2	HHEI	25	—	Class I PHWH	NC	135	12 <u>—</u>
SMJ021 Bear Creek	Preferred	8-2F/G	Perennial	45	12	QHEI	71	WWH	Good	Yes	283 <u>303</u>	101
SMJ014 UNT to Bear Creek	Preferred	8-2F/G	Ephemeral	5	1	HHEI	46	—	Class II PHWH	NC <u>Yes</u>	159	20 <u>106</u>
SMJ013 UNT to Bear Creek	Preferred	8-2G	Intermittent	7	2	HHEI	46	—	Class II PHWH	Yes	323 <u>352</u>	102 <u>105</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
SMJ011 UNT to Bear Creek	Preferred	8-2G	Intermittent	6	3	HHEI	54	—	Class II PHWH	Yes	781 <u>801</u>	328 <u>384</u>
SMJ012 UNT to Bear Creek	Preferred	8-2G	Intermittent	6	1	HHEI	45	—	Class II PHWH	Yes <u>NC</u>	185 <u>144</u>	95 <u>21</u>
SMJ015 UNT to Bear Creek	Preferred	8-2G	Perennial	30	12	QHEI	70	—	Good	Yes	366 <u>312</u>	104 <u>100</u>
STQ025A Bear Creek	Preferred	8-2H	Perennial	50	20	QHEI	69	WWH	Good	Yes	403 <u>383</u>	144 <u>112</u>
STQ025 Bear Creek	Preferred	8-2H	Perennial	50	20	QHEI	69	WWH	Good	Yes	369 <u>375</u>	120 <u>127</u>
SSH006 UNT to Bear Creek	Preferred	8-2F	Intermittent	10	2	HHEI	37	—	Modified Class II PHWH	Yes	335 <u>355</u>	119 <u>114</u>
SSH005 UNT to Bear Creek	Preferred	8-2F	Ephemeral	5	0	HHEI	13	—	Modified Class I PHWH	NC	76 <u>118</u>	— <u>16</u>
SSH002 UNT to Bear Creek	Preferred	8-2F	Ephemeral	10	2	HHEI	45	—	Modified Class II PHWH	Yes	284 <u>312</u>	106 <u>104</u>
SSH003 UNT to Bear Creek	Preferred	8-2F	Ephemeral	1	0	HHEI	12	—	Modified Class I PHWH	NC	51	—

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
SSH004 UNT to Bear Creek	Preferred	8-2F	Ephemeral	1	0	HHEI	12	—	Modified Class I PHWH	NC	56	—
SSH001 UNT to Bear Creek	Preferred	8-2F	Ephemeral	2	0	HHEI	17	—	Modified Class I PHWH	NC	67	—
SMJ001 UNT to Bear Creek	Preferred	8-2F	Ephemeral	4	4	HHEI	40	—	Class II PHWH	NC	4 <u>15</u>	—
SMJ002 UNT to Bear Creek	Preferred	8-2I	Ephemeral	3	3	HHEI	31	—	Class II PHWH	NC <u>Yes</u>	73 <u>260</u>	49 <u>221</u>
SMJ003 UNT to Bear Creek	Preferred	8-2I	Ephemeral	3	2	HHEI	31	—	Class II PHWH	NC	119	—
			Intermittent	6	2	HHEI	46	—	Class II PHWH	Yes	517	404 <u>388</u>
SMJ004 UNT to Bear Creek	Preferred	8-2I	Perennial	8	3	HHEI	72	—	Class III PHWH	Yes	491	209 <u>208</u>
SMJ005 UNT to Bear Creek	Preferred	8-2I	Perennial	8	2	HHEI	62	—	Class II PHWH	Yes	496 <u>221</u>	65 <u>63</u>
SMJ006 UNT to Bear Creek	Preferred	8-2I	Intermittent	4	1	HHEI	43	—	Class II PHWH	NC	428 <u>430</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
SSM019 UNT to Duck Creek	Preferred	8-2I	Intermittent	4	6	HHEI	39	—	Modified Class II PHWH	NC	185	—
SSM026 UNT to Duck Creek	Preferred	8-2I	Intermittent	1.5	1	HHEI	19	—	Modified Class I PHWH	NC	59	46 <u>17</u>
SSM027 UNT to Duck Creek	Preferred	8-2I	Ephemeral	1	0	HHEI	13	—	Modified Class I PHWH	NC	15	—
SSM028 UNT to Duck Creek	Preferred	8-2I	Intermittent	1.5	2	HHEI	19	—	Modified Class I PHWH	NC	101	4 <u>3</u>
SSM024 UNT to Duck Creek	Preferred	8-2I	Intermittent	8	3	HHEI	60	—	Class II PHWH	Yes	172 <u>179</u>	62 <u>68</u>
SSM029 UNT to New Years Creek	Preferred	8-2I	Intermittent	4	3	HHEI	41	—	Modified Class II PHWH	NC	74 <u>48</u>	—
SRJ034 UNT to New Years Creek	Preferred	8-2I	Perennial	15	6	HHEI	75	—	Class III PHWH	Yes	311	402 <u>101</u>
SRJ033 UNT to New Years Creek	Preferred	8-2I/J	Perennial	15	8	HHEI	75	—	Class III PHWH	Yes	275 <u>283</u>	442 <u>113</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
SRJ032 UNT to New Years Creek	Preferred	8-2J	Ephemeral	8	1	HHEI	39	—	Class II PHWH	NC	508	460 <u>132</u>
SSH027 UNT to New Years Creek	Preferred	8-2J	Ephemeral	8	0	HHEI	23	—	Modified Class I PHWH	Yes	370 <u>369</u>	116
SSH028 New Years Creek	Preferred	8-2J	Perennial	20	5	HHEI	71	—	Modified Class III PHWH	Yes	395 <u>407</u>	133
SSH032 UNT to New Years Creek	Preferred	8-2J	Intermittent	5	2	HHEI	30	—	Class II PHWH	NC	57	—
SSH031 UNT to New Years Creek	Preferred	8-2J	Ephemeral	5	0	HHEI	12	—	Modified Class I PHWH	NC	183	—
SSH030 UNT to New Years Creek	Preferred	8-2J	Ephemeral	1	0	HHEI	12	—	Modified Class I PHWH	NC	55	—
SSH029 UNT to New Years Creek	Preferred	8-2J/K	Perennial	10	9	HHEI	57	—	Modified Class II PHWH	Yes	324 <u>372</u>	442 <u>114</u>
SRJ030 UNT to New Years Creek	Preferred	8-2J/K	Perennial	15	6	HHEI	72	—	Class III PHWH	Yes	346 <u>339</u>	422 <u>94</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
SSM035 UNT to New Years Creek	Preferred	8-2J/K	Intermittent	3	1	HHEI	31	—	Modified Class II PHWH	Yes	322 <u>315</u>	469 <u>151</u>
SRJ031 UNT to New Years Creek	Preferred	8-2J/K	Perennial	6	3	HHEI	48	—	Rheocrene Potential	NC	228 <u>131</u>	39 <u>26</u>
			<u>Intermittent</u>								<u>100</u>	<u>0</u>
SRJ052 UNT to New Years Creek	Preferred	8-2J/K	Ephemeral	15	0	HHEI	37	—	Class II PHWH	NC	459 <u>373</u>	— <u>49</u>
SRJ063 UNT to March Run	Preferred	8-2K	Perennial	20	3	HHEI	69	—	Modified Class II PHWH	Yes	213	409 <u>114</u>
SRJ064 UNT to March Run	Preferred	8-2K	Ephemeral	6	2	HHEI	22	—	Class I PHWH	Yes	166	74 <u>80</u>
SRJ065 UNT to March Run	Preferred	8-2K	Ephemeral	6	0	HHEI	22	—	Class I PHWH	Yes	476 <u>197</u>	87 <u>91</u>
SRJ066 UNT to March Run	Preferred	8-2K	Ephemeral	6	0	HHEI	19	—	Class I PHWH	Yes	255 <u>260</u>	425 <u>124</u>
SRJ067 UNT to March Run	Preferred	8-2K	Ephemeral	6	0	HHEI	19	—	Class I PHWH	Yes	456 <u>169</u>	65
SRJ068 March Run	Preferred	8-2K	Perennial	12	12	HHEI	76	WWH	Class III PHWH	Yes	548	188

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
SRJ069 UNT to March Run	Preferred	8-2K	Perennial	15	12	HHEI	76	—	Class III PHWH	Yes	421	154
SRJ070 UNT to March Run	Preferred	8-2K/L	Perennial	6	2	HHEI	34	—	Rheocene Potential	NC	406	118
SRJ071 UNT to March Run	Preferred	8-2L	Intermittent	10	2	HHEI	24	—	Class I PHWH	NC	207	—
SSH046 UNT to Second Creek	Preferred	8-2L	Ephemeral	2	0	HHEI	11	—	Modified Class I PHWH	NC	87	—
SSH045 UNT to Second Creek	Preferred	8-2L	Intermittent	4	2	HHEI	15	—	Modified Class I PHWH	NC	119 <u>116</u>	118
SSH044 UNT to Second Creek	Preferred	8-2L	Ephemeral	2	0	HHEI	20	—	Modified Class I PHWH	NC	49 <u>41</u>	—
STQ039 UNT to Second Creek	Preferred	8-2L/M	Intermittent	2	1	HHEI	24	—	Class I PHWH	NC	42	—
STQ040 UNT to Second Creek	Preferred	8-2M	Ephemeral	1.5	0	HHEI	12	—	Class I PHWH	NC	19	—

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
STQ041 UNT to Second Creek	Preferred	8-2M	Intermittent	3	2	HHEI	29	—	Modified Class I PHWH	NC	306 <u>303</u>	86
STQ042 UNT to Second Creek	Preferred	8-2M	Ephemeral	3	1	HHEI	26	—	Class I PHWH	NC	126	77 <u>83</u>
STQ043 UNT to Second Creek	Preferred	8-2M	Ephemeral	3	0	HHEI	12	—	Class I PHWH	NC	46	—
STQ044 UNT to Second Creek	Preferred	8-2M	Ephemeral	2	1	HHEI	25	—	Modified Class I PHWH	Yes	284 <u>278</u>	456 <u>152</u>
STQ045 UNT to Second Creek	Preferred	8-2M	Intermittent	3	3	HHEI	49	—	Class II PHWH	Yes	186 <u>198</u>	55 <u>59</u>
STQ046 UNT to Second Creek	Preferred	8-2M	Ephemeral	1	0	HHEI	12	—	Class I PHWH	NC	57	6 <u>—</u>
STQ047 UNT to Second Creek	Preferred	8-2M	Perennial	4	1	HHEI	43	—	Class II PHWH	NC	433 <u>237</u>	—
STQ032 Second Creek	Preferred	8-2M	Perennial	23	16	QHEI	64.5	—	Good	Yes	296 <u>304</u>	101
STQ031 UNT to Second Creek	Preferred	8-2M	Ephemeral	2	0	HHEI	29	—	Class I PHWH	NC	210	—

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
STQ030 UNIT to Second Creek	Preferred	8-2M	Intermittent	3	2	HHEI	32	—	Modified Class II PHWH	Yes	208	103
STQ029 UNIT to Second Creek	Preferred	8-2M	Ephemeral	1	0	HHEI	12	—	Class I PHWH	NC	54	—
STQ028 UNIT to Second Creek	Preferred	8-2M	Intermittent	2	0	HHEI	28	—	Class I PHWH	NC	109	—
STQ027 UNIT to Second Creek	Preferred	8-2M	Perennial	4	2	HHEI	43	—	Class II PHWH	Yes	340	104
STQ026 UNIT to Second Creek	Preferred	8-2M	Ephemeral	1	2	HHEI	24	—	Modified Class I PHWH	Yes	331	244
STQ066 UNIT to Second Creek	Preferred	8-2M	Ephemeral	1	1.5	HHEI	12	—	Modified Class I PHWH	NC	39	0
STQ065 UNIT to Second Creek	Preferred	8-2M	Intermittent	2.5	1.5	HHEI	25	—	Modified Class I PHWH	Yes	267	81
STQ064 UNIT to Second Creek	Preferred	8-2M	Ephemeral	2	1	HHEI	24	—	Modified Class I PHWH	NC	143	25

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>SDS080</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Intermittent</u>	<u>2</u>	<u>1</u>	<u>HHEI</u>	<u>21</u>	<u>—</u>	<u>Class I PHWH</u>	<u>NC</u>	<u>163</u>	<u>56</u>
<u>SDS081</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Ephemeral</u>	<u>1.5</u>	<u>0</u>	<u>HHEI</u>	<u>13</u>	<u>—</u>	<u>Class I PHWH</u>	<u>NC</u>	<u>78</u>	<u>0</u>
<u>SDS082</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Intermittent</u>	<u>3</u>	<u>2</u>	<u>HHEI</u>	<u>51</u>	<u>—</u>	<u>Class II PHWH</u>	<u>Yes</u>	<u>332</u>	<u>105</u>
<u>SDS079</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Intermittent</u>	<u>1.5</u>	<u>3</u>	<u>HHEI</u>	<u>39</u>	<u>—</u>	<u>Class II PHWH</u>	<u>Yes</u>	<u>229</u>	<u>104</u>
<u>SDS074A</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Ephemeral</u>	<u>1.5</u>	<u>0</u>	<u>HHEI</u>	<u>16</u>	<u>—</u>	<u>Class I PHWH</u>	<u>NC</u>	<u>290</u>	<u>80</u>
<u>SDS074B</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Intermittent</u>	<u>4.5</u>	<u>3</u>	<u>HHEI</u>	<u>57</u>	<u>—</u>	<u>Class II PHWH</u>	<u>NC</u>	<u>49</u>	<u>0</u>
<u>SDS075</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Ephemeral</u>	<u>2</u>	<u>0</u>	<u>HHEI</u>	<u>17</u>	<u>—</u>	<u>Class I PHWH</u>	<u>Yes</u>	<u>100</u>	<u>100</u>
<u>SDS076</u> UNT to Second Creek	<u>Preferred</u>	<u>8-2M</u>	<u>Ephemeral</u>	<u>2</u>	<u>1</u>	<u>HHEI</u>	<u>30</u>	<u>—</u>	<u>Class II PHWH</u>	<u>NC</u>	<u>152</u>	<u>0</u>
										Total	29,780 32,009	9,994 10,155

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												
SSM001 UNT to West Fork Duck Creek	Alternate	8-3A	Intermittent	3	3	HHEI	42	—	Modified Class II PHWH	NC	102	—
SSM004 West Fork Duck Creek	Alternate	8-3A	Perennial	60	36	QHEI	72.5	WWH	Good	Yes	1,252	223
SRJ002 UNT to West Fork Duck Creek	Alternate	8-3A	Perennial	20	12	QHEI	58	—	Fair	Yes	265	120
SRJ003 UNT to West Fork Duck Creek	Alternate	8-3A	Perennial	15	6	QHEI	59	—	Fair	NC	6	—
SRJ004 UNT to West Fork Duck Creek	Alternate	8-3A	Ephemeral	6	20	HHEI	62	—	Class II PHWH	Yes	184	82
SRJ006 UNT to West Fork Duck Creek	Alternate	8-3A/B	Ephemeral	8	5	HHEI	53	—	Class II PHWH	Yes	369	117

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
SRJ005 UNT to West Fork Duck Creek	Alternate	8-3B	Ephemeral	6	20	HHEI	62	—	Class II PHWH	NC	80	—
SRJ007 UNT to West Fork Duck Creek	Alternate	8-3B	Ephemeral	5	0	HHEI	23	—	Class I PHWH	Yes	373	123
SRJ008 UNT to West Fork Duck Creek	Alternate	8-3B	Intermittent	8	15	HHEI	53	—	Class II PHWH	Yes	341	119
SRJ009 UNT to West Fork Duck Creek	Alternate	8-3B	Intermittent	8	15	HHEI	53	—	Class II PHWH	Yes	301	174
SRJ010 UNT to West Fork Duck Creek	Alternate	8-3B	Ephemeral	4	3	HHEI	22	—	Class I PHWH	NC	84	—
SRJ011 UNT to West Fork Duck Creek	Alternate	8-3B	Ephemeral	4	3	HHEI	22	—	Class I PHWH	NC	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 (QHIEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SRJ012 UNT to West Fork Duck Creek	Alternate	8-3B	Ephemeral	3	0	HHEI	22	—	Class I PHWH	NC	101	—
SRJ013 UNT to West Fork Duck Creek	Alternate	8-3B	Intermittent	10	8	HHEI	40	—	Class II PHWH	Yes	326	115
SRJ014 UNT to West Fork Duck Creek	Alternate	8-3B	Intermittent	6	10	HHEI	42	—	Class II PHWH	Yes	353	101
SRJ015 UNT to West Fork Duck Creek	Alternate	8-3B	Intermittent	6	10	HHEI	42	—	Rheocrene Potential	Yes	271	108
SRJ016 UNT to West Fork Duck Creek	Alternate	8-3B	Ephemeral	8	0	HHEI	30	—	Class II PHWH	NC	132	31
SRJ017 UNT to West Fork Duck Creek	Alternate	8-3B/C	Ephemeral	6	0	HHEI	12	—	Class I PHWH	NC	147	56

