

**AMENDMENT TO THE APPLICATION TO THE
OHIO POWER SITING BOARD
FOR A CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED**

**OPSB CASE NO.
19-1435-EL-BTA**

**Dennison - Yager 138 kV
Transmission Line Rebuild Project
July 2019**

**American Electric Power
Ohio Transmission Company**



BEFORE THE OHIO POWER SITING BOARD
Application for Amendment to the Dennison-Yager
138 kV Transmission Line Rebuild Project
Table of Contents

Amendment Change Summary	1
4906-5-02 Project Summary and Applicant Information	2-1
(A) Project Summary and Facility Overview	2-1
(1) General Purpose of the Facility.....	2-1
(2) Facility Description	2-1
(3) Suitability of the Preferred and Alternate Routes.....	2-1
(4) Project Schedule Summary	2-2
(B) Applicant Information	2-2
4906-5-03 Review of Need and Schedule	3-1
(A) Justification of Need	3-1
(B) Regional Expansion Plans	3-1
(C) System Economy and Reliability	3-1
(D) Options to Eliminate the Need for the Proposed Project.....	3-1
(E) Facility Selection Rationale	3-1
(F) Facility Schedule	3-1
(1) Schedule Gantt Chart	3-1
(2) Delays	3-1
4906-5-04 Route Alternatives Analysis	4-1
4906-5-05 Project Description	5-1
(A) Description of Project Area.....	5-1
(1) Geography and Topography	5-1
(2) Transmission Acreage, Length, and Properties Crossed	5-1
(B) Layout and Construction	5-1
(C) Transmission Equipment.....	5-1
4906-5-06 Economic Impact and Public Interaction	6-1
4906-5-07 Health and Safety, Land Use, and Regional Development	7-1
(A) Health and Safety.....	7-1
(B) Land Use	7-1
(1) Proposed Routing Alignments and Existing Land Uses	7-1
(2) Impact of Construction.....	7-2
(3) Structures	7-2
(C) Agricultural Land Use and Districts	7-3
(D) Regional Land Use Plans.....	7-3
(E) Cultural Impacts of the Proposed Project	7-3
4906-05-08...Ecological Information and Compliance with Permitting Requirements	8-1
(A) Ecological Map.....	8-1
(B) Field Survey Report for Vegetation and Surface Waters	8-1
(1) Vegetative Communities, Wetlands, and Streams in Study Area	8-1
(2) Delineation Result Mapping	8-7
(3) Probable Impact of Construction on Vegetation, Surface Waters, and Wetlands	8-7

	(4) Probable Impact of Operation and Maintenance on Vegetation, Surface Waters, and Wetlands	8-8
	(5) Mitigation Procedures	8-8
(C)	Literature Survey of the Plant and Animal Life Potentially Affected by the Facility	8-8
(D)	Site Geology	8-8
	(1) Local Geology	8-8
	(2) Slopes and Soil Suitability for Foundation Construction	8-9
(E)	Environmental and Aviation Compliance Information	8-9

Tables

07-6	Summary of Land Use Factors of the Amended Preferred and Alternate Routes	7-2
08-1	Revised Delineated Wetlands within the Amended Preferred Route Survey Corridor.....	8-3
08-4	Revised Delineated Streams within Amended Preferred Route Survey Corridor.....	8-6

Figures

02-1	Revised Project Overview
03-1	Revised Project Schedule
04-1A	Revised Constraints Map
05-1	Revised Preferred and Alternate Routes Project Area
07-1A	Revised Agricultural Land Use in the Project Area
08-1B and 08-C	Revised Ecological Features (Amended Preferred Route ROW & Survey Corridor)

ACRONYMS

AEP Ohio Transco	AEP Ohio Transmission Company, Inc.
BMPs	Best Management Practices
GIS	Geographic information system
GPS	Global positioning system
HHEI	Headwater Habitat Evaluation Index
kV	Kilovolt
NRCS	National Resources Conservation Service of the U.S. Department of Agriculture
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OHI	Ohio Historic Inventory
OPSB	Ohio Power Siting Board
ORAM	Ohio Rapid Assessment Method
QHEI	Qualitative Habitat Evaluation Index
PEM	Palustrine Emergent
PFO	Palustrine Forested
PHWH	Primary Headwater Habitat
POW	Palustrine Open Water
PSS	Palustrine Scrub/Shrub
ROW	Right-of-way
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

AMENDMENT CHANGE SUMMARY

AEP Ohio Transmission Company, Inc. (“AEP Ohio Transco”) submitted a Certificate Application to the Ohio Power Siting Board (“OPSB”) on July 22, 2016 for the Dennison-Yager 138 kV Transmission Line Rebuild Project (“Project”) in Case No. 16-0534-EL-BTX. On May 4, 2017, the OPSB issued its Certificate of Environmental Compatibility and Public Need (“Certificate”) 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. Detailed engineering and environmental constraints resulted in a reroute to the Preferred Route. Specifically, the reroute was the result of safety and long-term maintenance concerns caused by certain topography on the western portion of the Preferred Route, the discovery of an injection well adjacent to the approved centerline, and an effort to reduce potential wetland impacts.

