



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Shrub/Scrub
 - Streams/Wetlands
 - Successional Woodland
 - Urban



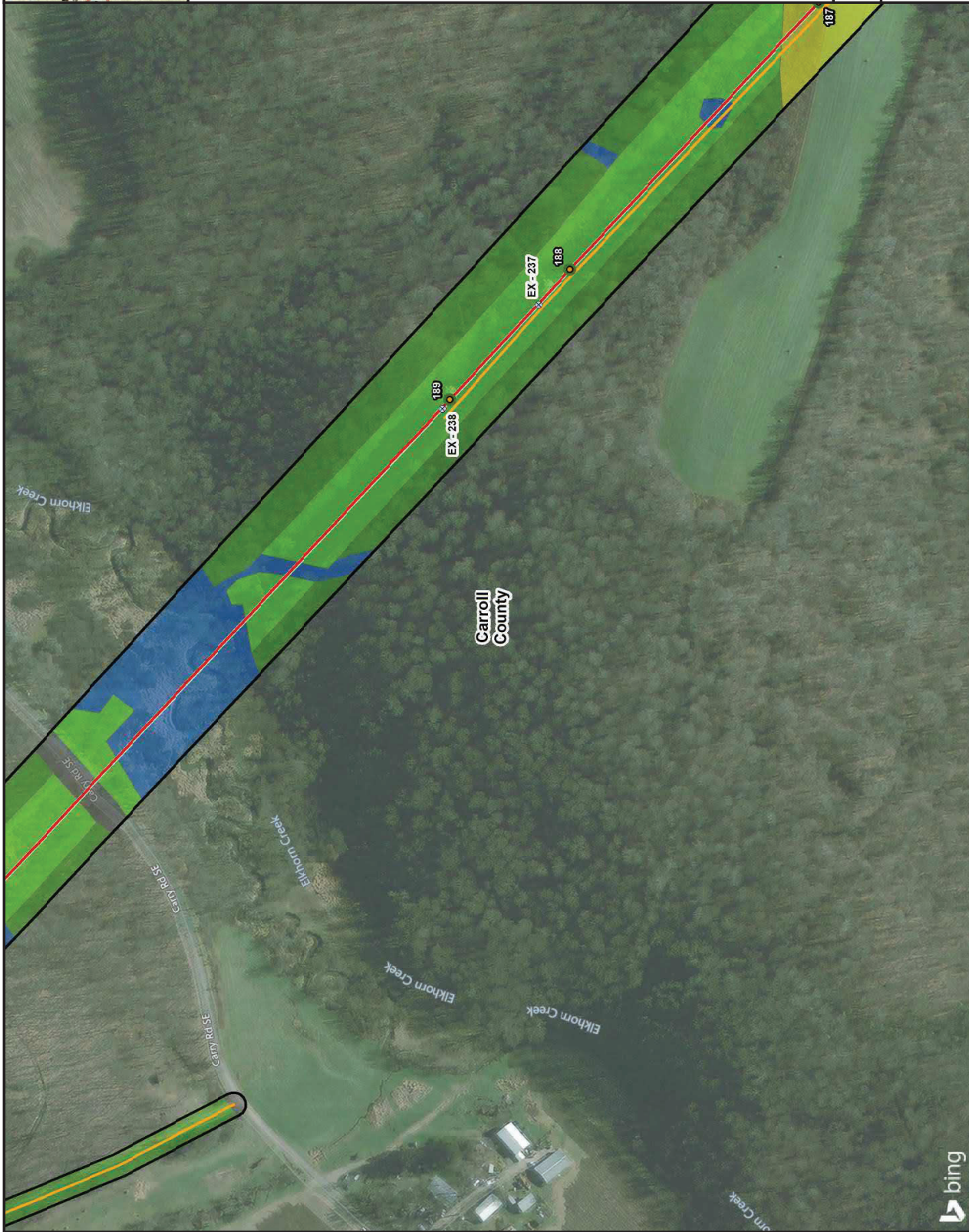
BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BF
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60592598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Old Field