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
SRJ018 UNT to West Fork Duck Creek	Alternate	8-3B/C	Intermittent	6	5	HHEI	32	—	Class II PHWH	Yes	301	101
SRJ019 UNT to West Fork Duck Creek	Alternate	8-3B/C	Intermittent	4	0	HHEI	22	—	Class I PHWH	NC	32	—
SRJ020 UNT to West Fork Duck Creek	Alternate	8-3B/C	Perennial	6	30	HHEI	70	—	Class III PHWH	Yes	265	137
SRJ021 UNT to West Fork Duck Creek	Alternate	8-3C	Ephemeral	6	0	HHEI	35	—	Class II PHWH	NC	230	86
SRJ022 UNT to West Fork Duck Creek	Alternate	8-3C	Ephemeral	6	0	HHEI	35	—	Class II PHWH	NC	124	21
SRJ023 UNT to West Fork Duck Creek	Alternate	8-3C	Ephemeral	6	0	HHEI	35	—	Class II PHWH	Yes	226	106

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
SRJ024 UNT to West Fork Duck Creek	Alternate	8-3C	Ephemeral	4	0	HHEI	27	—	Class I PHWH	Yes	339	101
SRJ025 UNT to West Fork Duck Creek	Alternate	8-3C	Perennial	4	10	HHEI	46	—	Rheocrene Potential	Yes	270	122
SRJ026 UNT to West Fork Duck Creek	Alternate	8-3C	Intermittent	8	10	HHEI	50	—	Rheocrene Potential	NC	92	—
SRJ027 UNT to West Fork Duck Creek	Alternate	8-3C	Perennial	10	10	HHEI	57	—	Class II PHWH	Yes	418	169
SRJ028 UNT to West Fork Duck Creek	Alternate	8-3C	Perennial	20	20	HHEI	81	—	Class III PHWH	Yes	318	104
			Intermittent	15						NC	73	—
SRJ029 UNT to West Fork Duck Creek	Alternate	8-3D	Intermittent	8	5	HHEI	46	—	Rheocrene Potential	Yes	325	124
SSM036 UNT to Bear Creek	Alternate	8-3D	Intermittent	3	4	HHEI	29	—	Class I PHWH	NC	99	—

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
SSH038 Bear Creek	Alternate	8-3D	Perennial	10	22	HHEI	65	WWH	Modified Class II PHWH	Yes	491	116
SSH039 UNT to Bear Creek	Alternate	8-3D	Ephemeral	2	0	HHEI	11	—	Class I PHWH	NC	89	—
SSH040 UNT to Bear Creek	Alternate	8-3D	Ephemeral	8	0	HHEI	33	—	Class II PHWH	Yes	311	104
SSH041 UNT to Bear Creek	Alternate	8-3D	Ephemeral	2	0	HHEI	12	—	Modified Class I PHWH	NC	209	27
SSH042 UNT to Bear Creek	Alternate	8-3D	Ephemeral	5	0	HHEI	12	—	Class I PHWH	Yes	539	209
SSH043 UNT to Bear Creek	Alternate	8-3D/E	Perennial	8	22	HHEI	59	—	Class II PHWH	Yes	405	121
STQ001 UNT to Bear Creek	Alternate	8-3E	Intermittent	5	7	HHEI	54	—	Class II PHWH	Yes	390	125
STQ002 UNT to Bear Creek	Alternate	8-3E	Perennial	2	0	HHEI	12	—	Modified Class I PHWH	Yes	298	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 (QHIEI)	Crossed by Centerline ^a	Length (linear feet) within Field Survey Area ^b	Length (linear feet) within Potential Disturbance Area/ROW ^c
SRJ039 UNT to Right Branch Cat Creek	Alternate	8-3E	Ephemeral	10	0	HHEI	21	—	Class I PHWH	NC	99	—
SRJ038 UNT to Right Branch Cat Creek	Alternate	8-3E	Ephemeral	10	0	HHEI	28	—	Class I PHWH	NC	117	13
SRJ037 UNT to Right Branch Cat Creek	Alternate	8-3E/F	Ephemeral	6	0	HHEI	19	—	Class I PHWH	Yes	251	140
SRJ036 UNT to Right Branch Cat Creek	Alternate	8-3E/F	Ephemeral	6	0	HHEI	29	—	Class I PHWH	Yes	179	105
SRJ035 UNT to Right Branch Cat Creek	Alternate	8-3E/F	Ephemeral	6	1	HHEI	24	—	Class I PHWH	NC	87	—
STQ003 UNT to Right Branch Cat Creek	Alternate	8-3F	Ephemeral	2.5	0	HHEI	26	—	Class I PHWH	NC	29	—

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
STQ004 UNT to Right Branch Cat Creek	Alternate	8-3F	Perennial	7	10	HHEI	52	—	Class II PHWH	Yes	905	163
STQ005 UNT to Right Branch Cat Creek	Alternate	8-3F	Perennial	4.5	15	HHEI	55	—	Class II PHWH	Yes	409	232
STQ006 UNT to Right Branch Cat Creek	Alternate	8-3F	Ephemeral	3	0	HHEI	21	—	Class I PHWH	NC	106	—
STQ007 UNT to Right Branch Cat Creek	Alternate	8-3F	Ephemeral	1.5	0	HHEI	13	—	Class I PHWH	NC	9	—
STQ008 UNT to Right Branch Cat Creek	Alternate	8-3F	Ephemeral	3	0	HHEI	20	—	Modified Class I PHWH	NC	52	—
STQ009 UNT to Right Branch Cat Creek	Alternate	8-3F	Ephemeral	1	0	HHEI	12	—	Class I PHWH	NC	82	—

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
STQ010 UNT to Right Branch Cat Creek	Alternate	8-3F	Perennial	6	25	HHEI	79	—	Class III PHWH	Yes	325	105
STQ011 UNT to Right Branch Cat Creek	Alternate	8-3F	Ephemeral	1	4	HHEI	25	—	Class I PHWH	NC	116	52
STQ012 UNT to Right Branch Cat Creek	Alternate	8-3F	Intermittent	1.5	0	HHEI	30	—	Class II PHWH	NC	141	—
SSH053 UNT to Bear Creek	Alternate	8-3F/G	Intermittent	10	10	HHEI	37	—	Class II PHWH	Yes	415	109
SSH054 UNT to Bear Creek	Alternate	8-3FG	Intermittent	12	10	HHEI	45	—	Class II PHWH	Yes	331	115
SSH055 UNT to Bear Creek	Alternate	8-3G	Ephemeral	4	0	HHEI	13	—	Class I PHWH	NC	459	35
STQ013 UNT to Bear Creek	Alternate	8-3G	Perennial	12	25	HHEI	80	—	Class III PHWH	Yes	357	132

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
STQ014 UNT to Bear Creek	Alternate	8-3G	Ephemeral	1.5	0	HHEI	28	—	Class I PHWH	NC	244	—
STQ015 UNT to Bear Creek	Alternate	8-3G	Intermittent	2	0	HHEI	23	—	Class I PHWH	NC	127	—
STQ016 UNT to Bear Creek	Alternate	8-3G	Intermittent	5	0	HHEI	52	—	Class II PHWH	NC	267	115
STQ017 UNT to Bear Creek	Alternate	8-3G	Ephemeral	1.5	0	HHEI	14	—	Class I PHWH	Yes	191	99
STQ018 UNT to Bear Creek	Alternate	8-3G	Perennial	10	3	HHEI	54	—	Class II PHWH	Yes	354	118
STQ019 UNT to Bear Creek	Alternate	8-3G	Intermittent	2.5	0	HHEI	24	—	Class I PHWH	NC	79	—
STQ021 UNT to Bear Creek	Alternate	8-3G/H	Intermittent	2	0	HHEI	20	—	Class I PHWH	Yes	380	361
STQ020 UNT to Bear Creek	Alternate	8-3H	Intermittent	2	0	HHEI	20	—	Class I PHWH	Yes	376	118

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
STQ022 UNT to Muskingum River	Alternate	8-3H	Intermittent	1	0	HHEI	14	—	Class I PHWH	NC	60	—
STQ023 UNT to Muskingum River	Alternate	8-3H	Ephemeral	1	0	HHEI	14	—	Class I PHWH	NC	47	—
STQ024 UNT to Muskingum River	Alternate	8-3H	Intermittent	2	0	HHEI	14	—	Class I PHWH	NC	91	—
STQ025 Bear Creek	Alternate	8-3H	Perennial	50	16	QHEI	69	WWH	Good	Yes	369	120
SDCS001 UNT to Bear Creek	Alternate	8-3H	Intermittent	6	6	HHEI	55	—	Class II PHWH	Yes	281	121
SDCS002 UNT to Bear Creek	Alternate	8-3H	Ephemeral	3	0	HHEI	24	—	Class I PHWH	NC	108	108
SDCS003 UNT to Bear Creek	Alternate	8-3H	Ephemeral	3	0	HHEI	24	—	Class I PHWH	Yes	344	226

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
SDCS004 UNT to Muskingum River	Alternate	8-3I	Ephemeral	2	0	HHEI	25	—	Class I PHWH	NC	76	45
SDCS005 UNT to Muskingum River	Alternate	8-3I	Ephemeral	2	0	HHEI	35	—	Class II PHWH	NC	45	—
SDCS006 UNT to Muskingum River	Alternate	8-3I	Ephemeral	4	0	HHEI	40	—	Class II PHWH	Yes	581	173
SSH052 UNT to Bear Creek	Alternate	8-3I	Ephemeral	8	0	HHEI	20	—	Class I PHWH	NC	97	—
SSH051 UNT to Bear Creek	Alternate	8-3I	Perennial	10	18	HHEI	70	—	Class III PHWH	Yes	451	115
SSH050 UNT to Bear Creek	Alternate	8-3I	Intermittent	5	4	HHEI	17	—	Class I PHWH	Yes	465	167
SSH049 UNT to Bear Creek	Alternate	8-3I	Ephemeral	2	0	HHEI	13	—	Class I PHWH	NC	155	14

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
SSH048 UNT to Bear Creek	Alternate	8-3I	Ephemeral	5	0	HHEI	31	—	Class II PHWH	Yes	307	101
SSH047 UNT to Bear Creek	Alternate	8-3I	Intermittent	6	1	HHEI	35	—	Modified Class II PHWH	NC	431	103
SRJ041 UNT to Muskingum River	Alternate	8-3I/J	Ephemeral	10	0	HHEI	20	—	Class I PHWH	NC	85	—
SRJ040 UNT to Muskingum River	Alternate	8-3I/J	Ephemeral	8	0	HHEI	35	—	Class II PHWH	NC	130	26
SRJ042 UNT to New Years Creek	Alternate	8-3J	Perennial	5	3	HHEI	37	—	Rheocrene Potential	Yes	350	230
SRJ043 UNT to New Years Creek	Alternate	8-3J	Intermittent	8	1	HHEI	32	—	Class II PHWH	Yes	386	157
SRJ044 UNT to New Years Creek	Alternate	8-3J	Perennial	10	6	HHEI	72	—	Class III PHWH	Yes	207	99
SRJ045 UNT to New Years Creek	Alternate	8-3J	Ephemeral	6	0	HHEI	45	—	Class II PHWH	NC	57	57

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
SRJ046 UNT to New Years Creek	Alternate	8-3J/K	Perennial	10	6	HHEI	67	—	Modified Class II PHWH	Yes	160	54
SRJ047 UNT to New Years Creek	Alternate	8-3J/K	Perennial	4	3	HHEI	38	—	Modified Class II PHWH	NC	166	7
SRJ048 UNT to New Years Creek	Alternate	8-3J/K	Perennial	10	0	HHEI	36	—	Class II PHWH	Yes	326	217
SRJ049 UNT to New Years Creek	Alternate	8-3J/K	Ephemeral	10	0	HHEI	41	—	Class II PHWH	NC	147	—
SRJ052 UNT to New Years Creek	Alternate	8-3J/K	Ephemeral	15	0	HHEI	37	—	Class II PHWH	NC	192	—
SRJ051 UNT to New Years Creek	Alternate	8-3J/K	Intermittent	25	3	HHEI	77	—	Class III PHWH	Yes	273	157
SRJ050 UNT to New Years Creek	Alternate	8-3K	Ephemeral	6	0	HHEI	34	—	Class II PHWH	NC	83	—
SMJ022 UNT to New Years Creek	Alternate	8-3K	Ephemeral	4	0	HHEI	24	—	Modified Class I PHWH	NC	333	—
			Intermittent	9	2	HHEI	48	—	Class II PHWH	Yes	530	266

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
SMJ023 UNT to New Years Creek	Alternate	8-3K	Intermittent	6	1	HHEI	53	—	Class II PHWH	Yes	206	104
SSH056 UNT to New Years Creek	Alternate	8-3K	Perennial	20	5	HHEI	66	—	Modified Class II PHWH	Yes	405	145
SSH057 UNT to New Years Creek	Alternate	8-3K	Ephemeral	4	0	HHEI	26	—	Class I PHWH	NC	67	—
SSH058 UNT to Second Creek	Alternate	8-3L	Intermittent	5	2	HHEI	26	—	Modified Class I PHWH	NC	760	239
SSH059 UNT to Second Creek	Alternate	8-3L	Ephemeral	3	0	HHEI	12	—	Modified Class I PHWH	Yes	148	91
SSH060 UNT to Second Creek	Alternate	8-3L	Ephemeral	5	2	HHEI	19	—	Modified Class I PHWH	NC	59	—
SSH061 UNT to Second Creek	Alternate	8-3L	Ephemeral	10	0	HHEI	29	—	Modified Class I PHWH	Yes	232	104
SSH062 UNT to Second Creek	Alternate	8-3L	Ephemeral	5	0	HHEI	12	—	Class I PHWH	Yes	191	91

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
SSH063 UNT to Second Creek	Alternate	8-3L	Ephemeral	2	0	HHEI	12	—	Class I PHWH	Yes	249	146
SSH064 UNT to Second Creek	Alternate	8-3L	Ephemeral	2	0	HHEI	12	—	Class I PHWH	Yes	182	76
SSH065 UNT to Second Creek	Alternate	8-3L	Intermittent	8	2	HHEI	45	—	Class II PHWH	Yes	1,042	265
SSH066 UNT to Second Creek	Alternate	8-3L	Ephemeral	5	1	HHEI	16	—	Class I PHWH	NC	92	—
SSH067 UNT to Second Creek	Alternate	8-3L	Ephemeral	6	0	HHEI	12	—	Class I PHWH	NC	55	—
SSH068 UNT to Second Creek	Alternate	8-3L	Intermittent	12	2	HHEI	43	—	Class II PHWH	NC	101	—
SSH069 UNT to Second Creek	Alternate	8-3L	Ephemeral	3	0	HHEI	11	—	Modified Class I PHWH	Yes	197	100
SRJ053 UNT to Second Creek	Alternate	8-3L	Intermittent	10	4	HHEI	73	—	Class III PHWH	Yes	304	101

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
SRJ054 UNT to Second Creek	Alternate	8-3L	Ephemeral	5	0	HHEI	38	—	Class II PHWH	NC	57	—
SRJ055 UNT to Second Creek	Alternate	8-3L	Ephemeral	4	0	HHEI	37	—	Class II PHWH	Yes	60	60
SRJ056 UNT to Second Creek	Alternate	8-3L	Ephemeral	10	0	HHEI	37	—	Class II PHWH	Yes	253	146
SRJ057 UNT to Second Creek	Alternate	8-3L	Ephemeral	10	0	HHEI	37	—	Class II PHWH	Yes	322	138
SRJ058 UNT to Second Creek	Alternate	8-3M	Perennial	8	6	HHEI	61	—	Class II PHWH	Yes	208	101
SRJ059 UNT to Second Creek	Alternate	8-3M	Intermittent	10	3	HHEI	56	—	Class II PHWH	Yes	346	109
SRJ060 UNT to Second Creek	Alternate	8-3M	Perennial	15	12	HHEI	87	—	Class III PHWH	Yes	470	172
SRJ061 UNT to Second Creek	Alternate	8-3M	Ephemeral	5	0	HHEI	52	—	Class II PHWH	Yes	202	96

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
SRJ062 UNT to Second Creek	Alternate	8-3M	Intermittent	6	0	HHEI	52	—	Class II PHWH	Yes	362	157
SSH070 UNT to Muskingum River	Alternate	8-3M	Intermittent	10	1	HHEI	34	—	Class II PHWH	Yes	771	280
STQ034 UNT to Muskingum River	Alternate	8-3M/N	Ephemeral	2	0	HHEI	12	—	Modified Class I PHWH	Yes	497	100
STQ035 UNT to Muskingum River	Alternate	8-3M/N	Ephemeral	1	1	HHEI	17	—	Class I PHWH	NC	153	52
STQ036 UNT to Muskingum River	Alternate	8-3M/N	Intermittent	3	0	HHEI	12	—	Class I PHWH	Yes	301	127
SSM030 UNT to Second Creek	Alternate	8-3N	Ephemeral	2	1	HHEI	22	—	Class I PHWH	NC	90	35
SSM031 UNT to Second Creek	Alternate	8-3N	Intermittent	4	2	HHEI	38	—	Class II PHWH	Yes	548	402

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
SSM032 UNT to Second Creek	Alternate	8-3N	Ephemeral	2	0	HHEI	16	—	Class I PHWH	NC	34	—
SSM033 UNT to Second Creek	Alternate	8-3N	Ephemeral	2	0	HHEI	17	—	Class I PHWH	NC	75	50
SSM034 UNT to Second Creek	Alternate	8-3N	Ephemeral	2	0	HHEI	17	—	Class I PHWH	Yes	122	106
Total											33,619	11,417

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.