Exhibit 1: Adjustment Overview



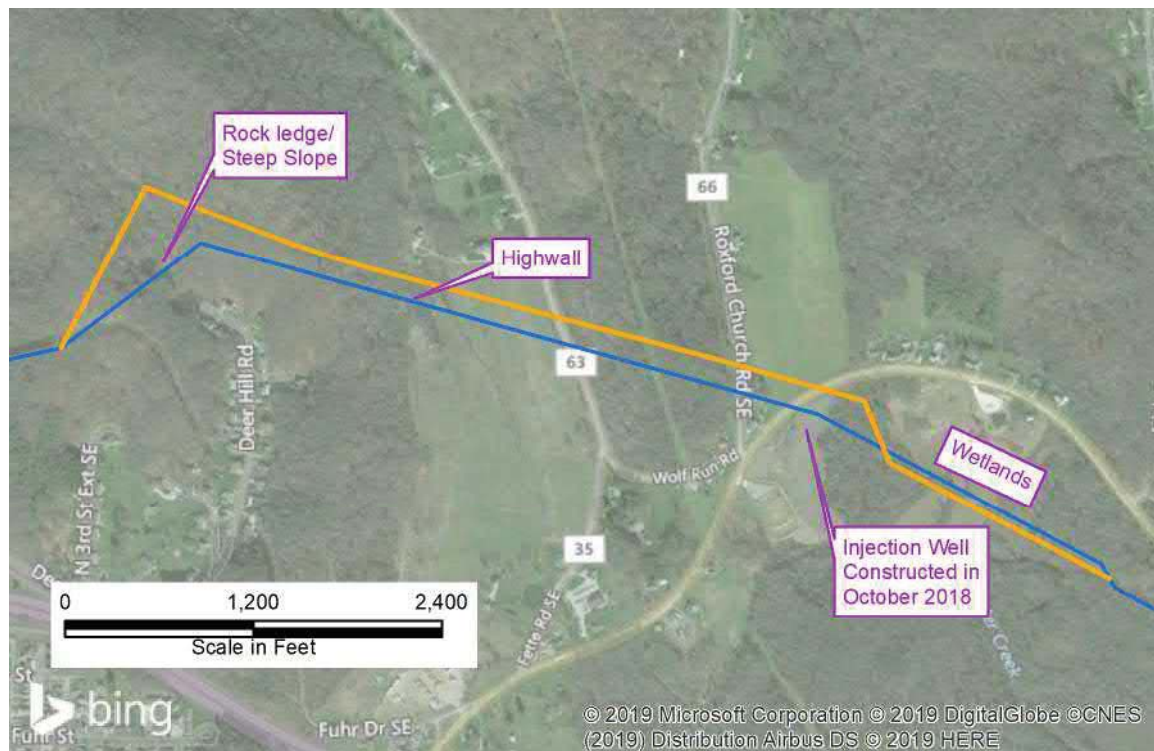
Difficult topography is prevalent throughout the western portion of the Preferred Route. Specifically, a rock ledge at the western end created a geotechnical challenge and safety hazard for access road construction and long-term maintenance access. The reroute offers an improved alignment that would provide greater safety for construction and long-term maintenance efforts.

In addition, during acquisition of easements and civil surveying, AEP Ohio Transco discovered an injection well application with the Ohio Department of Natural Resources (“ODNR”). The injection well is located just east of U.S. 250 and immediately adjacent to the approved centerline within the proposed right-of-way (“ROW”) as shown in Exhibit 2. In the interest of safety, AEP Ohio Transco shifted proposed structures 48 and 49 north to avoid the injection well.

Exhibit 2: Injection Well near Approved Route

As a result of the shifts caused by the rock ledge and injection well described above, AEP Ohio Transco shifted Structures 34-47 north of the original centerline to maintain the structures as tangent design structures, which require small diameter footprints compared to angle structures. These shifts were discussed with the landowners for concurrence.

Finally, continuing east from Structure 49 would result in crossing a large wetland complex. While the OPSB-approved route also crosses these wetlands, a more northerly crossing would result in additional wetland impacts. Therefore, the amended route turns to the southwest and parallels the OPSB-approved route to reduce wetland impacts.

Exhibit 3: Routing Difficulties

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

Text provided in the July 22, 2016 Application filing remains unchanged.

(1) General Purpose of the Facility

Text provided in the July 22, 2016 Application filing remains unchanged.

(2) Facility Description

Text provided in the July 22, 2016 Application filing remains unchanged. A revised project overview is provided in **Revised Figure 02-1**.

(3) Suitability of the Preferred and Alternate Routes

As described above, the purpose of the Project is to rebuild the existing Dennison-Yager portion of the Dennison-Desert Road line and in the process upgrade it to 138 kV design standards. To meet current 138 kV standards, however, the new line will require a wider 100-foot right-of-way ("ROW"), which may result in impacts to some areas due to adjacent development. AEP Ohio Transco's consultant sought to identify potential routing solutions that would have the least overall impacts to local land use and environmental and cultural resources, while avoiding non-standard design and construction requirements.

Two primary routes were considered for the Project. Both routes focus on rebuilding within the existing ROW, albeit to different extents. The Amended Preferred Route would be constructed primarily within the existing ROW offset by approximately 25 feet to allow for construction while the existing line remains in service. The Preferred Route also includes several deviations from the existing ROW to avoid houses and buildings that would otherwise fall within the newly expanded ROW. In contrast, the Alternate Route focuses exclusively on rebuilding the new line along the existing centerline. The Alternate Route maximizes the use of existing ROW, minimizes the need for additional ROW, but has greater impact on adjacent land uses. The Alternate Route would require a longer construction schedule due to the likely need for multiple phased construction outages to build the line without significant disruptions to the service area. Note, because the Preferred and Alternate Routes are both entirely within the existing transmission ROW for the majority of the length of the Project, the only portions of the Preferred Route considered for purposes of the 20% alternative threshold described in Ohio Administrative Code Section 4906-3-05 are those portions of the Preferred Route and the Alternate Route that are outside of the existing ROW.

The Preferred and Alternate Routes are equally suitable for the need of the Project, but differ with respect to their level of reuse of the existing ROW. As described above, the Preferred Route minimizes impacts to adjacent land use and allows for greater service reliability through

diversions and offset construction. The most prominent example of reduced potential impacts resulting from the selection of the Preferred Route over the Alternate Route is a reduction of buildings at risk of being demolished. No structures are expected to be removed as a result of selection of the Preferred Route. By comparison, ~~six~~ nine buildings would fall within a standard 100-foot ROW along the Alternate Route. Similarly, fewer residences are in close proximity to the Preferred Route. There are 2 residences identified within 100 feet and ~~502~~ 509 identified within 1,000 feet of the Preferred Route. This compares favorably to the 15 residences identified within 100 feet and 586 identified within 1,000 feet of the Alternate Route. However, construction along the centerline would maximize the use of the existing, already-impacted ROW.

(i) Preferred Route

Text provided in the July 22, 2016 Application filing remains unchanged.