 - Shrub/Scrub
 - Streams/Wetlands
 - Successional Woodland
 - Urban



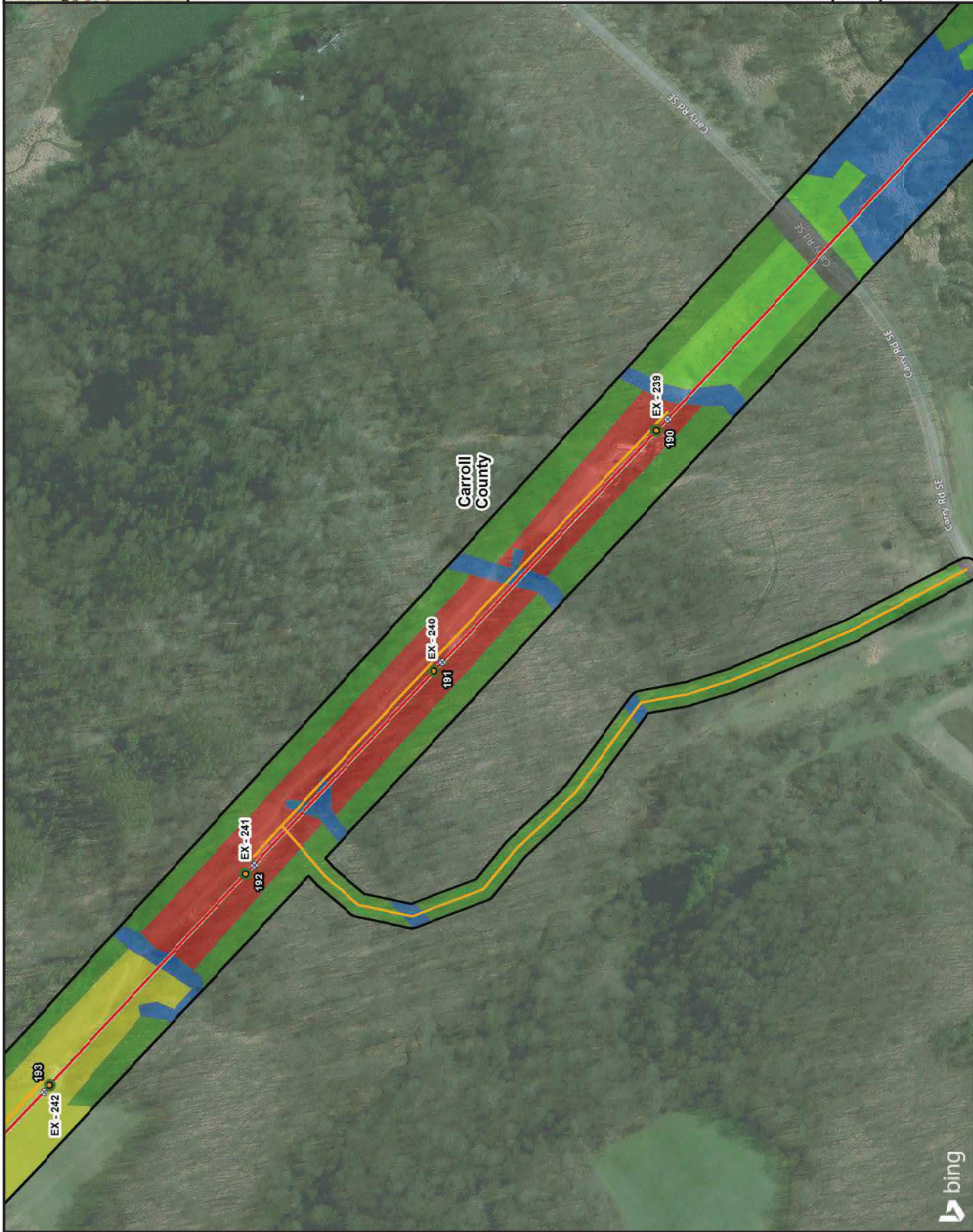
BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BG
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Old Field
 - Streams/Wetlands
 - Successional Woodland
 - Urban



BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

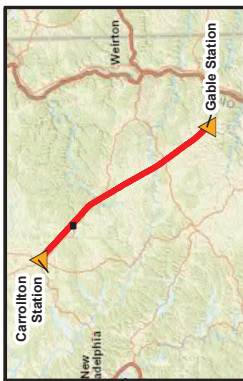
OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5B1
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

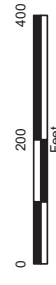
AECOM





LEGEND:

- Existing Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Streams/Wetlands
 - Successional Woodland
 - Urban



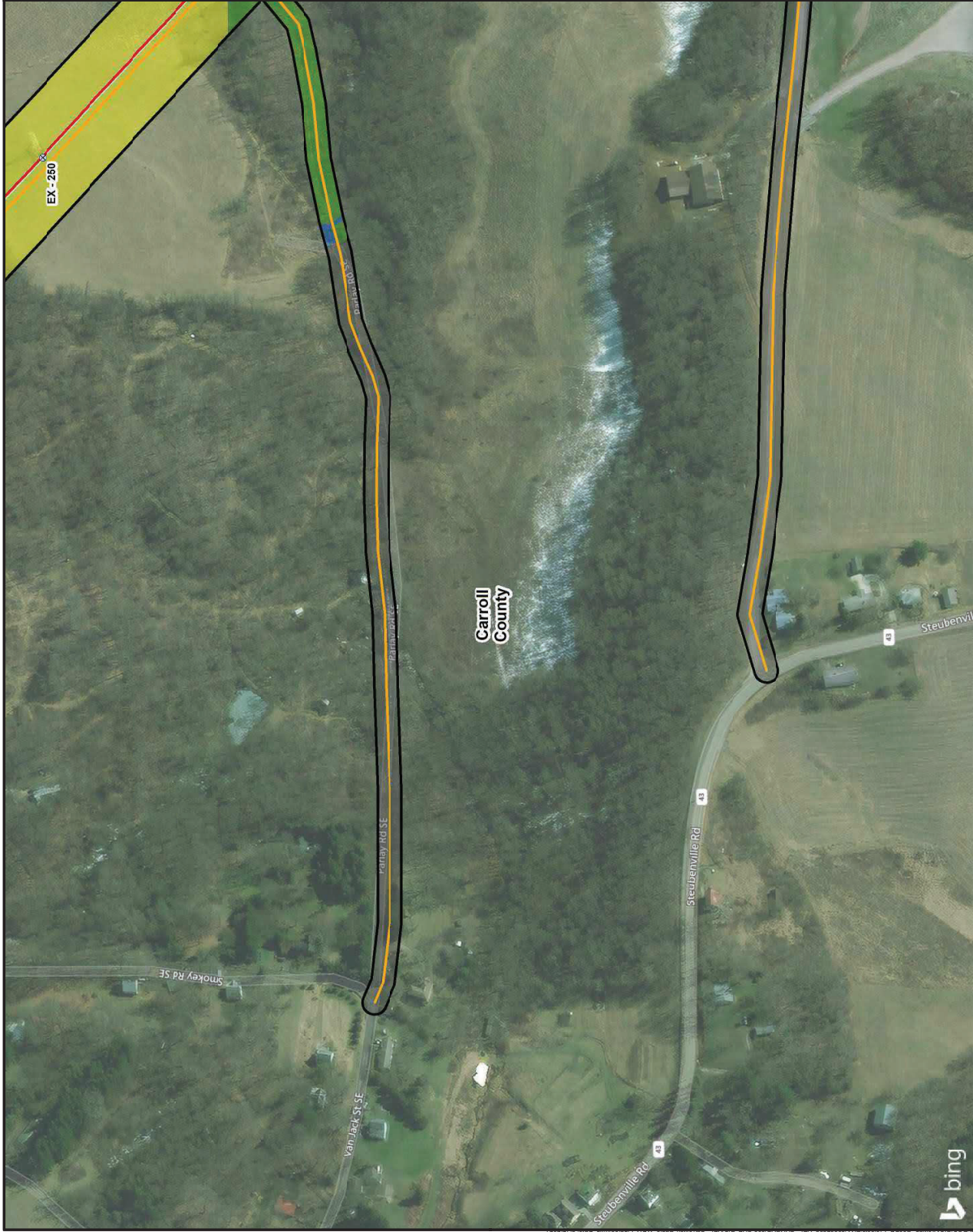
BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BJ
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Landscaped Area
 - Old Field
 - Pasture/Hay Field
 - Shrub/Scrub
 - Successional Woodland
 - Urban