NC = not crossed

UNT = unnamed tributary

(ii) Lakes, Ponds, and Reservoirs

No major lakes or reservoirs were observed along the proposed Preferred or Alternate Routes. Five ponds totaling ~~0.35~~ 0.4 acre were identified during the field evaluation along the Preferred Route. Eight ponds totaling 1.18 acres were identified along the Alternate Route. One pond, PRJ006, was delineated within both the Preferred and Alternate Routes where the routes overlap. Ponds within the Field Survey Area are shown on revised Figure 8-2A through 8-2M, and Figure 8-3A through 8-3N and are summarized in Table 8-4.

Impacts to ponds from construction, operation, or maintenance of the proposed transmission line are not anticipated. Best management practices (BMP) to control soil erosion and sedimentation (for example, using silt fencing and filter sock as appropriate during construction to minimize runoff siltation).

TABLE 8-4**Delineated Ponds within the Preferred Route and Alternate Route Environmental Field Survey Area**

Feature Name	Route	Figure	Acreage within Field Survey Area	Acreage within ROW	Linear Feet Crossed by Centerline
Preferred Route Ponds					
PRJ006	Preferred	8-2C	0.05 <u><0.1</u>	<0.01 <u>0</u>	-
PRJ005	Preferred	8-2C	<0.01 <u><0.1</u>	0	-
PSH002	Preferred	8-2E	0.01 <u><0.1</u>	0	-
PSH001	Preferred	8-2F	0.12 <u>0.2</u>	0	-
PMJ001	Preferred	8-2F	0.16 <u>0.2</u>	0 <u><0.1</u>	-
Total:			0.35 <u>0.4</u>	0.01 <u><0.1</u>	0
Alternate Route Ponds					
PRJ001	Alternate	8-3B	0.67	0.15	-
PRJ002	Alternate	8-3B	0.22	0.18	105
PRJ004	Alternate	8-3B	0.02	0	-
PRJ006	Alternate	8-3B/C	0.05	< 0.01	-
PRJ005	Alternate	8-3C	< 0.01	0	-
PTQ001	Alternate	8-3E	0.17	0	-
PRJ007	Alternate	8-3E/F	< 0.01	< 0.01	-
PRJ009	Alternate	8-3J	0.03	0	-
Total:			1.18	0.35	105

Notes:

- a All measurements listed as <0.01 were assumed to be 0.01 for calculations.
- b "0" indicates the pond is not within the ROW.

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

Text provided in the March 3, 2017 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 8-5.

TABLE 8-5
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	1,610 <u>1,797</u>	0.3	2.7 <u>3.4</u>
Industrial/Commercial	316 <u>0</u>	<0.1 <u>0.0</u>	0.4 <u><0.1</u>
Open Land / Pasture	7,903 <u>8,275</u>	1.5 <u>1.6</u>	21.5 <u>20.1</u>
Road / Railroad ROW	2,141 <u>2,184</u>	0.4	5.4
Utility ROW	43,615 <u>27,776</u>	8.3 <u>5.3</u>	73.6 <u>66.8</u>
Water (including delineated wetland, streams and ponds)	146 <u>1,437</u>	<0.1 <u>0.3</u>	0.4 <u>3.1</u>
Woodlot	25,607 <u>40,563</u>	4.8 <u>7.7</u>	82.9 <u>90.1</u>
Alternate Route			
Agricultural	7,445	1.4	14.6
Industrial/Commercial	207	< 0.01	0.8
Open Land / Pasture	8,076	1.5	20.3
Road / Railroad ROW	2,048	0.4	7.9
Utility ROW	17,925	3.4	26.5
Water	292	< 0.1	0.9
Woodlot	49,727	9.4	125.3

(b) Construction Impacts on Wetlands

Preferred Route: During wetland and waterbody delineations, ~~21~~ 25 wetlands were identified along the Preferred Route within the proposed ROW, totaling ~~1.56~~ 1.6 acres. Detailed information about each feature can be found in Table 8-2 in Section 4906-05-08(B)(b)(ii). ~~Nine~~ Fourteen of these wetlands are crossed by the Preferred Route centerline, totaling ~~652~~ 725 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: ~~Eight~~ Ten Category 1 wetlands with ORAM scores ranging from 23 to ~~29.5~~ 28 were identified within the ROW, totaling ~~0.42~~ 0.4 acre. ~~Of that total, less than 0.01 acre of no PFO wetlands will be impacted through the clearing of trees and shrubs during construction. This will result in this PFO wetland being converted to PEM.~~
- Category 2 wetlands: ~~Thirteen~~ Sixteen Category 2 wetlands with ORAM scores ranging from 31 to 50 were identified within the proposed ROW, totaling ~~1.14~~ 1.2 acres. Of that total, ~~0.13~~ 0.1 acre of PFO wetland and ~~0.33~~ 0.3 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, 12 wetlands were identified along the Alternate Route ROW, totaling 2.56 acres. The delineated wetlands are shown on Figures 8-3A through 8-3N. Detailed information about each feature can be found in Table 8-2 in Section 4906-05-08(B)(b)(ii). Nine wetlands are crossed by the centerline of the proposed Alternate Route, totaling 1,268 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: Seven Category 1 wetlands with ORAM scores ranging from 10 to 29 were identified within the proposed ROW, totaling 2.06 acres. Of that total, 0.01 acre of PFO wetland and less than 0.01 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 2 wetlands: Five Category 2 wetlands with ORAM scores ranging from 30 to 52.5 were identified within the proposed ROW, totaling 0.50 acre. Of that total, 0.05 acre of PFO wetland and less than 0.01 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: 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, 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 ~~69~~ 75 streams. The Alternate Route centerline crosses 77 streams. Six streams (SSH020, ~~SMJ019~~ SMJ011, SMJ003, SSM004, SSH070, and SSM031) 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 ~~9,994~~ 10,155 linear feet of stream are located within the Preferred Route ROW, while approximately 11,417 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 March 3, 2017 Application filing remains unchanged.

(5) Mitigation Procedures

Text provided in the March 3, 2017 Application filing remains unchanged.

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

Text provided in the March 3, 2017 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 ~~51~~ 53 percent of the area within 1,000 feet of the Preferred Route occurs within the Monongahela Group, ~~43~~ 41 percent within the Dunkard Group, and 6 percent within the Conemaugh Group. Approximately 55 percent of the area within 1,000 feet of the Alternate Route occurs within the Dunkard Group, 37 percent within the Monongahela Group, and 8 percent within the Conemaugh Group (USGS, 2005).

(2) Slopes and Foundation Soil Suitability

Slopes exceeding 12 percent, obtained from the NRCS, are identified in revised Figure 8-2A through 8-2M and Figure 8-3A through 8-3N. Approximately ~~73~~ 72 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 74 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.

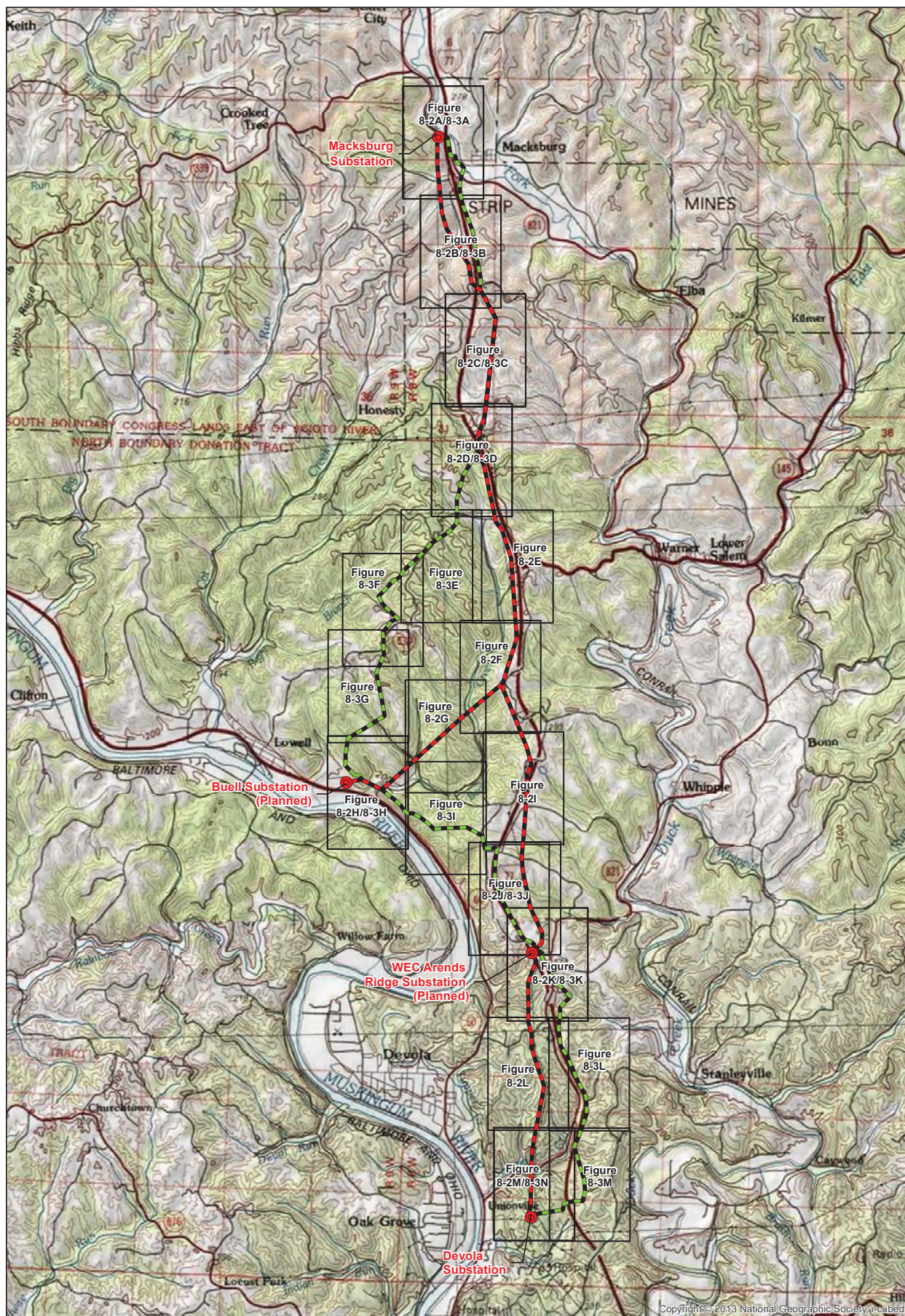
At a minimum, geotechnical soil borings will provide the following information to be utilized for structure placement and foundation design engineering as needed:

- (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.

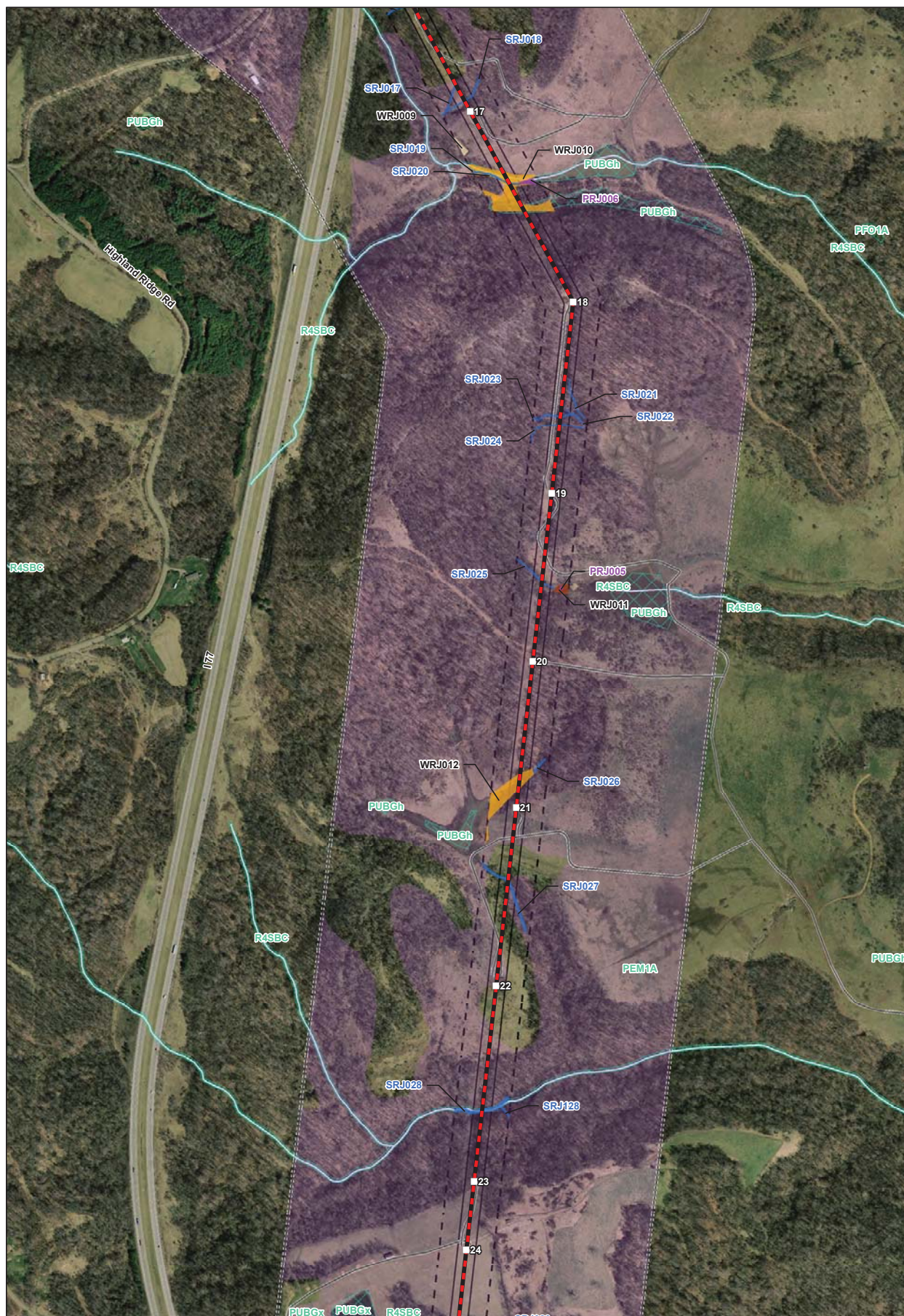
(E) ENVIRONMENTAL AND AVIATION REGULATION COMPLIANCE

Text provided in the March 3, 2017 Application filing remains unchanged.