(ii) Alternate Route

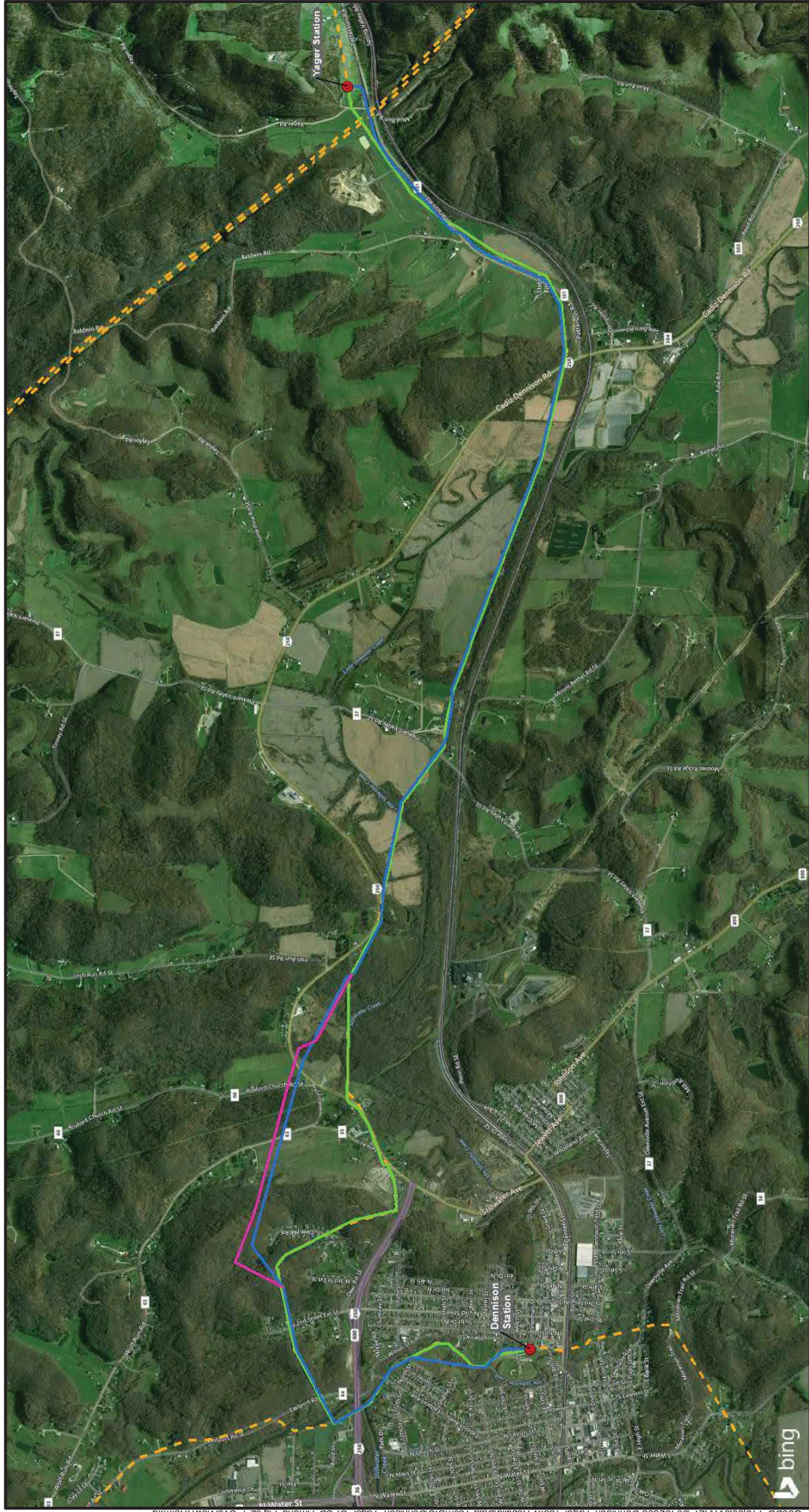
Text provided in the July 22, 2016 Application filing remains unchanged.

(4) Project Schedule Summary

AEP Ohio Transco ~~plans to start~~ began construction of the transmission line in ~~the spring of December~~ 2017, with an estimated in-service date in the ~~spring of 2018~~ fall of 2019. **Revised Figure 03-1** provides additional details regarding the proposed Project schedule.

(B) APPLICANT INFORMATION

Text provided in the July 22, 2016 Application filing remains unchanged.



Base Map Source:
ArcGIS Online, Bing Map Hybrid

- LEGEND:**
- Substation
 - Dennison-Yager Amended Preferred Reroute
 - Dennison-Yager Approved Route
 - Dennison-Yager Alternate Route
 - Existing Electric Line

4906-5-03 REVIEW OF NEED AND SCHEDULE**(A) JUSTIFICATION OF NEED**

Text provided in the July 22, 2016 Application filing remains unchanged.

(B) REGIONAL EXPANSION PLANS

Text provided in the July 22, 2016 Application filing remains unchanged.

(C) SYSTEM ECONOMY AND RELIABILITY

Text provided in the July 22, 2016 Application filing remains unchanged.

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

Text provided in the July 22, 2016 Application filing remains unchanged.

(E) FACILITY SELECTION RATIONALE

Text provided in the July 22, 2016 Application filing remains unchanged

(F) FACILITY SCHEDULE**(1) Schedule Gantt Chart**

The major scheduled activities associated with the Preferred and Alternate Sites are shown in bar chart form on **Revised Figure 03-1**.

(2) Delays

AEP Ohio Transco and PJM initially identified a December 2015 need date for the project. Since then, the in-service date has been rescheduled to account for the time required to complete real estate purchases, ROW acquisition, siting, and other requirements. Although the current in-service date for the Project is ~~summer 2018~~ fall 2019, AEP Ohio Transco requests prompt approval of the Project to avoid delays and mitigate the risk of thermal overloads and/or low voltage violations to the local area 69 kV system, and to facilitate coordination of construction activities, other area upgrades, and routine maintenance requiring outage windows in the area circuits. The limits on the existing 69 kV system have also constrained expansion plans for a customer (Access Midstream/Williams) near Leesville, Ohio.

Revised Figure 03-1
Amendment Project Schedule
Dennison-Yager 138 kV Transmission Line Rebuild Project

[illegible]

4906-5-04 ROUTE ALTERNATIVES ANALYSIS

Text provided in the July 22, 2016 Application filing remains unchanged. **Revised Figure 04-1A** provides a constraint map of the Amended Preferred Reroute.



LEGEND:

Substation	Park
Dennison-Yager Amended Preferred Route	Archaeological Site
Dennison-Yager Approved Route	Cemetery
Dennison-Yager Alternate Route	Previously Surveyed Phase 1 Area
1,000-foot Buffer of Routes	Soil Association
Existing Electric Line	Slope Exceeds 12%
Incorporated Place Boundary (city, village, town)	

Residence	School	Church	Hospital
Commercial	Outbuilding		
Industrial			

Scale: 0, 1,000, 2,000 Feet

Base Map Source:
ArcGIS Online, Bing Map Hybrid

North Arrow

OHIO TRANSMISSION COMPANY

Dennison-Yager 138 kV Line Rebuild Project

REVISED FIGURE 04-1A
CONSTRAINTS MAP

JOB NO. 60482505

AECOM

4906-5-05 PROJECT DESCRIPTION**(A) DESCRIPTION OF PROJECT AREA****(1) Geography and Topography**

Text provided in the July 22, 2016 Application filing remains unchanged. **Revised Figure 05-1** provides a map at 1:24,000-scale showing the Amended Preferred Route, Approved Route, and Alternate Route.