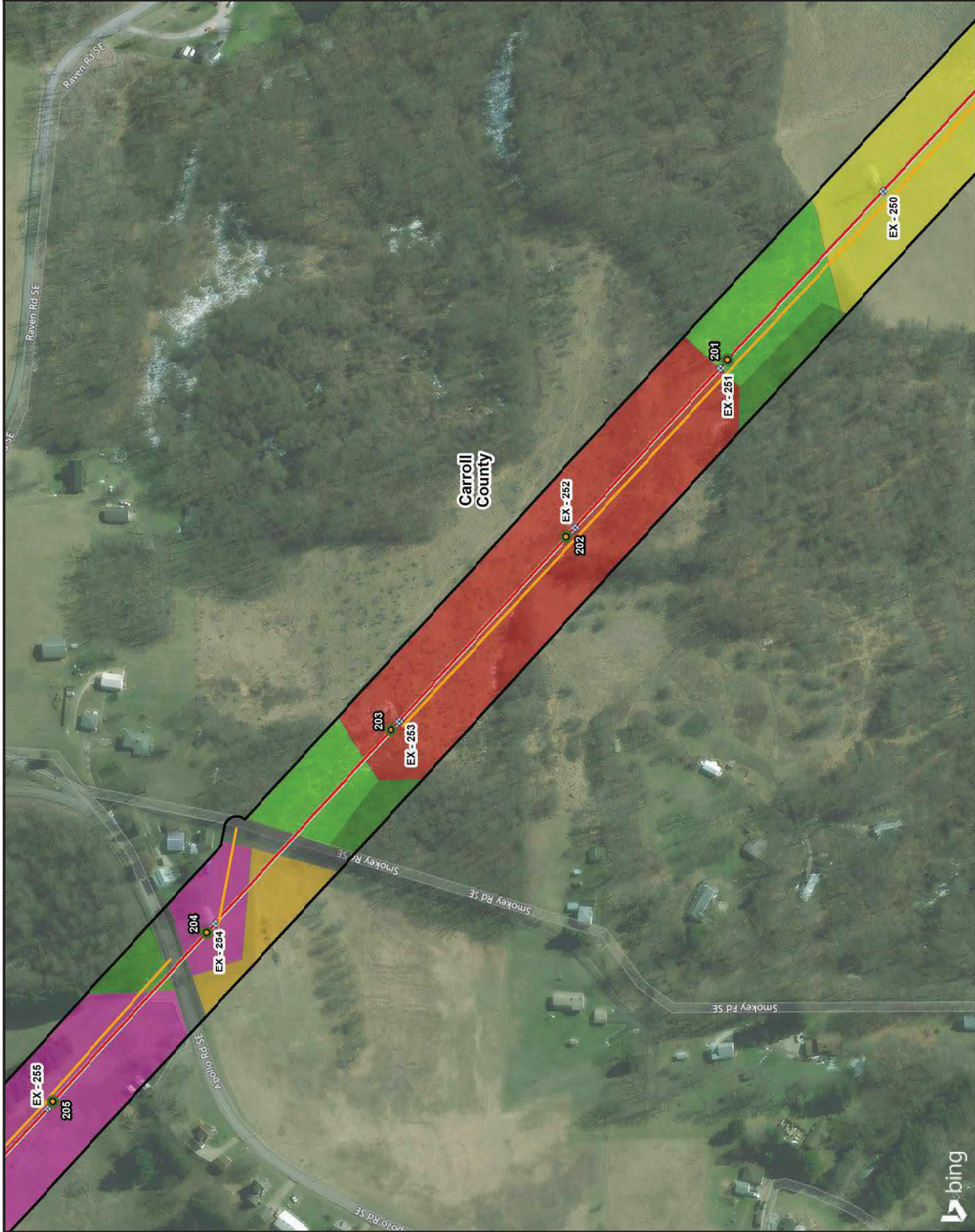
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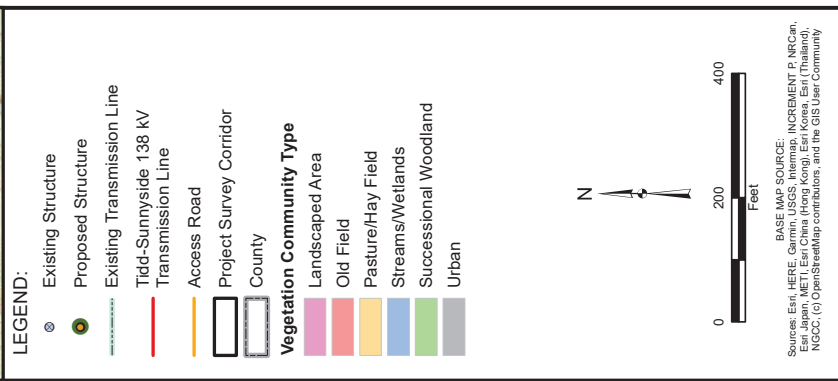
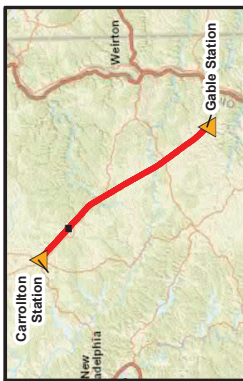
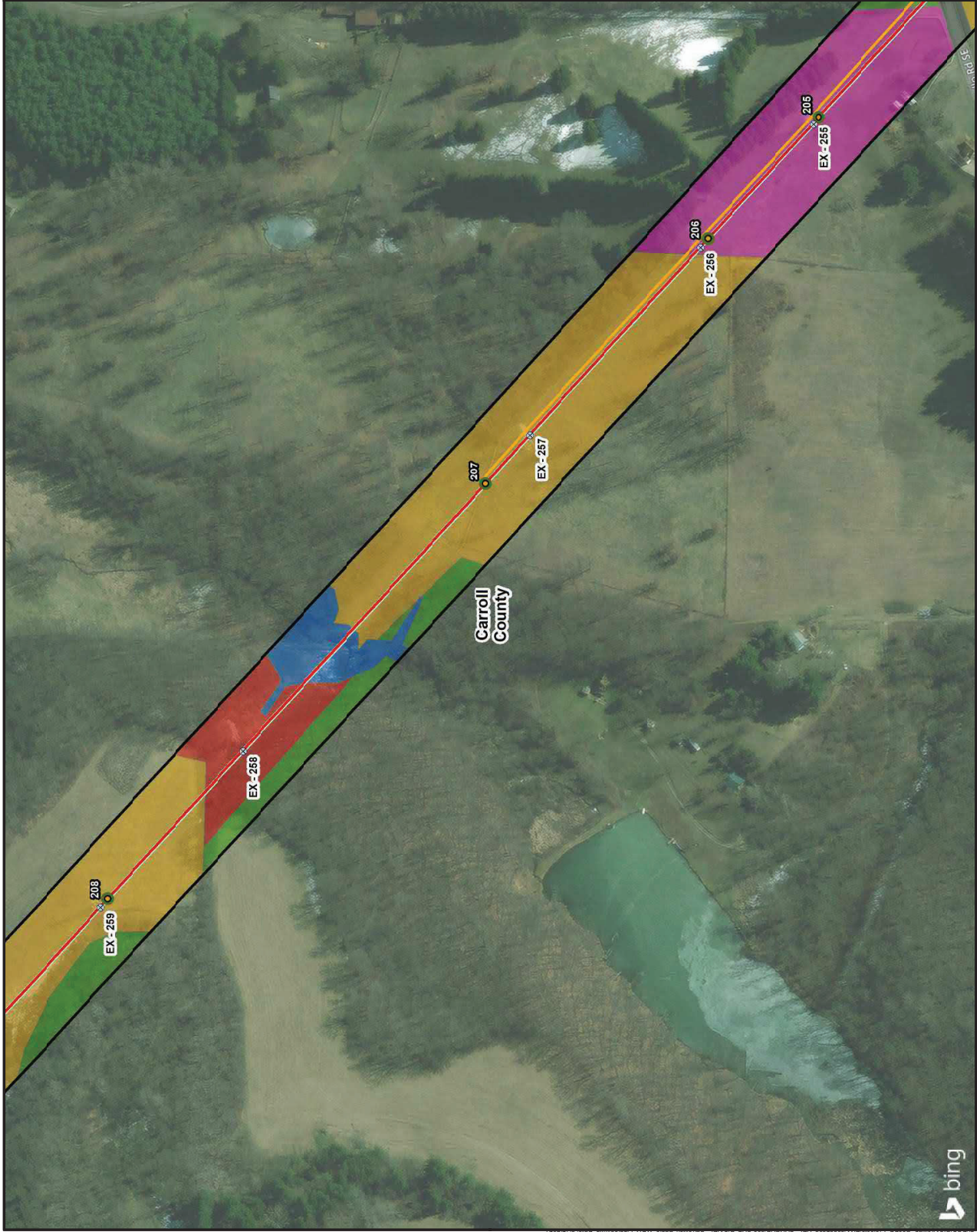
OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BK
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM







LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type
 - Old Field
 - Pasture/Hay Field
 - Streams/Wetlands
 - Successional Woodland



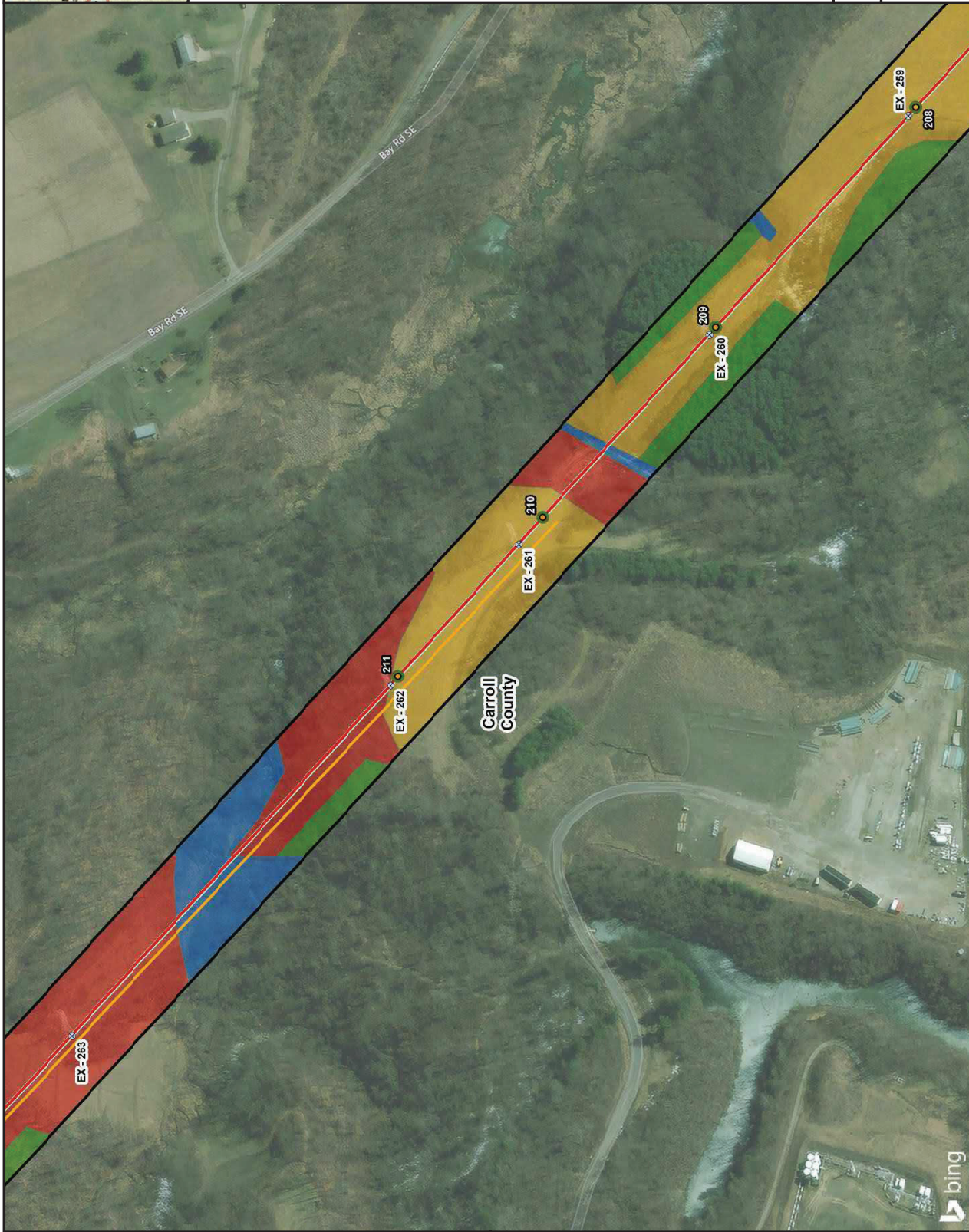
BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BM VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Old Field
 - Pasture/Hay Field