<p>● Substation</p> <p>— Preferred Route</p> <p>— Alternate Route</p> <p>□ Figure Key</p>	<p>BASE MAP SOURCE: USGS 7.5-minute Topographic Quadrangles: Lower Salem, Macksburg, Marietta</p> <p>Coordinate System: State Plane Ohio South FIPS 3402 Feet Datum: NAD 1983</p> <p>May 02, 2019</p>	<p>LOCATOR MAP</p>	<p>FIGURE 8-1 OVERVIEW MAP</p> <p>Macksburg to Devola 138 kV Transmission Line Project</p> <p>0 1 2 Miles</p>
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LEGEND:		
	Pole Location	Soil Unit with Slope Exceeding 12 Percent
	Substation	Delineated Wetland
	Access Road	Palustrine Emergent (PEM)
	Right-of-Way	Palustrine Forested (PFO)
	Survey Corridor	Palustrine Scrub-Shrub (PSS)
	1,000-Foot Buffer	
		Delineated Stream
		Stream (NHD)
		Wetland (NWI)

SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 15, 2019



**FIGURE 8-2C
 PREFERRED ROUTE DELINEATED
 WETLAND AND WATERBODIES MAP**

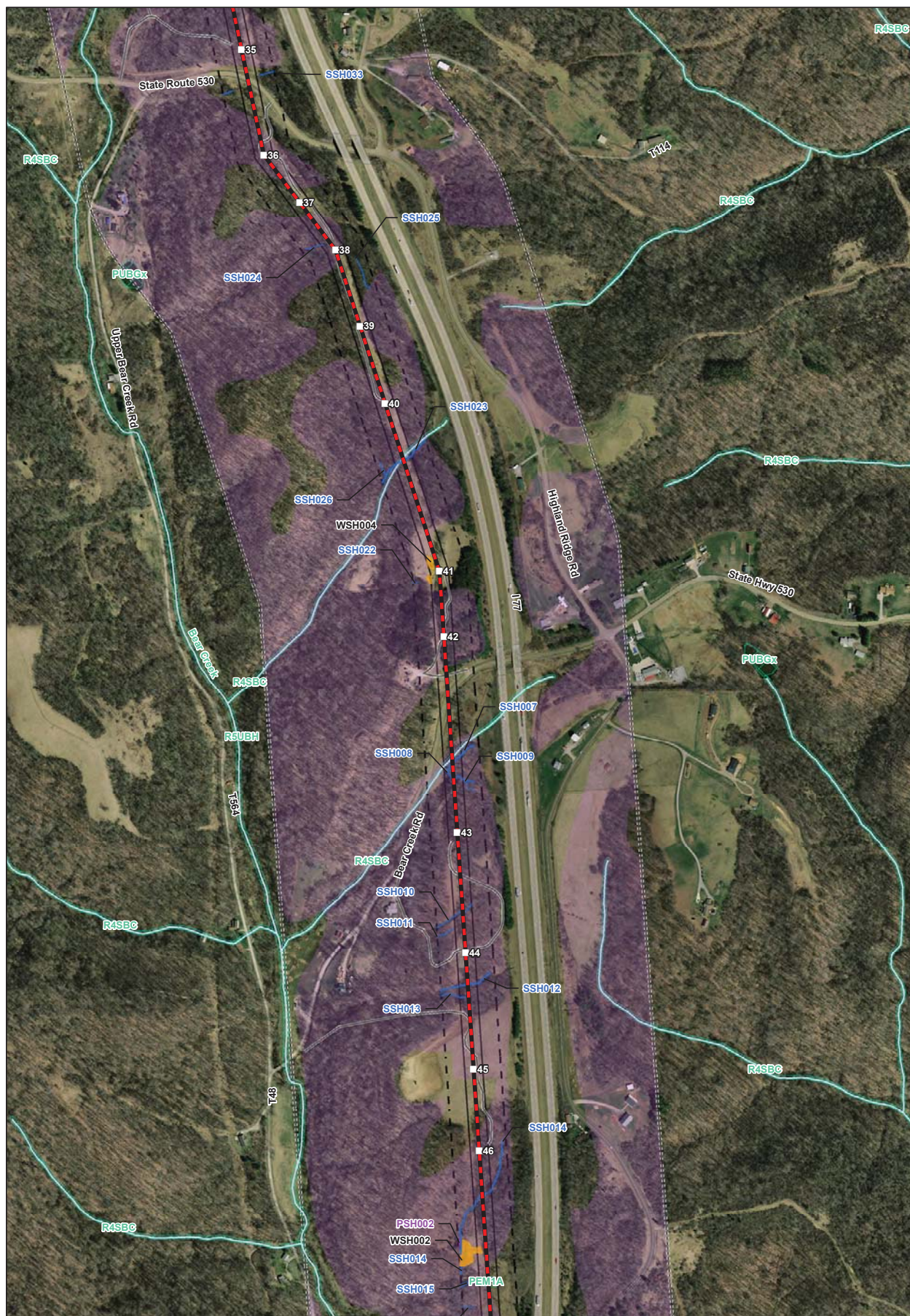
Macksburg to Devola 138 kV
 Transmission Line Project

0 300 600
 Feet



LEGEND: <div style="display: flex; justify-content: space-between;"> <div> <ul style="list-style-type: none"> Pole Location Substation Access Road Right-of-Way Survey Corridor 1,000-Foot Buffer </div> <div> <ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Pond Delineated Stream Stream (NHD) Wetland (NWI) </div> <div> Delineated Wetland <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS) </div> </div>		SOURCES Base Map: National Agricultural Imagery Program, 2014 NHD Streams: USGS, National Hydrology Dataset NWI Wetlands: USFWS, National Wetland Inventory Slope: USDA, NRCS, Soil Units > 12 Percent Coordinate System: State Plane Ohio South FIPS 3402 Feet Datum: NAD 1983	LOCATOR MAP 	FIGURE 8-2D PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP Macksburg to Devola 138 kV Transmission Line Project <div style="display: flex; align-items: center;"> <div style="flex: 1;"> 0 300 600 Feet </div> <div style="flex: 1;"> </div> </div>
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May 15, 2019



LEGEND:

Pole Location	Soil Unit with Slope Exceeding 12 Percent	Delineated Wetland
Substation	Delineated Pond	Palustrine Emergent (PEM)
Access Road	Delineated Stream	Palustrine Forested (PFO)
Right-of-Way	Stream (NHD)	Palustrine Scrub-Shrub (PSS)
Survey Corridor	Wetland (NWI)	
1,000-Foot Buffer		

SOURCES
Base Map: National Agricultural Imagery Program, 2014
NHD Streams: USGS, National Hydrology Dataset
NWI Wetlands: USFWS, National Wetland Inventory
Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 15, 2019

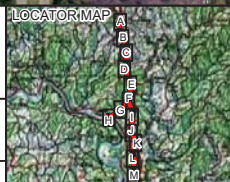
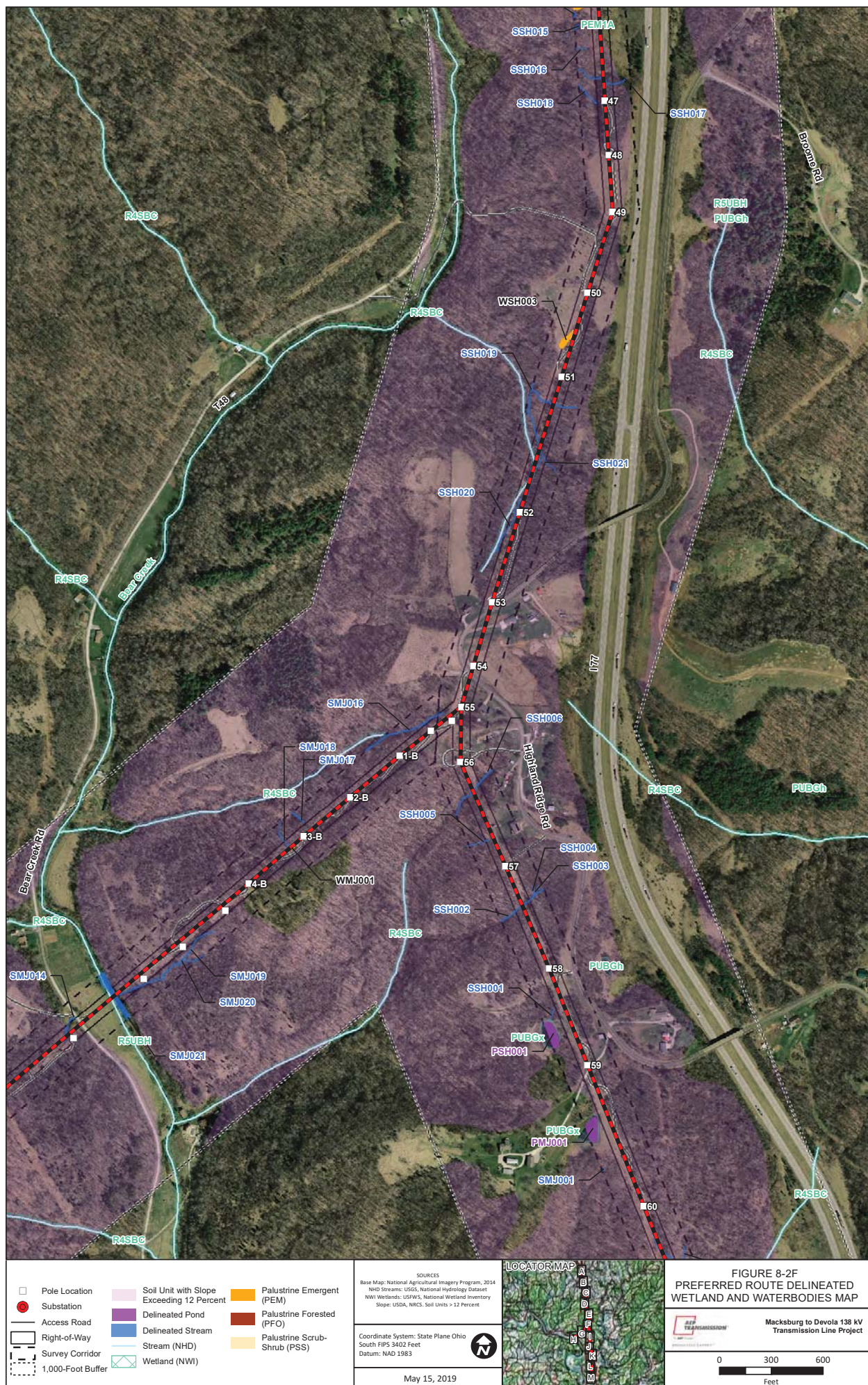
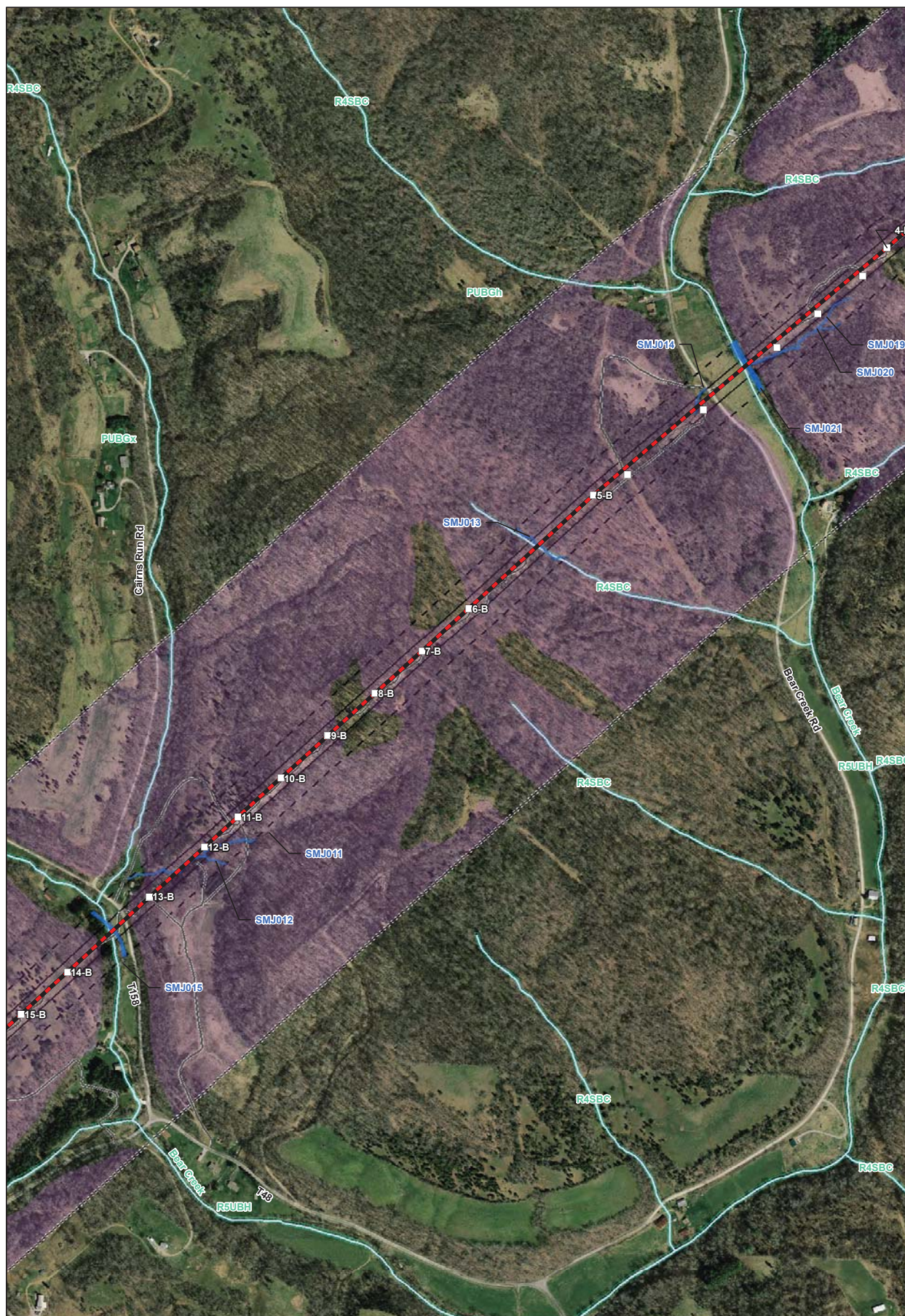