(2) Transmission Acreage, Length, and Properties Crossed

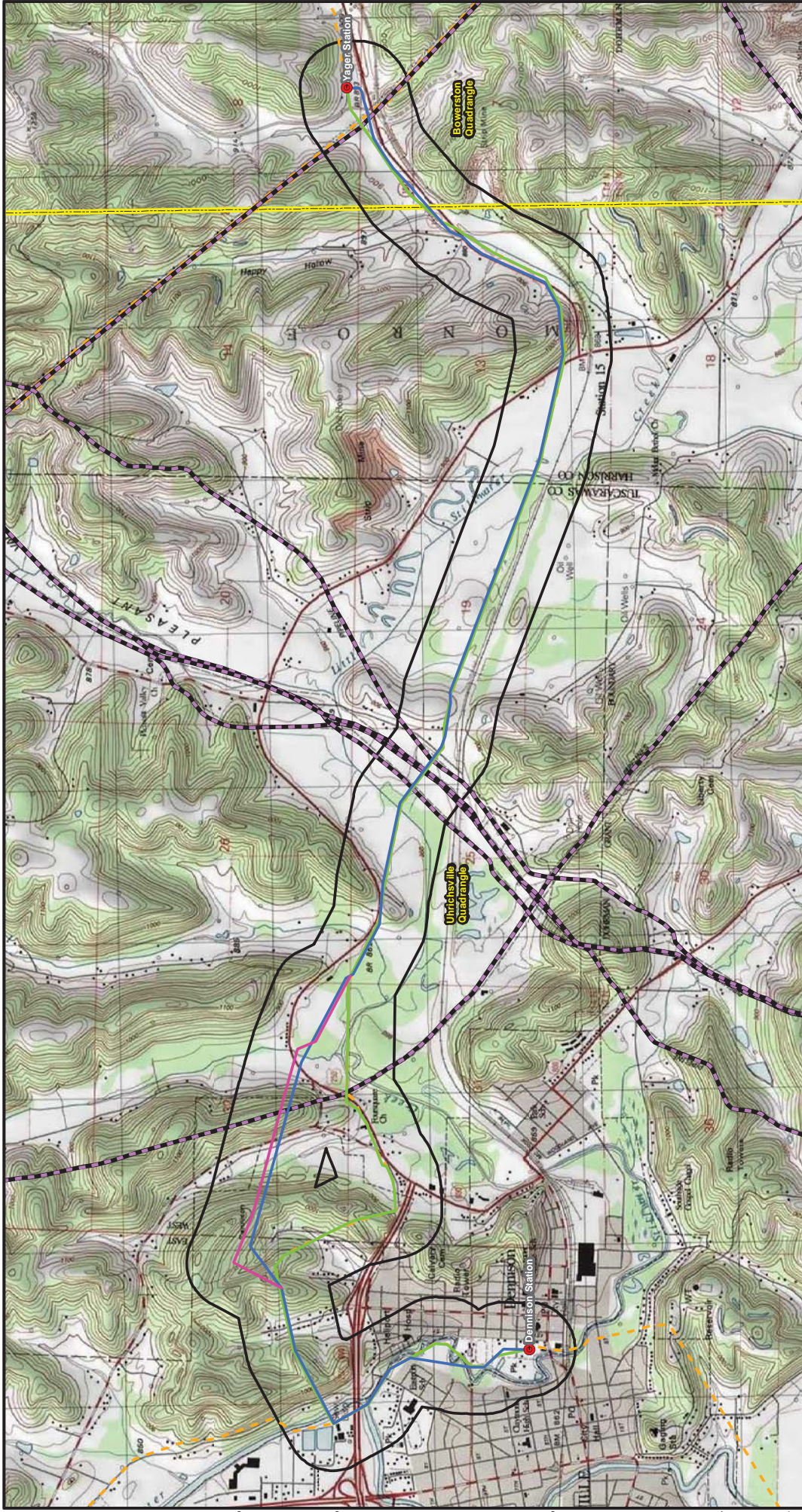
The Preferred Route is approximately 7.2 miles in length and crosses approximately ~~59~~ 62 parcels. The Alternate Route is approximately 7.4 miles in length and crosses approximately 76 parcels.

(B) LAYOUT AND CONSTRUCTION

Text provided in the July 22, 2016 Application filing remains unchanged.

(C) TRANSMISSION EQUIPMENT

Text provided in the July 22, 2016 Application filing remains unchanged.



LEGEND:

- Substation
- Dennison-Yager Amended Preferred Reroute
- Dennison-Yager Approved Route
- Dennison-Yager Alternate Route
- 1,000-foot Buffer of Routes
- Existing Electric Line
- Existing Natural Gas Pipeline
- USGS 7.5-minute Quadrangle

Scale: 0 2,000 4,000 Feet

Base Map Source:
ArcGIS Online, USA Topo Map

North Arrow

OHIO TRANSMISSION COMPANY

Dennison-Yager
138 kV Line Rebuild Project

REVISED FIGURE 05-1
PREFERRED AND ALTERNATE
ROUTES PROJECT AREA

ACOM

JOB NO. 60482505

4906-5-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

Text provided in the July 22, 2016 Application filing remains unchanged.

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

Text provided in the July 22, 2016 Application filing remains unchanged.

(B) LAND USE**(1) Proposed Routing Alignments and Existing Land Uses**

Maps at 1:12,000-scale, including the area 1,000 feet on either side of the Amended Preferred, Approved, and Alternate Routes are presented as **Revised Figure 04-1A** and **Figure 04-1B**. These maps include proposed and existing substations, land uses, road names, structures, and incorporated areas and population centers. Identified land use features are described below. **Revised Table 07-6** provides the existing land uses identified within 100 and 1,000 feet of the Preferred and Alternate Routes.

Residential: Residences were estimated based on review of aerial photography and county parcel data.

Preferred Route: There are ~~502~~ 509 residences identified within 1,000 feet of the Preferred Route, two of which are within 100 feet.

Alternate Route: There are 586 residences identified within 1,000 feet of the Alternate Route, 15 of which are within 100 feet.

Commercial: Text provided in the July 22, 2016 Application filing remains unchanged.

Industrial: Text provided in the July 22, 2016 Application filing remains unchanged.

Cultural: Text provided in the July 22, 2016 Application filing remains unchanged.

Agricultural: Text provided in the July 22, 2016 Application filing remains unchanged.

Recreational: Text provided in the July 22, 2016 Application filing remains unchanged.