 - Streams/Wetlands
 - Successional Woodland



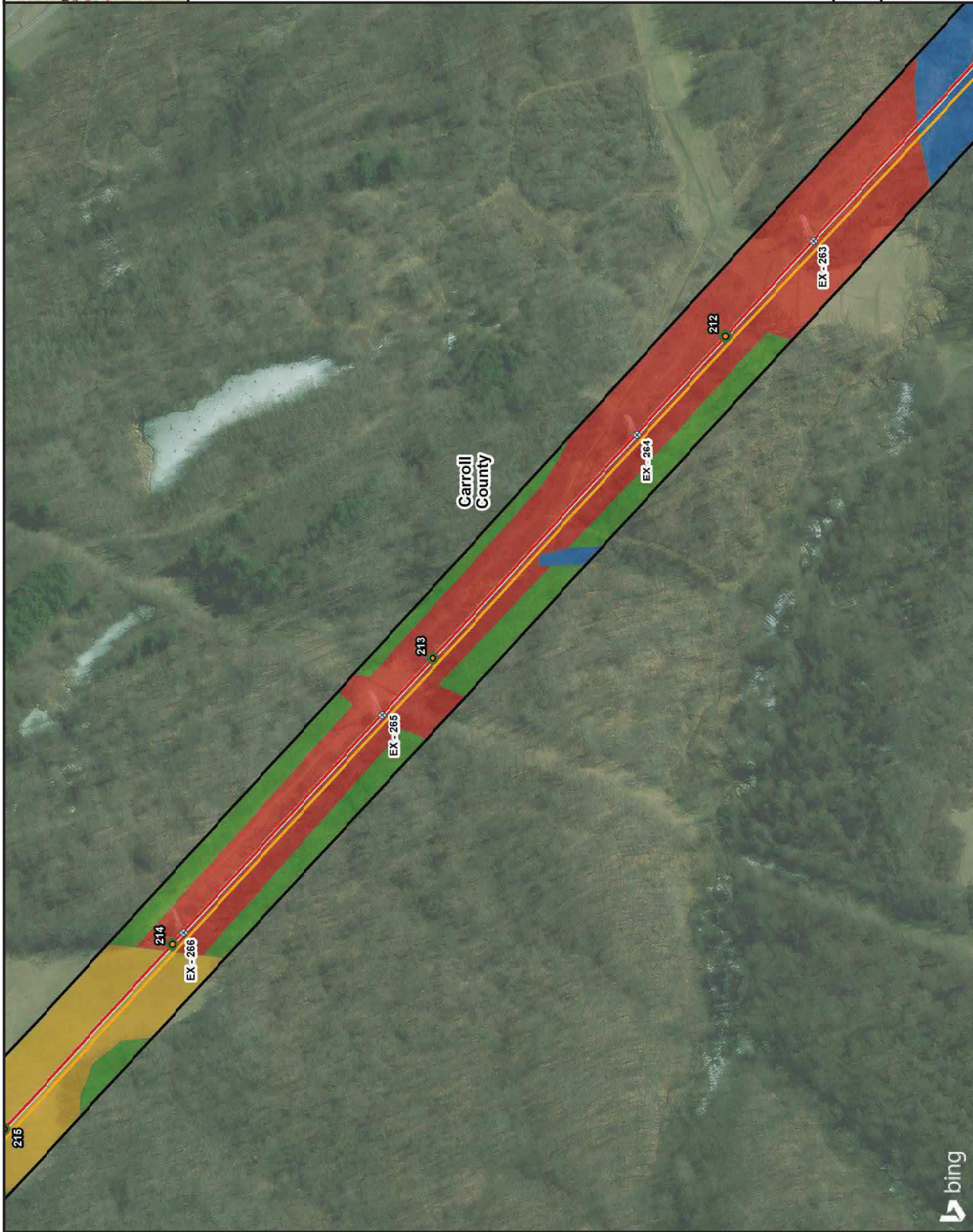
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OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BN
VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
 - Proposed Structure
 - Existing Transmission Line
 - Tidd-Sunnyside 138 kV Transmission Line