FIGURE 8-2E
PREFERRED ROUTE DELINEATED
WETLAND AND WATERBODIES MAP

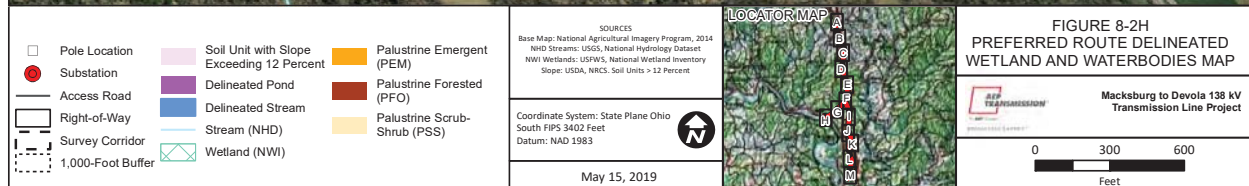
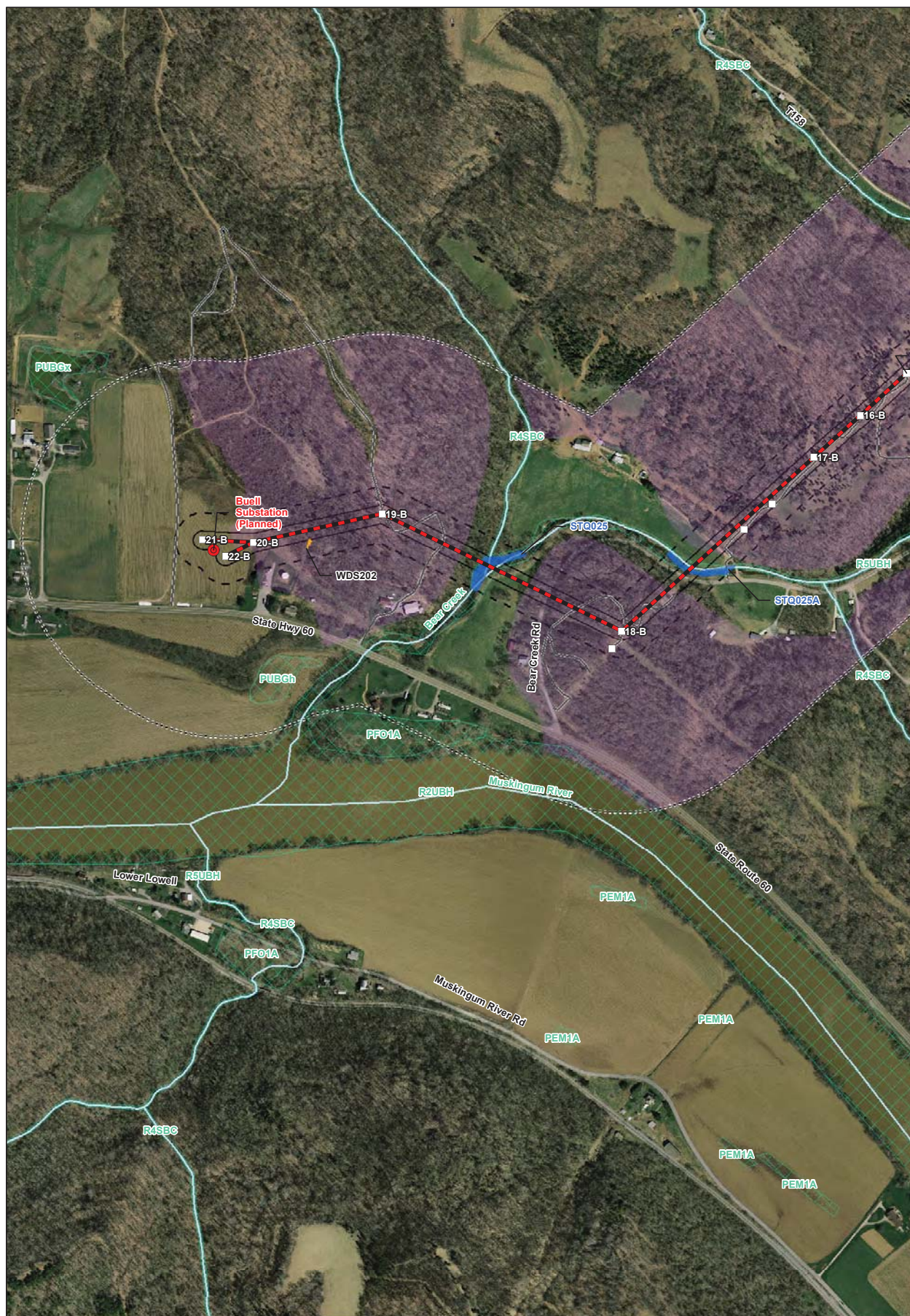
Macksburg to Devola 138 kV
Transmission Line Project

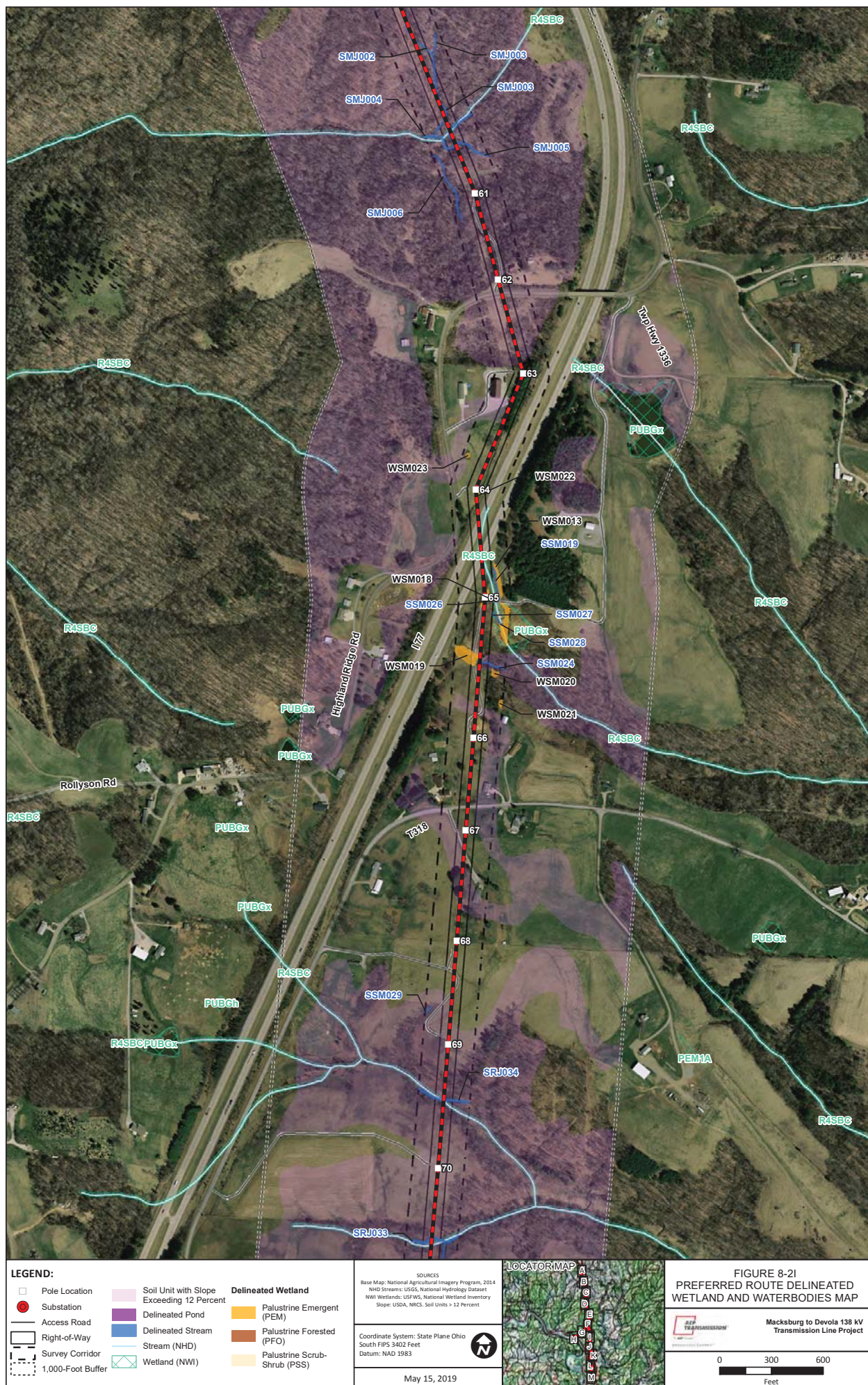
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Feet



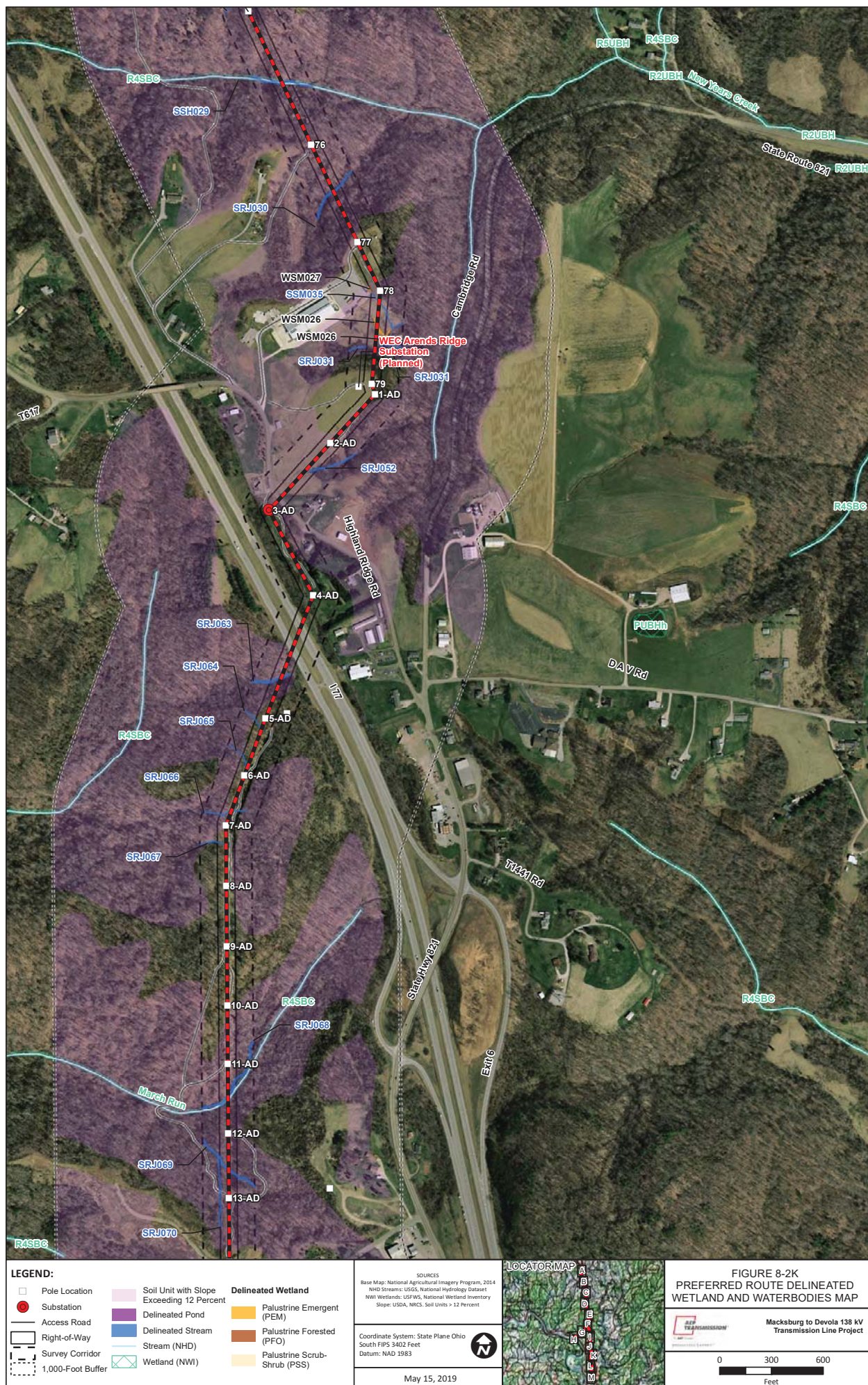


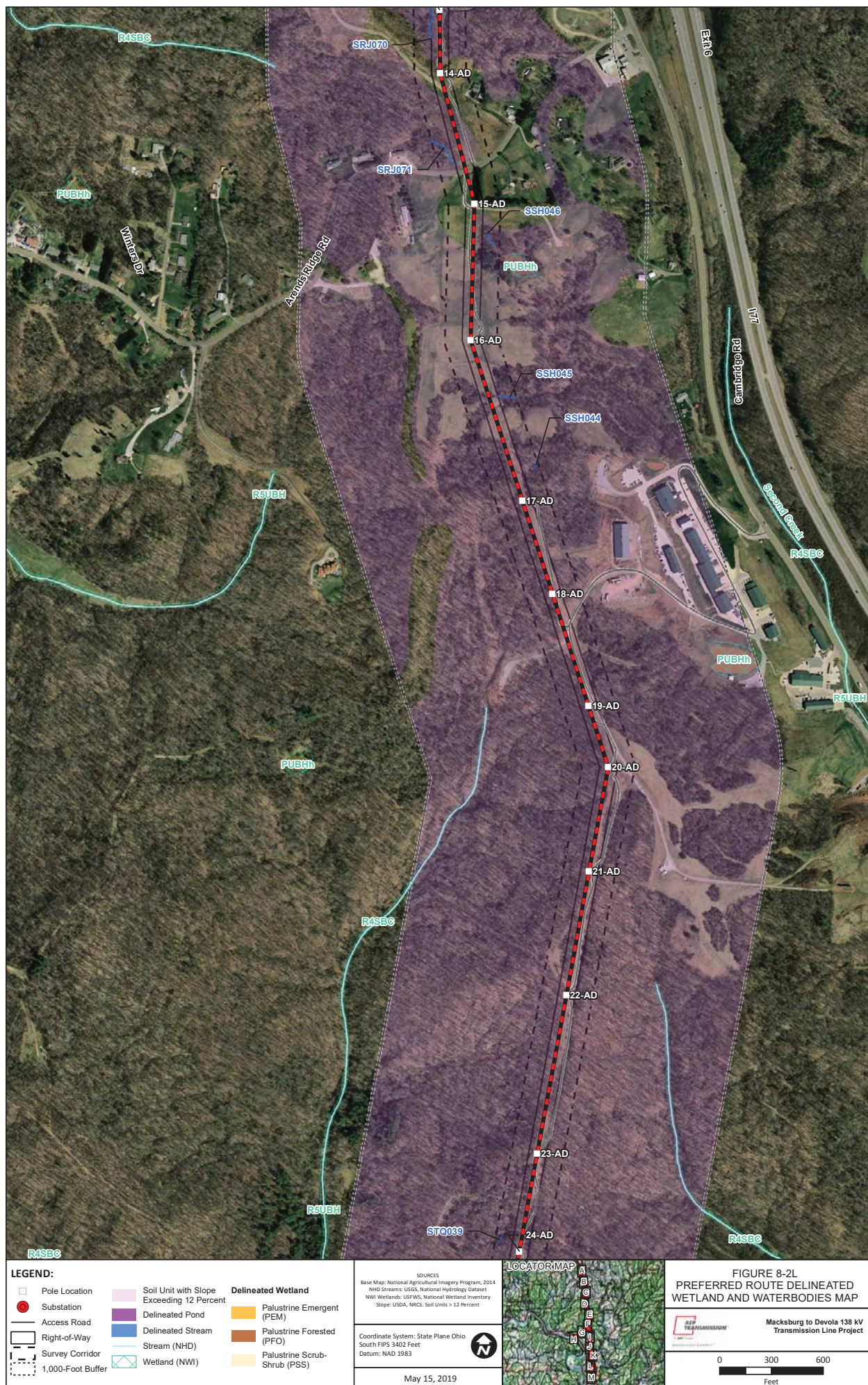
<ul style="list-style-type: none"> Pole Location Substation Access Road Right-of-Way Survey Corridor 1,000-Foot Buffer 	<ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Pond Delineated Stream Stream (NHD) Wetland (NWI) 	<ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS) 	<p>SOURCES</p> <p>Base Map: National Agricultural Imagery Program, 2014</p> <p>NHD Streams: USGS, National Hydrology Dataset</p> <p>NWI Wetlands: USFWS, National Wetland Inventory</p> <p>Slope: USDA, NRCS, Soil Units > 12 Percent</p> <p>Coordinate System: State Plane Ohio</p> <p>South FIPS 3402 Feet</p> <p>Datum: NAD 1983</p> <p>May 15, 2019</p>	<p>LOCATOR MAP</p>	<p>FIGURE 8-2G</p> <p>PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP</p> <p>Macksburg to Devola 138 kV Transmission Line Project</p> <p>0 300 600 Feet</p>
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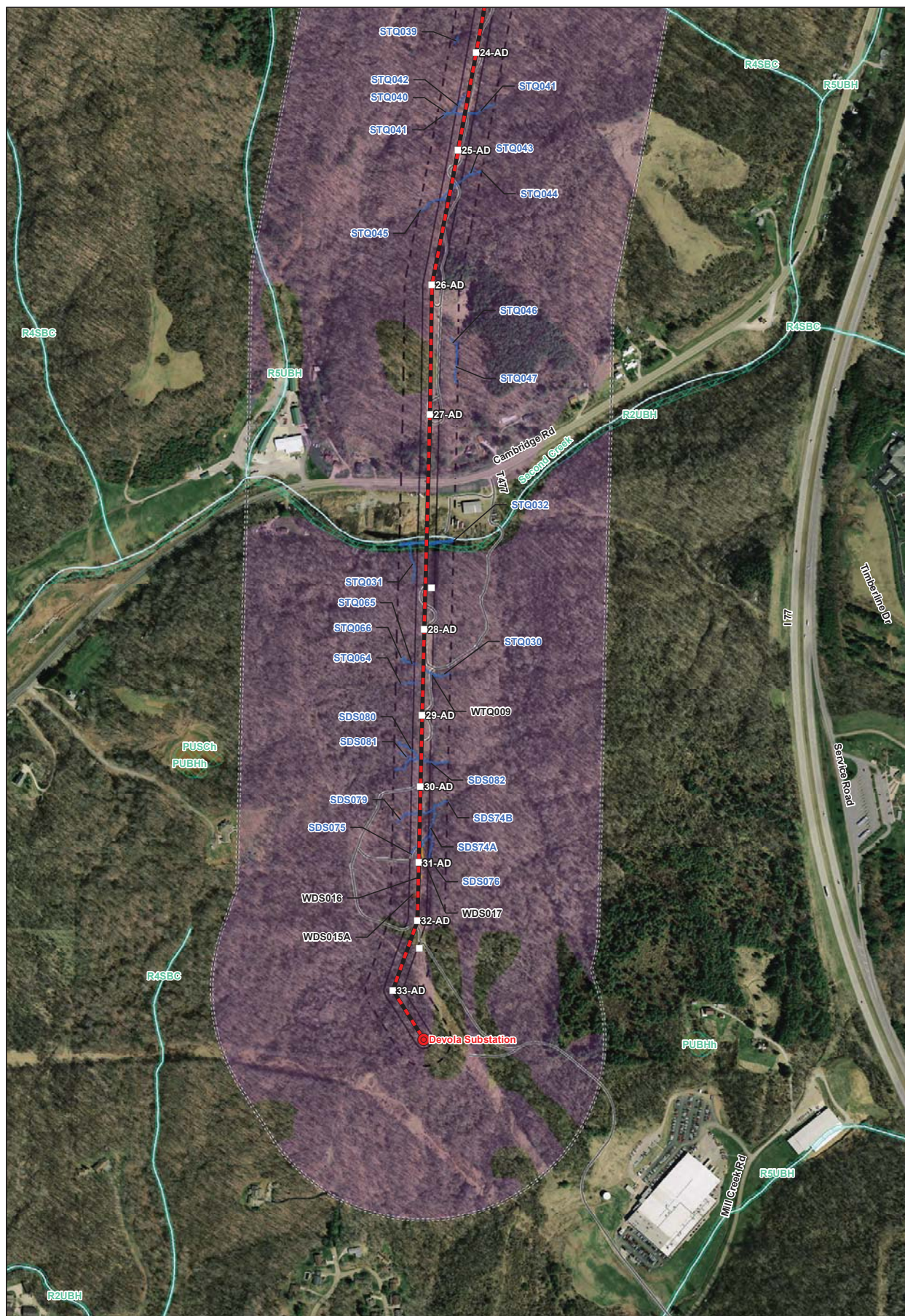