Institutional: Text provided in the July 22, 2016 Application filing remains unchanged.

**REVISED TABLE 07-6
SUMMARY OF LAND USE FACTORS OF THE
AMENDED PREFERRED AND ALTERNATE ROUTES**

Route Alternatives		
	Preferred	Alternate
Length (miles)	7.1	7.4
% of Length in or Adjacent to Existing Roads Rights-of-way	13%	9%
% of Length in or Adjacent to Existing Transmission Line Rights-of-way	72%	98%
Features within 100 feet of Route Alternatives		
Threatened and Endangered Species	0	0
Previously Recorded Historic Structures (OHI)	0	0
Previously Recorded Archaeological Sites	0	0
National Register of Historic Places (NRHP) Sites	0	0
Residences	2	15
Other sensitive land uses*	3	3
Features within 1,000 feet of Route Alternatives		
Threatened and Endangered Species	0	0
Historic Structures (OHI)	0	0
Archaeological Sites	8	9
NRHP Sites	0	0
Residences	502 509	586
Other sensitive land uses*	11	13

* Other sensitive land uses include airports, parks, State forests, golf courses, schools, hospitals or clinics, churches, and cemeteries.

(2) Impact of Construction

Text provided in the July 22, 2016 Application filing remains unchanged.

(3) Structures

Text provided in the July 22, 2016 Application filing remains unchanged.

(a) Structures within 200 feet of Proposed ROW:

Preferred Route: ~~Ninety-nine~~~~Eighty-five~~ structures were identified within 200 feet of the proposed ROW of the Preferred Route, between ~~eight 57~~ and ~~498 250~~ feet away from the Preferred Route centerline. These structures include 44 ~~40~~ single-family residences, ~~two multi-family residences,~~ ~~55 41~~ outbuildings, one industrial building, and ~~two one~~ commercial buildings. None of these structures would be located within the ROW.

Alternate Route: Approximately 134 structures were identified within 200 feet of the proposed ROW of the Alternate Route, between 0 and 200 feet away. These structures include 59 single-family residences, 70 outbuildings, three commercial buildings, one industrial building, and one institutional building (Dennison Foursquare Church). Six of these structures, including two residences and four outbuildings, would be within a 100-foot ROW of the Alternate Route.

(b) Structures to be destroyed, acquired, or removed and owner compensation:

Text provided in the July 22, 2016 Application filing remains unchanged.

(c) Mitigation Procedures to minimize impact to structures near the facility:

Text provided in the July 22, 2016 Application filing remains unchanged.

(C) AGRICULTURAL LAND USE AND DISTRICTS

Text provided in the July 22, 2016 Application filing remains unchanged. **Revised Figure 07-1A** and **Figure 07-1B** show agricultural land along the Preferred Route.

(D) REGIONAL LAND USE PLANS

Text provided in the July 22, 2016 Application filing remains unchanged.

(E) CULTURAL IMPACTS OF THE PROPOSED PROJECT

Text provided in the July 22, 2016 Application filing remains unchanged.

4906-5-08 ECOLOGICAL INFORMATION AND COMPLIANCE WITH PERMITTING REQUIREMENTS**(A) ECOLOGICAL MAP**

A map at a scale of 1:24,000 illustrating areas within 1,000 feet of the Preferred and Alternate Routes is presented as **Revised Figure 05-1**. The proposed route alignments, including proposed turning points, are presented for the Preferred and Alternate Routes in **Revised Figure 05-1**.

More detailed maps at 1:12,000-scale depicting delineated features, survey corridor, lakes, ponds, reservoirs, highly erodible soils, slopes of 12 percent or greater, wildlife areas, nature preserves, conservations areas, and proposed ROW are provided as **Figures 08-1A through 08-1G, 8D through 08-1G, and Revised Figures 8B and 8C** for the Amended Preferred Route and **Figures 08-1H through 08-1N** for the Alternative Route.

(B) FIELD SURVEY REPORT FOR VEGETATION AND SURFACE WATERS

The ecological survey of both the Preferred and Alternate Routes, including the approximately 300-foot Field Survey Area, was conducted in the spring of 2016 by AEP Ohio Transco's consultant. Field surveys to capture changes to the Preferred Route were completed in January, July, and September 2018. The 2018 surveys also allowed updates to the previously delineated features. The purpose of the field survey was to assess whether wetlands and other "waters of the U.S." exist within the project survey corridors. During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter accurate Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy.

Prior to conducting field surveys, digital and published county Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and U.S. Geological Survey (USGS) 7.5-minute topographic maps were reviewed as an exercise to identify the occurrence and location of potential wetland areas.

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

(a) *Woody and Herbaceous Vegetation Land:* Woody and herbaceous vegetation were identified along the proposed routes during the field reconnaissance. The Preferred and Alternate Routes are bordered for portions of their lengths by old field, pasture, scrub-shrub, young to mature woodland forests, residential landscaped areas, stream/wetland areas, and urban areas. A variety of woody and herbaceous lands, as described below, are present within the proposed ROW of the Preferred and Alternate Routes. Habitat descriptions, applicable to both the Preferred and Alternate Routes, and details on the expected impacts of construction are provided below. Vegetated land cover can be seen visually from aerial photography provided on **Revised Figure 04-1A** and **Figure 04-1B**.

Old Field: Text provided in the July 22, 2016 Application filing remains unchanged.

Pasture: Pasture for cattle and hay fields were observed in various portions of the study area. Pasture areas within the study corridors and adjacent areas are frequently mowed and grazed areas of grasses and forbs. Approximately ~~37.0~~ 36.6 acres (~~43~~ 41%) of the Preferred Route and 33.8 acres (38%) of the Alternate Route contain pasture and hayfields.

Scrub-Shrub: Text provided in the July 22, 2016 Application filing remains unchanged.

Oak-Hickory and Successional Hardwood Woodlands: Oak-Hickory and successional mixed hardwood woodlands are present along the Preferred and Alternate Routes. Woody species dominating these areas included red oak (*Quercus rubra*), white oak (*Quercus alba*), sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), box elder (*Acer negundo*), American Beech (*Fagus grandifolia*), shagbark hickory (*Carya ovata*), and black walnut (*Juglans nigra*). The dominant shrub-layer species included spicebush (*Lindera benzoin*), poison ivy (*Toxicodendron radicans*), honeysuckle (*Lonicera japonica*), and blackberry (*Rubus occidentalis*). Approximately ~~24.2~~ 22.9 acres (~~25~~ 26%) of woodland forest are present along the Preferred Route. Approximately 12.8 acres (14%) of woodland forest are present along the Alternate Route. Based on the proposed 100-foot ROW for the Project, the acreages of forested areas listed above would be cleared during construction of the Preferred or Alternate Route.

Landscaped Areas: Text provided in the July 22, 2016 Application filing remains unchanged.

Streams and Wetlands: Text provided in the July 22, 2016 Application filing remains unchanged.

Urban: Text provided in the July 22, 2016 Application filing remains unchanged.

(b) Wetlands: Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytic) typically adapted for life in saturated (hydric) soil conditions.

To identify whether wetlands exist along the Preferred and Alternate Routes, wetland criteria, as established by United States Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (1987 Manual) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Regional Supplement)* were evaluated. A desktop study of available resources was reviewed prior to the field wetland delineation of the Project area. USFWS NWI maps and NRCS soil surveys and hydric soil lists for Tuscarawas County and Harrison County, Ohio were reviewed for areas within 1,000 feet of the Preferred and Alternate Routes. NWI areas are shown on **Figures 08-1A through ~~08-1N~~, 8D through 08-1G, and Revised Figures 8B and 8C** for the Amended Preferred Route.

The Ohio Rapid Assessment Method (ORAM) was developed to determine the relative ecological quality and level of disturbance of a particular wetland. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation

communities. Each of these subject areas is further divided into subcategories under ORAM v5.0, resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to 64.9. However, according to the Ohio Environmental Protection Agency (OEPA), if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower category (Mack 2001).

~~Forty-four~~ Forty-five wetlands were identified within the survey corridor along the Preferred Route, with a total of ~~21.35~~ 19.80 acres within the survey corridor and ~~7.05~~ 6.19 acres within the proposed ROW. ~~Twenty-three~~ Twenty-five of these wetlands are crossed by the Preferred Route centerline, for a total length of ~~2,968~~ 2,613 linear feet. ~~Forty-three~~ Forty-two wetlands were identified within the 300-foot survey corridor along the Alternate Route, with a total of ~~20.6~~ 20.16 acres within the survey corridor and ~~6.38~~ 7.07 acres within the proposed ROW. Fifteen of these wetlands are crossed by the Alternate Route centerline for a total length of 2,839 linear feet. Nine wetlands were identified within the 200-foot corridor of proposed access roads that extend beyond the Preferred and Alternate route survey areas, with a total of 2.04 acres. Two of these wetlands will be crossed by an access road using construction matting or other Best Management Practices (BMPs), which is further discussed in Section 4906-5-08(B)(3)(c). Representative photographs of wetlands identified during the field reconnaissance are included in **Appendix 08-1**. Corresponding USACE and ORAM forms completed during the wetland delineation are included in **Appendix 08-2**. Field delineated wetlands within the survey corridor are mapped on **Figures 08-1A through 08-1N, 8D through 08-1G, and Revised Figures 8B and 8C** for the Amended Preferred Reroute and are summarized in **Revised Table 08-1**.

**REVISED TABLE 08-1
DELINEATED WETLANDS WITHIN THE AMENDED
PREFERRED REROUTE SURVEY CORRIDOR**

Wetland Name	Route	Figure	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet) ^b	Acreage within Survey Corridor	Acreage within Proposed Maintained Right-of-way ^c
Wetland 22	Preferred	08-1C	PEM	27.0	Category 1	NC 2	0.04 0.01	0.00
Wetland 24a	Preferred	08-1C	PEM	31.5	Category 2	408 99	4.31 0.90	0.30 0.18
Wetland 25 24b	Alternate	08-1C	PFO/PSS PFO	59.0	Category 2	NC 171	0.39 1.27	0.00 0.39
Wetland 26a	Preferred	08-1C/D	PEM/ PFO	54.0	Category 2	554 119	4.85 1.02	4.42 0.48
Wetland 27 26b	Preferred	08-1C/D	PFO/PEM PEM	36.0 54.0	Category 2	NC 458	0.02 0.96	0.00 0.72

Cowardin Wetland Type^a: PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested, POW = palustrine open water

Linear Feet Crossed by Centerline (feet)^b: NC = Not Crossed by proposed centerline

Acreage within Proposed Maintained ROW^c: "0" indicates the wetland is not within proposed ROW

(c) **Streams and Drainage Channels:** Stream evaluations were conducted for the survey corridor of the Preferred Route, Alternate Route, and access roads. Representative photographs are provided in **Appendix 08-1**. Streams that drain areas greater than one square mile were assessed using the OEPA's Qualitative Habitat Evaluation Index (QHEI) method. Within the QHEI scoring convention, streams are classified based on their drainage area. QHEI streams that drain an area greater than 20 square miles are classified as "large streams", and streams that drain an area less than 20 square miles are classified as "headwater streams." QHEI-classified streams then receive a narrative rating based upon their score. The narrative rating gives a general indication of aquatic assemblages that may be found at any given site. Five narrative ratings scale the 100-point scoring system. Very poor streams have a QHEI score less than 30. Poor streams have a QHEI score between 30 and 42. Fair streams have a QHEI score between 43 and 54. Good streams have a QHEI score between 55 and 69. Streams that have a QHEI score greater than or equal to 70 are classified as excellent.

QHEI evaluations were conducted on nine streams in the survey corridor, with Wolf Run being the only stream that does not cross the Alternate Route. The evaluations were conducted at or near the proposed transmission line crossing of each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

Streams with a drainage basin less than one square mile were evaluated using the OEPA's Headwater Habitat Evaluation Index (HHEI) method. The HHEI is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. Headwater streams are typically considered to be first- and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessed areas result in a score (0 to 100) that is converted to a specific PHWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PHWH Streams", 30 to 69.9 are "Class 2 PHWH Streams", and 70 to 100 are "Class 3 PHWH Streams". There is flexibility and some "gray areas" in the scoring system; a stream can score relatively high, but actually belong in a lower class, and vice-versa. Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

HHEI evaluations were conducted on a total of ~~26~~19 streams in the survey corridors, with ~~24~~13 along the Preferred Route corridor and ~~22~~15 along the Alternate Route corridor. The evaluations were conducted at or near the proposed transmission line crossing of each stream.

Delineated streams for the Preferred Route are shown on **Figures 08-1A through ~~08-1N~~, 8D through 08-1G, and Revised Figures 8B and 8C**. Copies of the HHEI evaluation forms for the streams assessed within 100 feet of the routes are included in **Appendix 08-3**. **Revised Table 08-4 and Table 08-6** lists the attributes of each delineated stream within the Proposed Preferred Reroute and access road survey areas, including QHEI or HHEI score where appropriate, flow regime, bankfull width, stream length within the survey corridor, and stream length within the proposed maintained ROW, respectively.