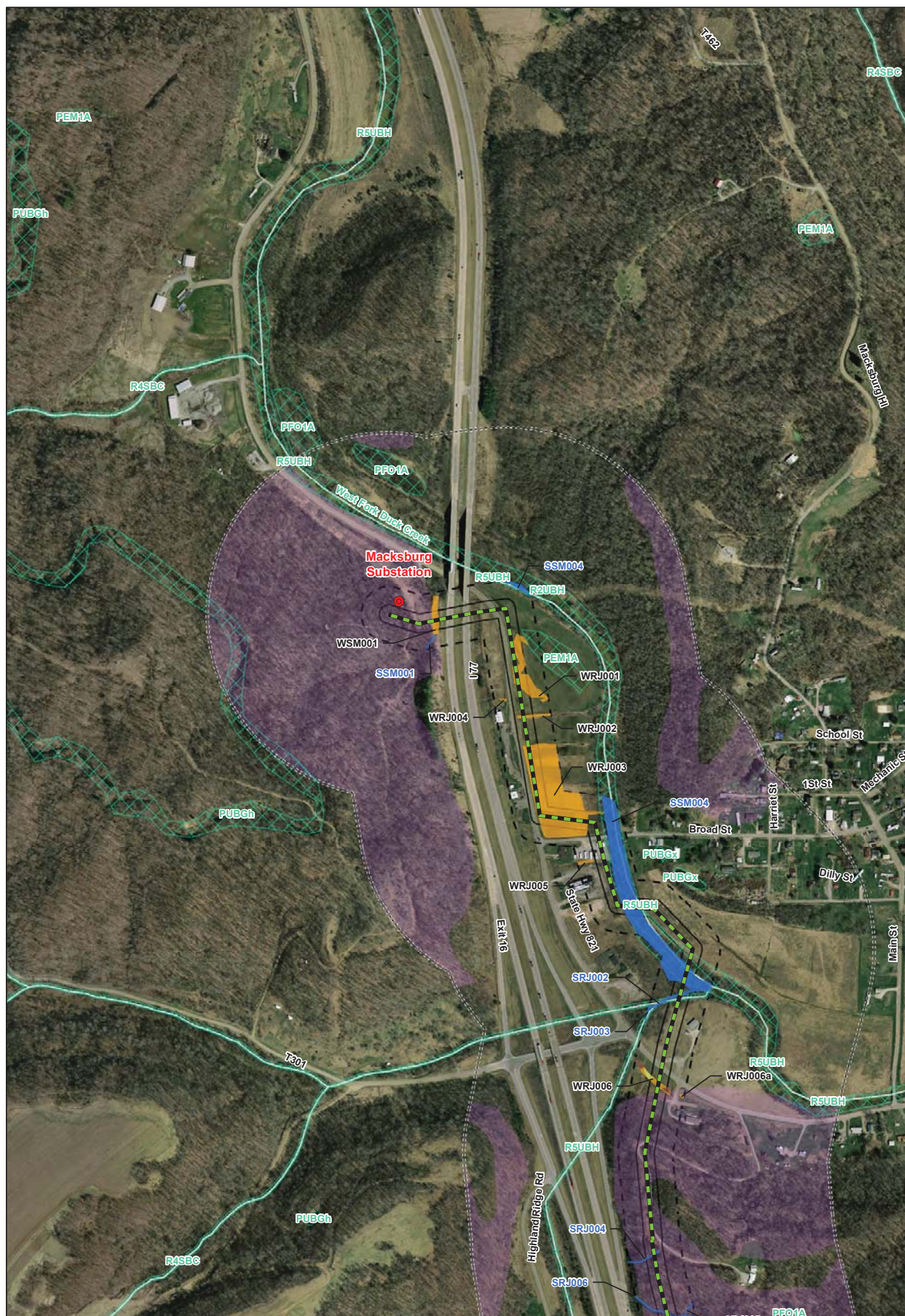






LEGEND: <ul style="list-style-type: none"> Pole Location Substation Access Road Right-of-Way Survey Corridor 1,000-Foot Buffer 		Soil Unit with Slope Exceeding 12 Percent <ul style="list-style-type: none"> Delineated Pond Delineated Stream Stream (NHD) Wetland (NWI) 	Delineated Wetland <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS) 	SOURCES Base Map: National Agricultural Imagery Program, 2014 NHD Streams: USGS, National Hydrology Dataset NWI Wetlands: USFWS, National Wetland Inventory Slope: USDA, NRCS, Soil Units > 12 Percent Coordinate System: State Plane Ohio South FIPS 3402 Feet Datum: NAD 1983	LOCATOR MAP 	FIGURE 8-2M PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP Macksburg to Devola 138 kV Transmission Line Project
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May 15, 2019



LEGEND:

<ul style="list-style-type: none"> Substation Alternate Route Right-of-Way Survey Corridor 1,000-Foot Buffer 	<ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Stream Delineated Pond Wetland (NWI) Stream (NHD) 	<p>Delineated Wetland</p> <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS)
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SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

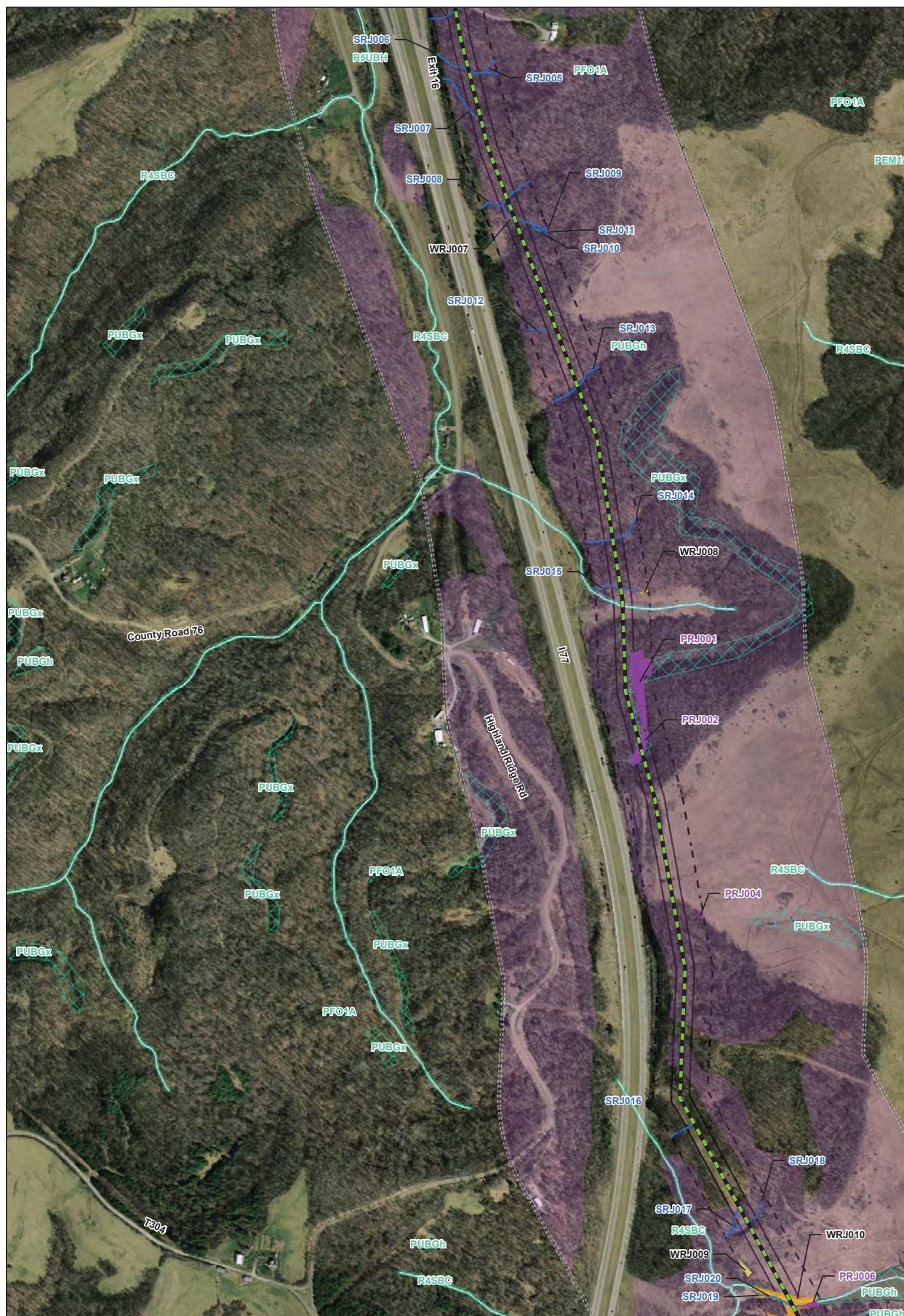
May 02, 2019



**FIGURE 8-3 A
 PREFERRED ROUTE DELINEATED
 WETLAND AND WATERBODIES MAP**

**Macksburg to Devola 138 kV
 Transmission Line Project**

0 300 600
 Feet



LEGEND:

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> Substation Alternate Route Right-of-Way Survey Corridor 1,000-Foot Buffer | <ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Stream Delineated Pond Wetland (NWI) Stream (NHD) | <p>Delineated Wetland</p> <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS) |
|---|--|---|

SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 02, 2019



FIGURE 8-3 B
PREFERRED ROUTE DELINEATED
WETLAND AND WATERBODIES MAP

Macksburg to Devola 138 kV
 Transmission Line Project

0 300 600
 Feet



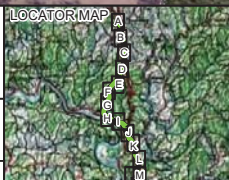
LEGEND:

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> ● Substation — Alternate Route — Right-of-Way — Survey Corridor — 1,000-Foot Buffer | <ul style="list-style-type: none"> ■ Soil Unit with Slope Exceeding 12 Percent ■ Delineated Stream ■ Delineated Pond ■ Wetland (NWI) — Stream (NHD) | <p>Delineated Wetland</p> <ul style="list-style-type: none"> ■ Palustrine Emergent (PEM) ■ Palustrine Forested (PFO) ■ Palustrine Scrub-Shrub (PSS) |
|--|--|--|

SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

Coordinate System: State Plane Ohio
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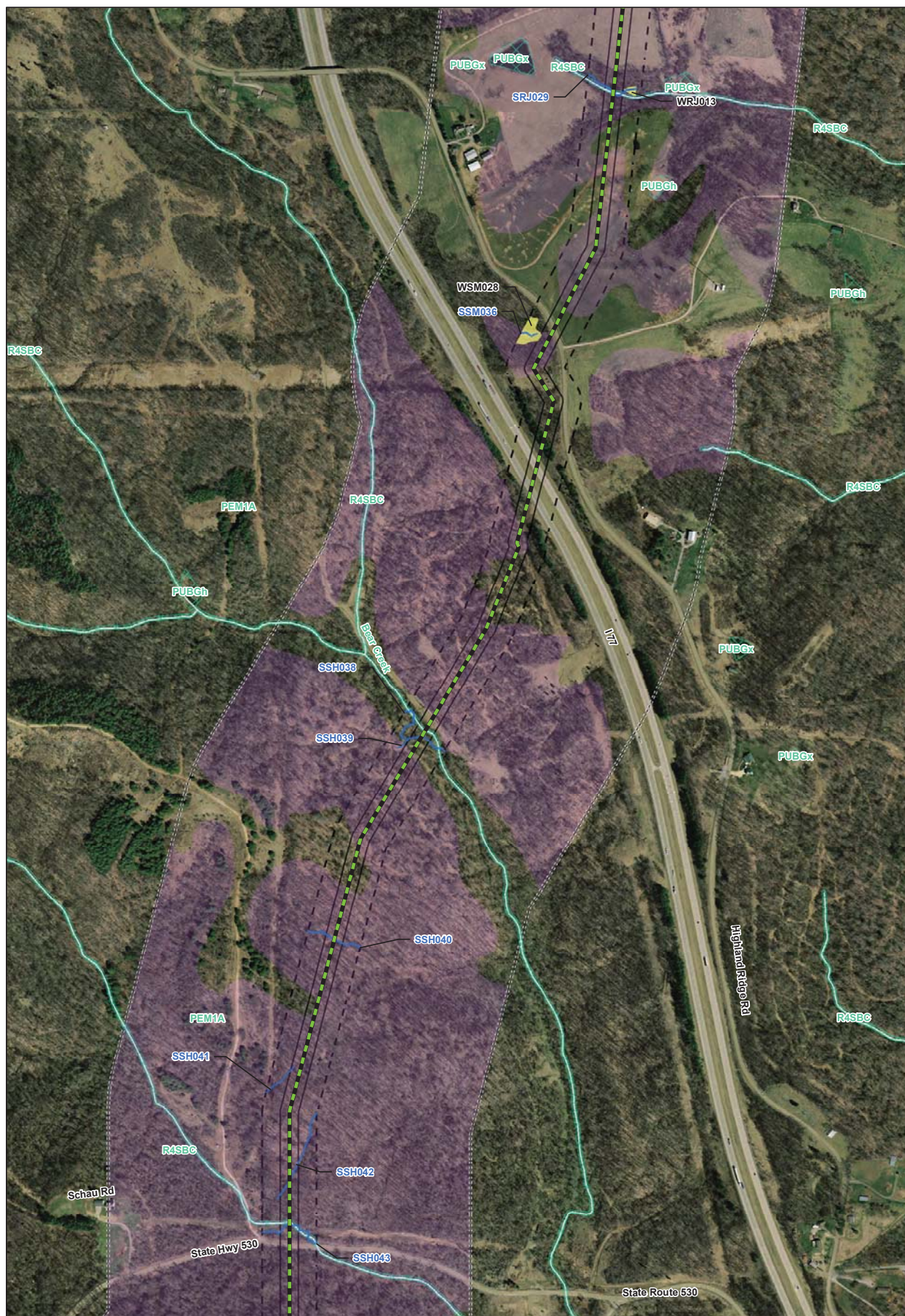
May 02, 2019