~~Twenty-one~~ Twenty-two streams were identified within the survey corridor along the Preferred Route, with a total of ~~12,606~~ 12,865 linear feet within the survey corridor and ~~3,122~~ 3,031 linear feet within the proposed maintained ROW. Fourteen of these streams are crossed by the Preferred Route centerline.

Twenty-two streams were identified within the 300-foot survey corridor of the Alternate Route with a total of 16,852 linear feet within the survey corridor and 7,191 linear feet within the proposed maintained ROW. Sixteen of these streams are crossed by the Alternate Route centerline.

Four streams were identified within the 200-foot corridor along currently proposed access roads that extend beyond the Preferred and Alternate route survey areas, for a total of 2,252 linear feet. Two of these streams will be crossed using existing culverts, construction matting or other BMPs, which is further discussed in Section 4906-5-08(B)(3)(b).

REVISED TABLE 08-4
DELINEATED STREAMS WITHIN AMENDED PREFERRED REROUTE SURVEY CORRIDOR

Stream Report Name	Route	Figure	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form ^a	Score	Class/ Narrative Rating	Crossed by Centerline	Length (feet) within 300-foot Survey Corridor	Length (feet) within Proposed Maintained Right-of-way (100 feet) ^b
Stream 6	Preferred	08-1B	Ephemeral	2.5	1	HHEI	27.0	Modified Class 1	Yes	332 338	406 111
Stream 9	Preferred	08-1B/C	Intermittent	2	6	HHEI	43.0	Modified Class 2	Yes	398 337	424 109
Stream 12	Preferred	08-1C	Perennial	7	4	QHEI	35.0	Poor Warmwater	Yes	337 318	444 100
Stream 13	Preferred	08-1C	Intermittent	20	18	HHEI	62.0	Modified Class 2	NC	329	0
Stream 14	Preferred	08-1C	Intermittent	1.5	4	HHEI	32.0	Modified Class 2	NC	73 80	0 31

Form Used^a : QHEI = Qualitative Habitat Evaluation Index, HHEI = Headwater Habitat Evaluation Index

Linear Feet Crossed by Centerline (feet)^b : NC = Not Crossed by proposed centerline

Linear Feet within Proposed Maintained ROW^c : "0" indicates the stream is not within proposed ROW

(d) **Lakes, Ponds, and Reservoirs:** Text provided in the July 22, 2016 Application filing remains unchanged.

(2) **Delineation Result Mapping**

Field delineated streams and wetlands within the survey corridor and proposed ROW are mapped on **Figures 08-1A through ~~08-1N~~, 8D through 08-1G, and Revised Figures 8B and 8C** for the Preferred Route and **Figures 08-1H through 08-1N** for the Alternate Route and are summarized in **Revised Table 08-1 for the Preferred Reroute and Tables 08-2 through 08-6**, as discussed in Section 4906-5-08(B)(1).

(3) **Probable Impact of Construction on Vegetation, Surface Waters, and Wetlands**

(a) **Vegetation:** The potential impacts on woody and herbaceous vegetation along the Preferred and Alternate Routes will be limited to clearing within the proposed transmission line ROW and potentially along access roads. However where required, trees adjacent to the proposed transmission line 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. Construction impacts to agricultural land within the existing transmission ROW is expected to be temporary in nature and limited to vehicle access and temporary lay down activities.

Approximately 50 feet of clearing on either side of the centerline will be required to be maintained along either the Preferred or Alternate Route. Open areas were crossed when possible in the design of the facility. However, some forested areas will also need to be cleared. The Preferred Route will require approximately ~~21.2~~ 22.9 acres of forest clearing, and the Alternate Route will require approximately 12.8 acres of forest clearing.

Clearing of potential Indiana bat roost trees, if any, will be restricted to occur only within the period from October 1st through March 31st to avoid any potential impact to summer tree-roosting bats. All vegetative waste (such as tree limbs and trunks) which is generated during the construction phase will be wind-rowed or chipped and disposed of appropriately.

(b) **Streams:** Text provided in the July 22, 2016 Application filing remains unchanged.

(c) **Wetlands:** Wetlands identified during the ecological survey are described in **Revised Table 08-1 and Tables 08-1 through 08-3**. New transmission line structure locations were selected to avoid wetland areas to the extent practical. Disturbance of soils in wetland areas during construction will be minimized. No fill material is planned to be placed in any wetland area along the Preferred or Alternate Routes. Based on current design, it is anticipated that ~~42~~ 13 structures will be placed in wetlands along the Preferred Route. The structures will be placed within eight separate wetlands that include Wetlands ~~2, 3, 26, 32, 34, 36, 39a, 2b, 24a, 24b, 26a, 26b, 36a, 39a, and 44a~~. These areas contain existing single pole structures supporting the 69 kV line. Engineering constraints in the area eliminate the ability to avoid placing poles in the wetland without a major re-route that would likely require clearing new right-of-way where none currently

exists. Where pole locations are within a wetland, they will be accessed using construction matting. No excavation other than the boring of a hole will be performed within the wetland. No permanent fill will be placed in the wetlands. Wetland areas will be clearly staked prior to the commencement of any clearing in order to minimize incidental vehicle impacts. Other than the pole locations discussed, operation of heavy mechanized equipment is not planned within any identified wetland areas, although some construction equipment will need to cross wetland areas. Woody vegetation in wetlands will be hand-cut by chain saws, hydro-axes, or other non-mechanized techniques. When necessary, rubber-wheeled vehicles or vehicles equipped with go tracks will be used to remove vegetation debris.

Construction access for clearing activities and installing the transmission line poles has been planned to minimize wetland crossings to the extent practical. Construction matting and other best management practices will be deployed to minimize these temporary disturbances, where found to be necessary. Where available, existing and regularly maintained access paths will be utilized during construction to minimize impacts to wetlands.

Care will be taken where wetlands are located to avoid or minimize filling and sedimentation, which could occur as a result of construction activities. Selective clearing will be required to remove woody vegetation in wetlands that might impede construction or interfere with operation of the transmission line.

Best Management Practices such as utilization of silt fences and construction matting will be implemented as required during construction to control sedimentation. Sedimentation potential at wetlands should be minimal due to the structure placement and the fact that construction equipment will only cross wetlands as necessary, and do so using construction matting.

(4) Probable Impact of Operation and Maintenance on Vegetation, Surface Waters, and Wetlands

Text provided in the July 22, 2016 Application filing remains unchanged.

(5) Mitigation Procedures

Text provided in the July 22, 2016 Application filing remains unchanged.