**FIGURE 8-3 C
 PREFERRED ROUTE DELINEATED
 WETLAND AND WATERBODIES MAP**

**Macksburg to Devola 138 kV
 Transmission Line Project**

0 300 600
 Feet



LEGEND:

<ul style="list-style-type: none"> Substation Alternate Route Right-of-Way Survey Corridor 1,000-Foot Buffer 	<ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Stream Delineated Pond Wetland (NWI) Stream (NHD) 	<p>Delineated Wetland</p> <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS)
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SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

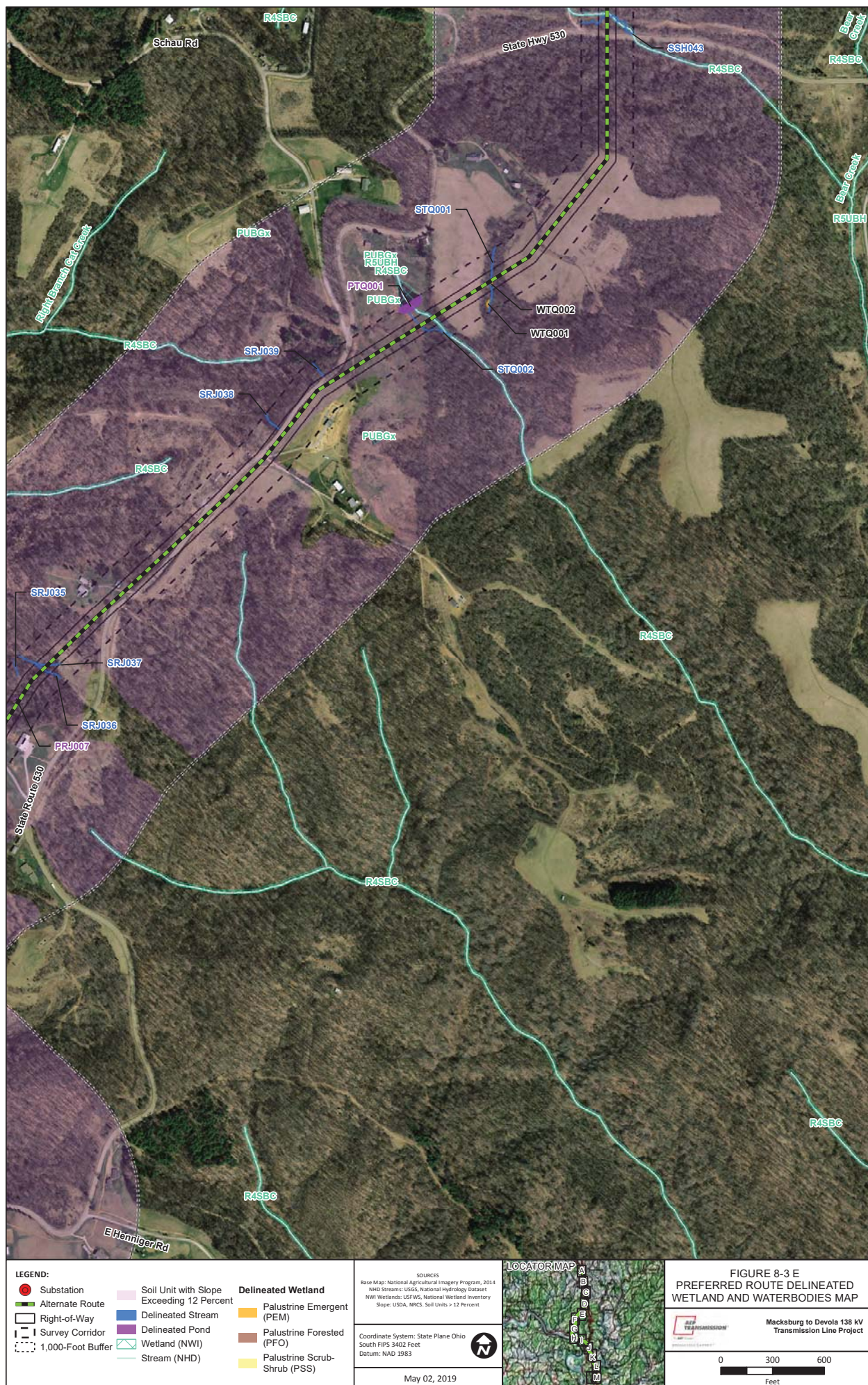
May 02, 2019

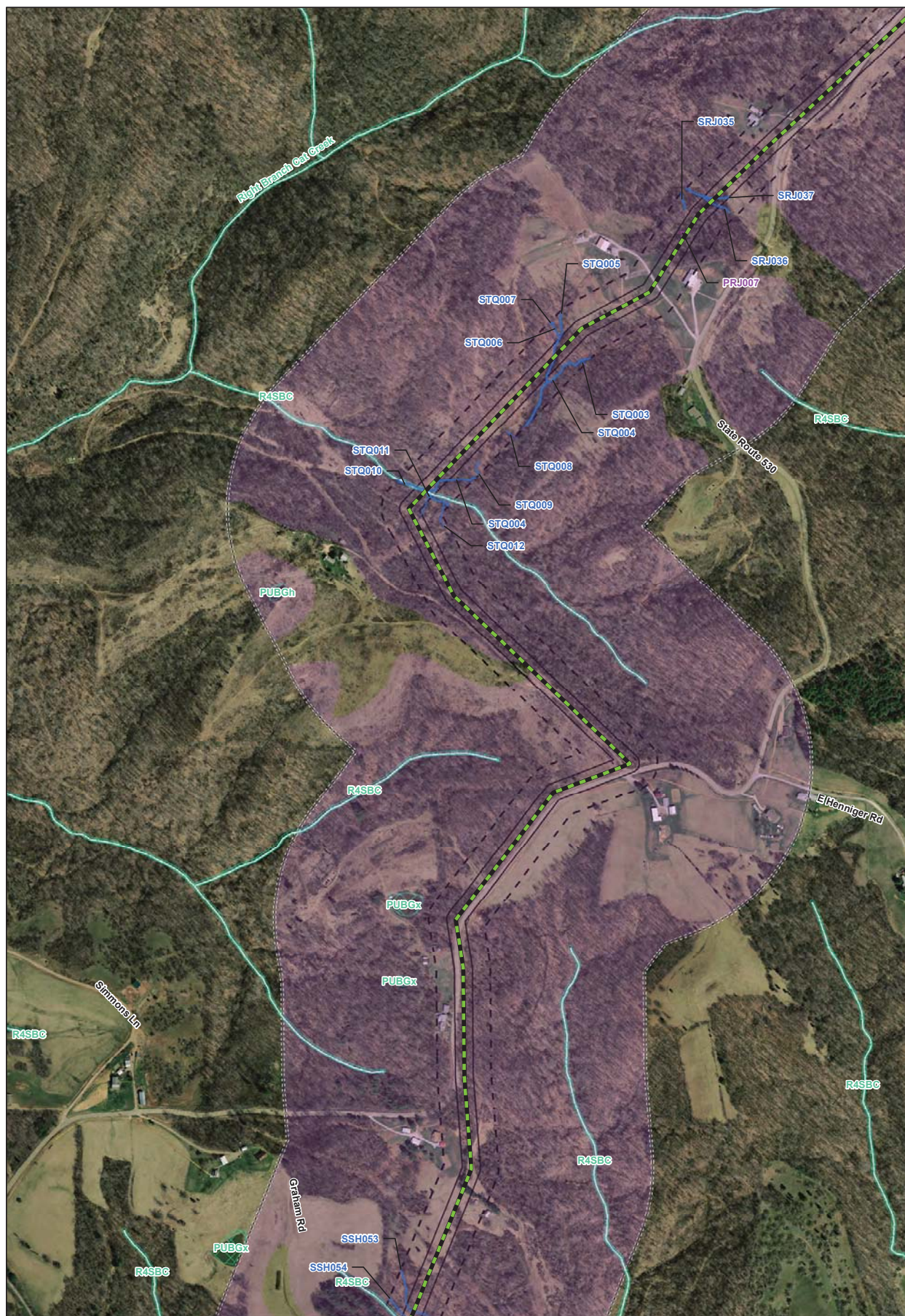


**FIGURE 8-3 D
 PREFERRED ROUTE DELINEATED
 WETLAND AND WATERBODIES MAP**

Macksburg to Devola 138 kV
 Transmission Line Project

0 300 600
 Feet





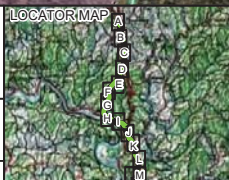
LEGEND:

Substation	Soil Unit with Slope Exceeding 12 Percent	Delineated Wetland
Alternate Route	Delineated Stream	Palustrine Emergent (PEM)
Right-of-Way	Delineated Pond	Palustrine Forested (PFO)
Survey Corridor	Wetland (NWI)	Palustrine Scrub-Shrub (PSS)
1,000-Foot Buffer	Stream (NHD)	

SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 02, 2019



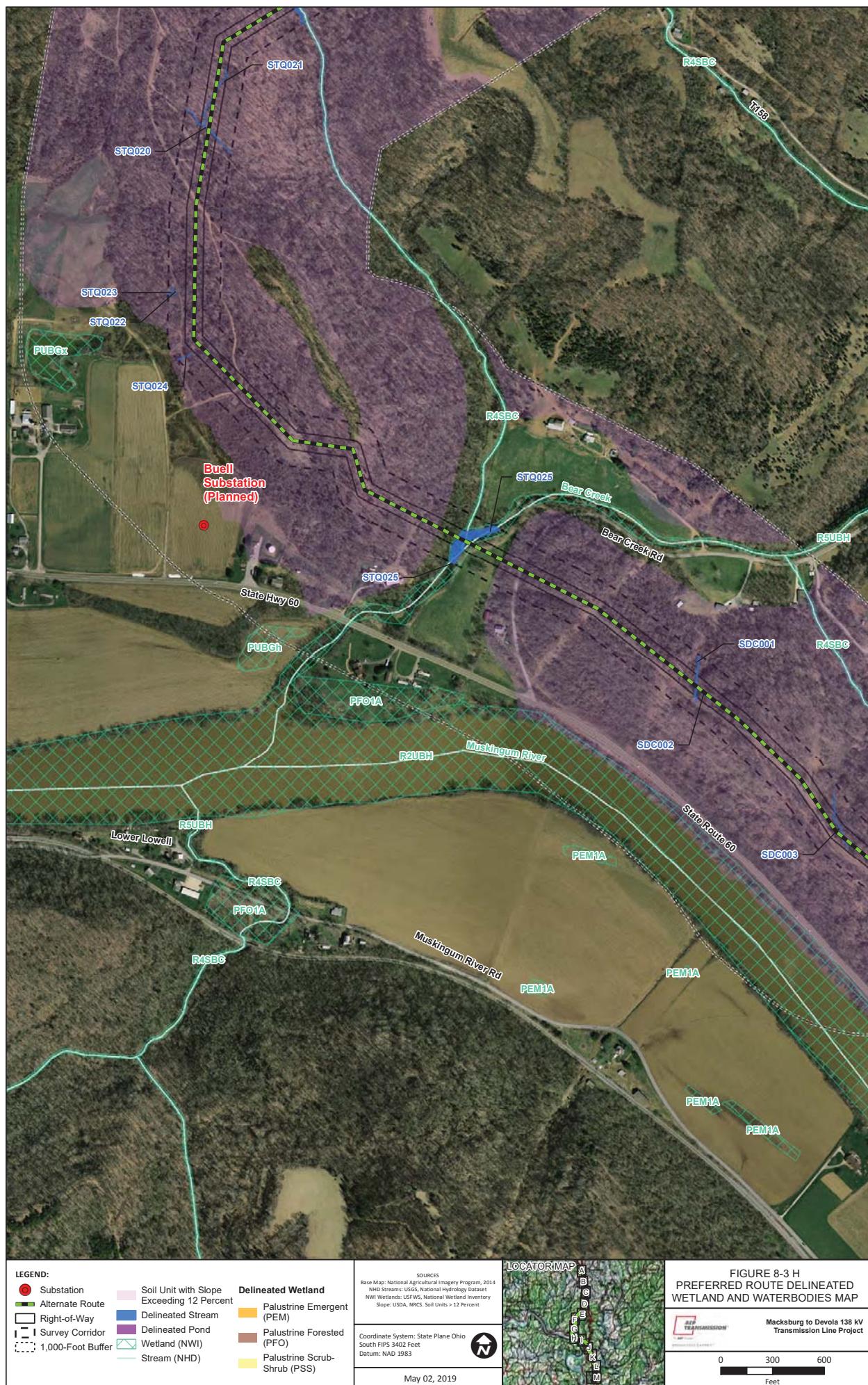
**FIGURE 8-3 F
 PREFERRED ROUTE DELINEATED
 WETLAND AND WATERBODIES MAP**

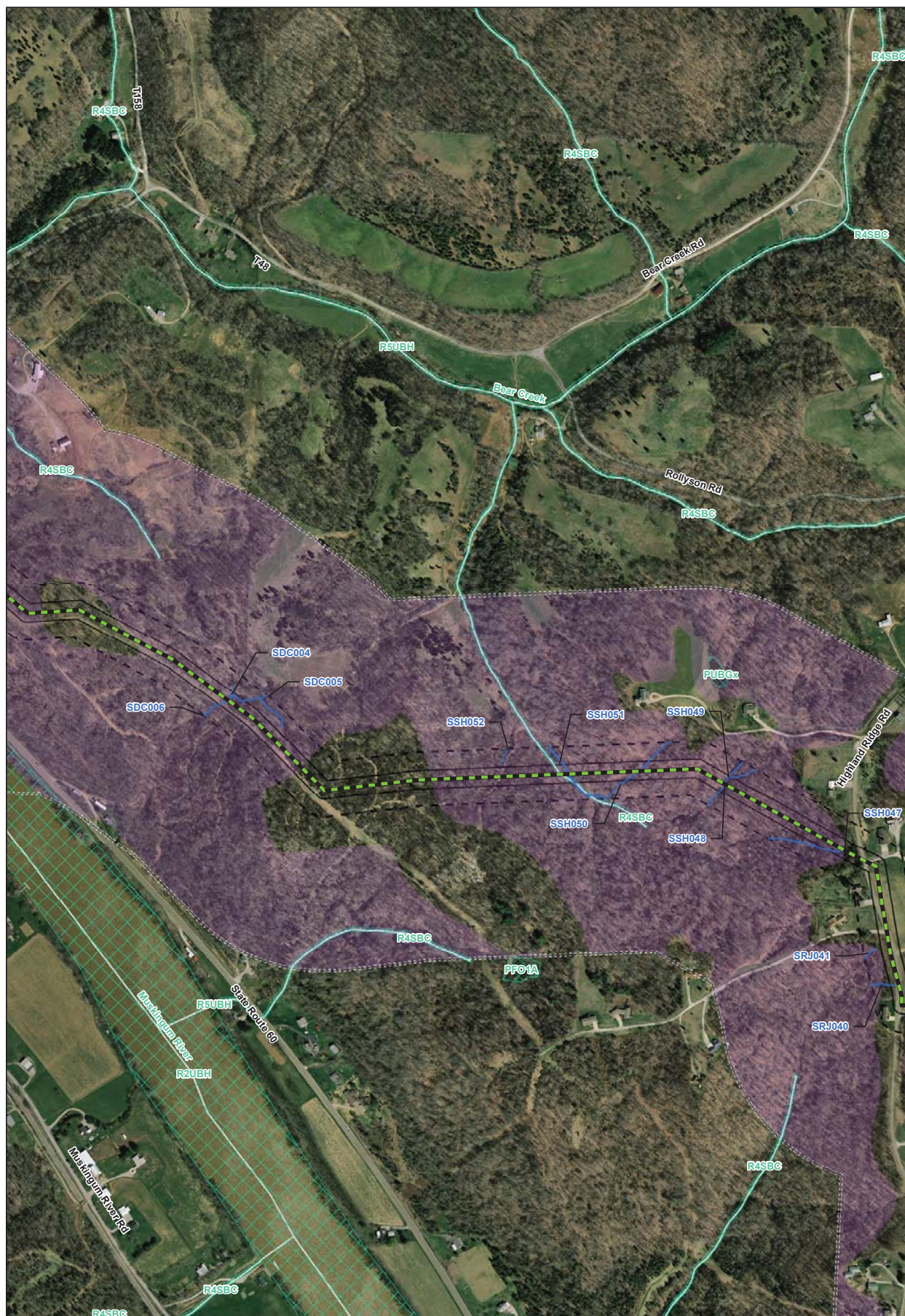
Macksburg to Devola 138 kV Transmission Line Project