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

Text provided in the July 22, 2016 Application filing remains unchanged.

(D) SITE GEOLOGY

(1) Local Geology

Text provided in the July 22, 2016 Application filing remains unchanged.

(2) Slopes and Soil Suitability for Foundation Construction

Text provided in the July 22, 2016 Application filing remains unchanged.

(E) ENVIRONMENTAL AND AVIATION COMPLIANCE INFORMATION

Text provided in the July 22, 2016 Application filing remains unchanged.



LEGEND:

- Dennison-Yager Amended Preferred Route
- Dennison-Yager Approved Route
- Dennison-Yager Alternate Route
- Access Road
- Amended Preferred Route ROW
- Amended Preferred Route Survey Corridor
- Amended Preferred Route 1,000-foot Buffer
- Eco Survey Corridor
- Delineated Stream
- Pond/Lake
- Reservoir
- NWI Wetland
- NHD Stream
- Slope Exceeds 12%

OHIO TRANSMISSION COMPANY

Dennison-Yager 138 kV Line Rebuild Project

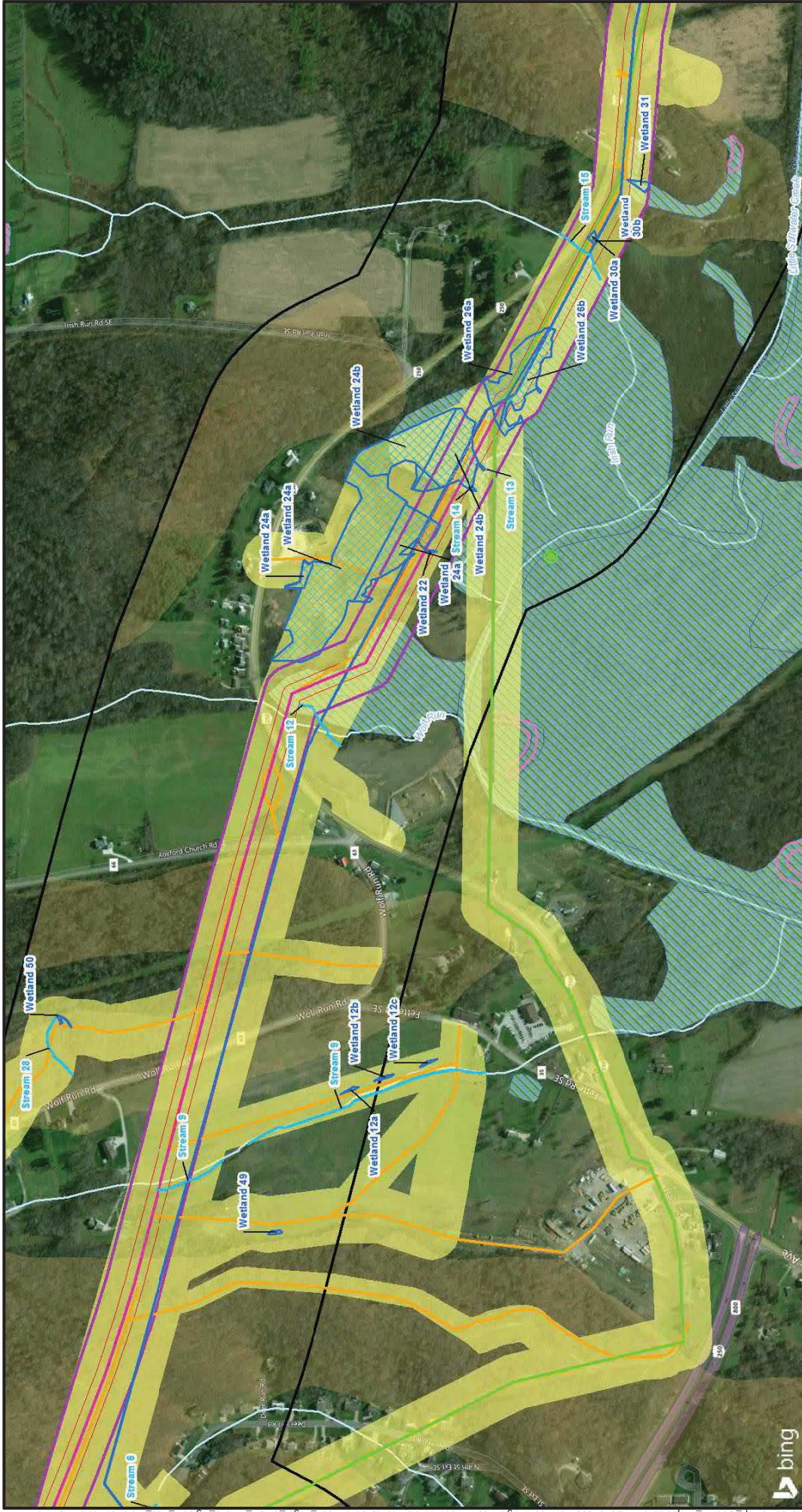
REVISED FIGURE 08-1B
ECOLOGICAL FEATURES
AMENDED PREFERRED ROUTE
ROW & SURVEY CORRIDOR

JOB NO. 60482505

Base Map Source:
ArcGIS Online, Bing Map Hybrid

Scale:
0 500 1,000 Feet

North Arrow:



LEGEND:

- Dennison-Yager Amended Preferred Route
- Dennison-Yager Approved Route
- Dennison-Yager Alternate Route
- Access Road
- Amended Preferred Route ROW
- Amended Preferred Route Survey Corridor
- Amended Preferred Route 1,000-foot Buffer
- Eco Survey Corridor
- Delineated Stream
- Delineated Wetland
- Pond/Lake
- NWI Wetland
- NHD Stream
- Slope Exceeds 12%
- Bald Eagle Nest

Scale: 0 500 1,000 Feet

North Arrow: N

Inset Map: A small map showing the project location within a larger regional context.

Project Information:

OHIO TRANSMISSION COMPANY
Dennison-Yager 138 kV Line Rebuild Project

REVISED FIGURE 08-1C
ECOLOGICAL FEATURES
AMENDED PREFERRED ROUTE
ROW & SURVEY CORRIDOR

JOB NO. 60482505

AECOM

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/12/2019 10:28:46 AM

in

Case No(s). 19-1435-EL-BTA

Summary: Application In the Matter of the Amendment Application of AEP Ohio Transmission Company, Inc. for a Certificate of Environmental Compatibility and Public Need for the Dennison-Yager 138 kV Transmission Line Rebuild Project electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Company, Inc.