0 300 600
 Feet



LEGEND: <ul style="list-style-type: none"> Substation Alternate Route Right-of-Way Survey Corridor 1,000-Foot Buffer Soil Unit with Slope Exceeding 12 Percent Delineated Stream Delineated Pond Wetland (NWI) Stream (NHD) 		Delineated Wetland <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS) 	SOURCES Base Map: National Agricultural Imagery Program, 2014 NHD Streams: USGS, National Hydrology Dataset NWI Wetlands: USFWS, National Wetland Inventory Slope: USDA, NRCS, Soil Units > 12 Percent Coordinate System: State Plane Ohio South FIPS 3402 Feet Datum: NAD 1983	LOCATOR MAP 	FIGURE 8-3 G PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP Macksburg to Devola 138 kV Transmission Line Project 0 300 600 Feet
			May 02, 2019		





LEGEND:

<ul style="list-style-type: none"> Substation Alternate Route Right-of-Way Survey Corridor 1,000-Foot Buffer 	<ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Stream Delineated Pond Wetland (NWI) Stream (NHD) 	<p>Delineated Wetland</p> <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS)
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SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 02, 2019

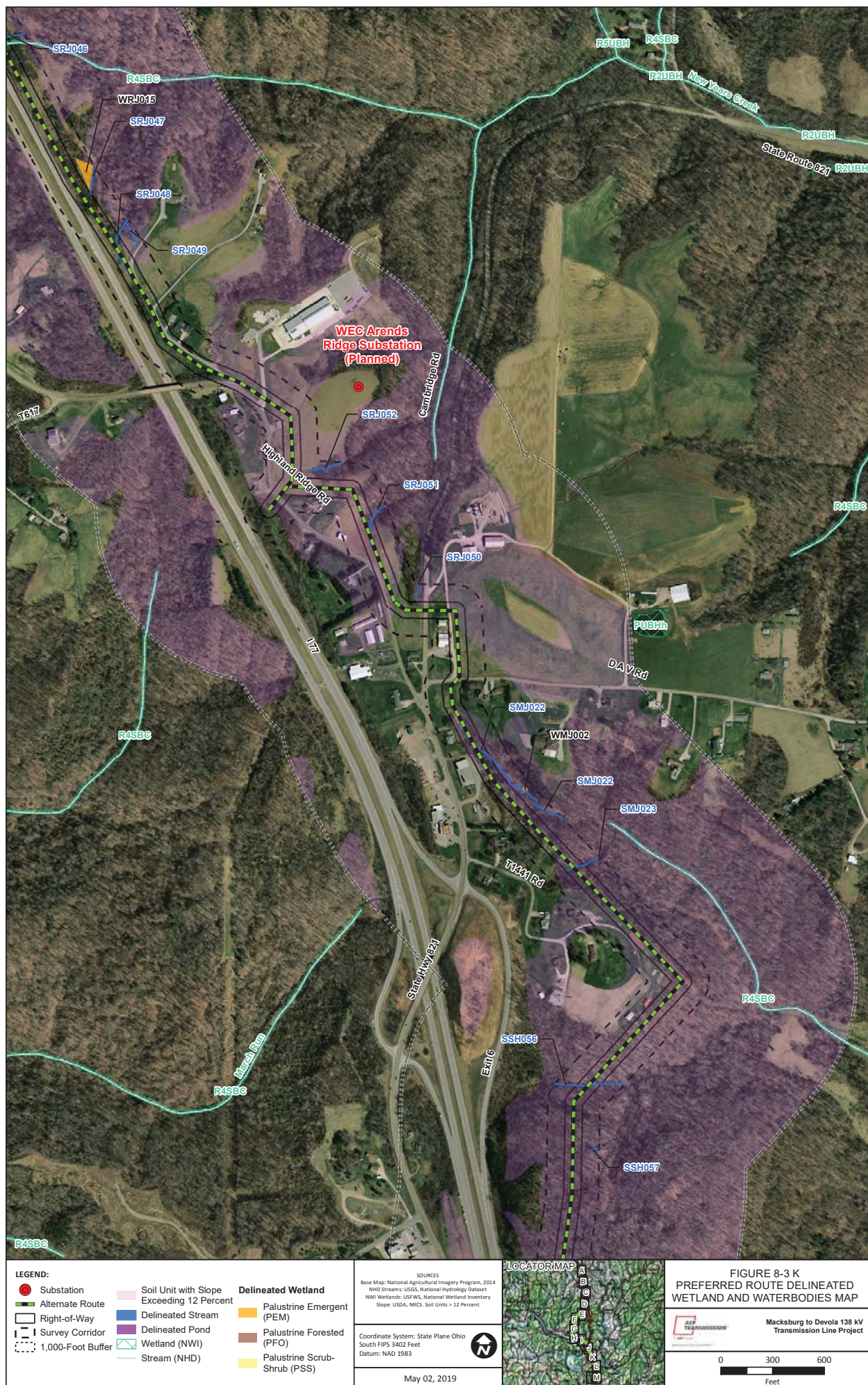


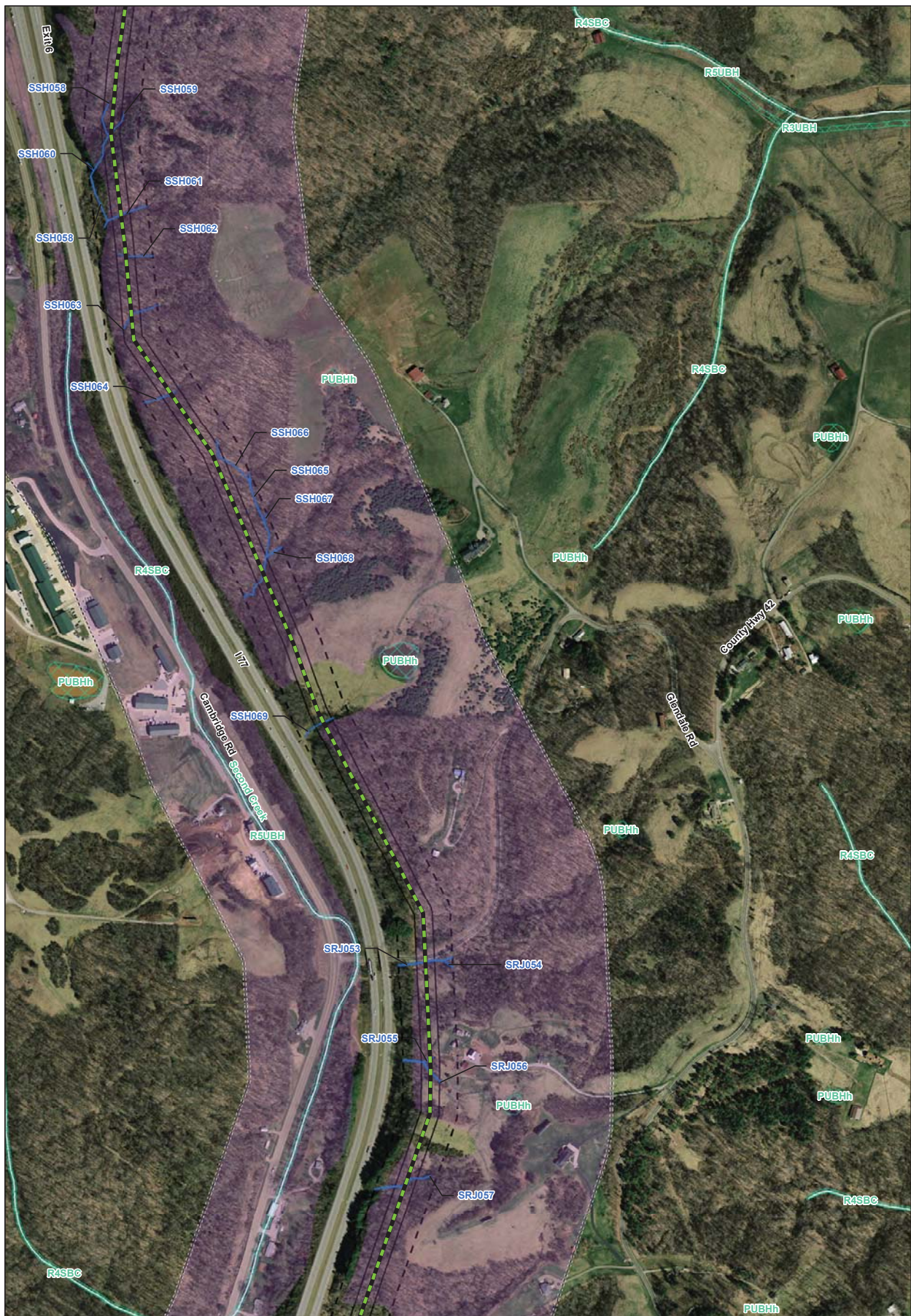
**FIGURE 8-3 I
 PREFERRED ROUTE DELINEATED
 WETLAND AND WATERBODIES MAP**

Macksburg to Devola 138 kV
 Transmission Line Project

0 300 600
 Feet







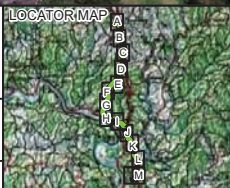
LEGEND:

- | | | |
|-------------------|---|------------------------------|
| Substation | Soil Unit with Slope Exceeding 12 Percent | Delineated Wetland |
| Alternate Route | Delineated Stream | Palustrine Emergent (PEM) |
| Right-of-Way | Delineated Pond | Palustrine Forested (PFO) |
| Survey Corridor | Wetland (NWI) | Palustrine Scrub-Shrub (PSS) |
| 1,000-Foot Buffer | Stream (NHD) | |

SOURCES
Base Map: National Agricultural Imagery Program, 2014
NHD Streams: USGS, National Hydrology Dataset
NWI Wetlands: USFWS, National Wetland Inventory
Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 02, 2019

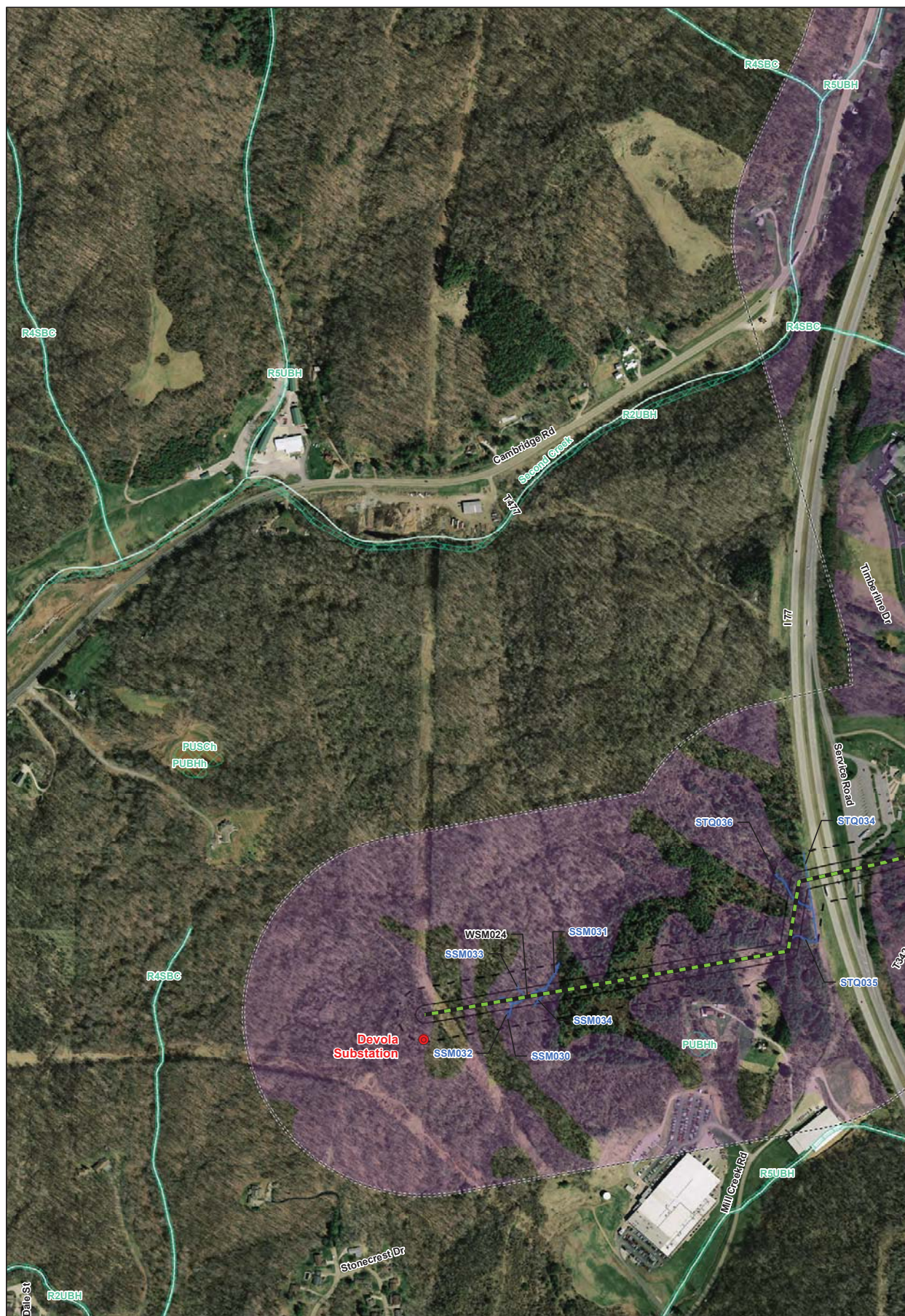


**FIGURE 8-3 L
PREFERRED ROUTE DELINEATED
WETLAND AND WATERBODIES MAP**

Macksburg to Devola 138 kV
Transmission Line Project

0 300 600
Feet





LEGEND:

<ul style="list-style-type: none"> Substation Alternate Route Right-of-Way Survey Corridor 1,000-Foot Buffer 	<ul style="list-style-type: none"> Soil Unit with Slope Exceeding 12 Percent Delineated Stream Delineated Pond Wetland (NWI) Stream (NHD) 	<p>Delineated Wetland</p> <ul style="list-style-type: none"> Palustrine Emergent (PEM) Palustrine Forested (PFO) Palustrine Scrub-Shrub (PSS)
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SOURCES
 Base Map: National Agricultural Imagery Program, 2014
 NHD Streams: USGS, National Hydrology Dataset
 NWI Wetlands: USFWS, National Wetland Inventory
 Slope: USDA, NRCS, Soil Units > 12 Percent

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

May 02, 2019



FIGURE 8-3 N
PREFERRED ROUTE DELINEATED WETLAND AND WATERBODIES MAP

Macksburg to Devola 138 kV Transmission Line Project

0 300 600 Feet

4906-5-09 REFERENCES

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