 - Access Road
 - Project Survey Corridor
 - County
- Vegetation Community Type**
- Agricultural Land
 - Landscaped Area
 - Old Field
 - Pasture/Hay Field
 - Streams/Wetlands
 - Successional Woodland
 - Urban



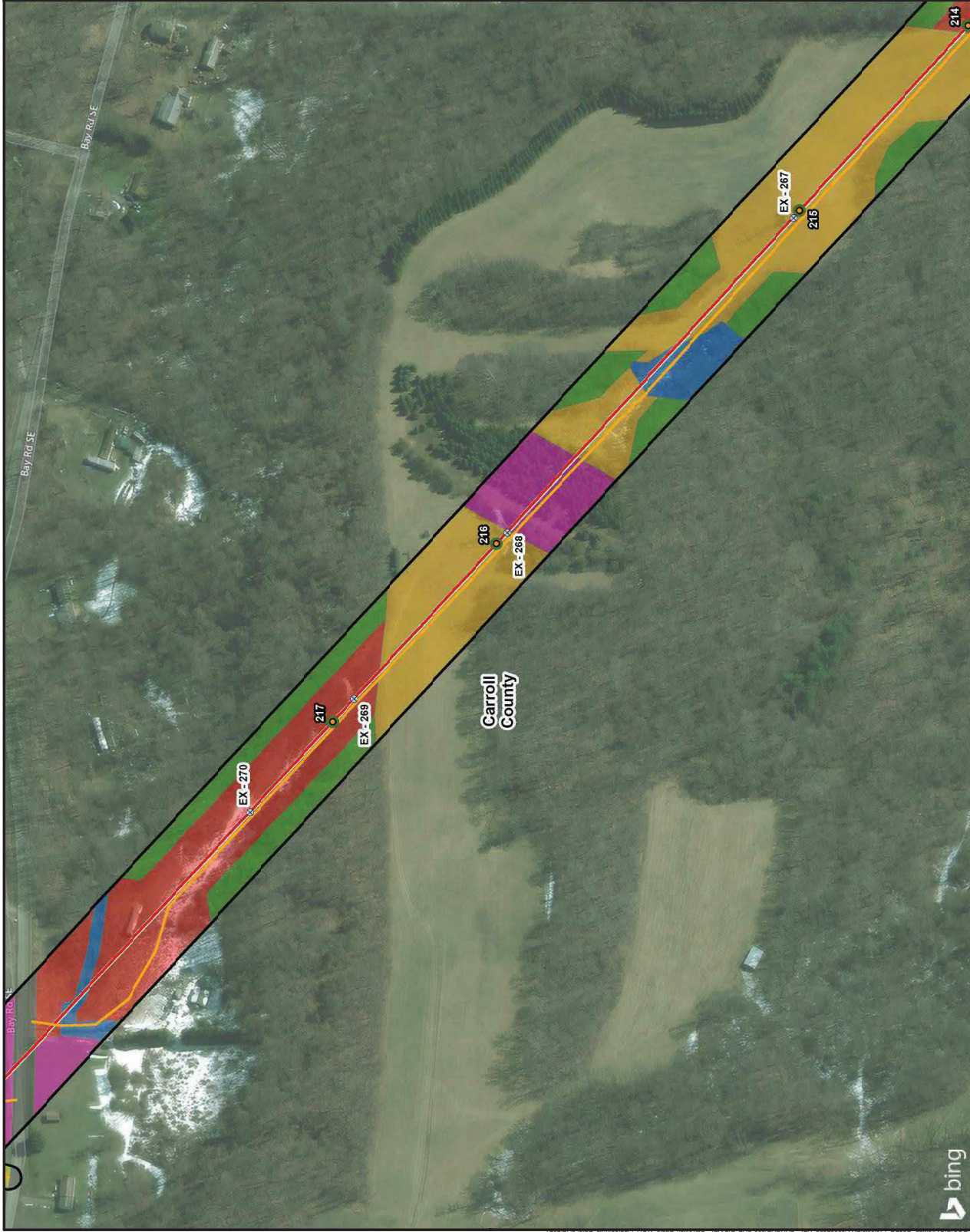
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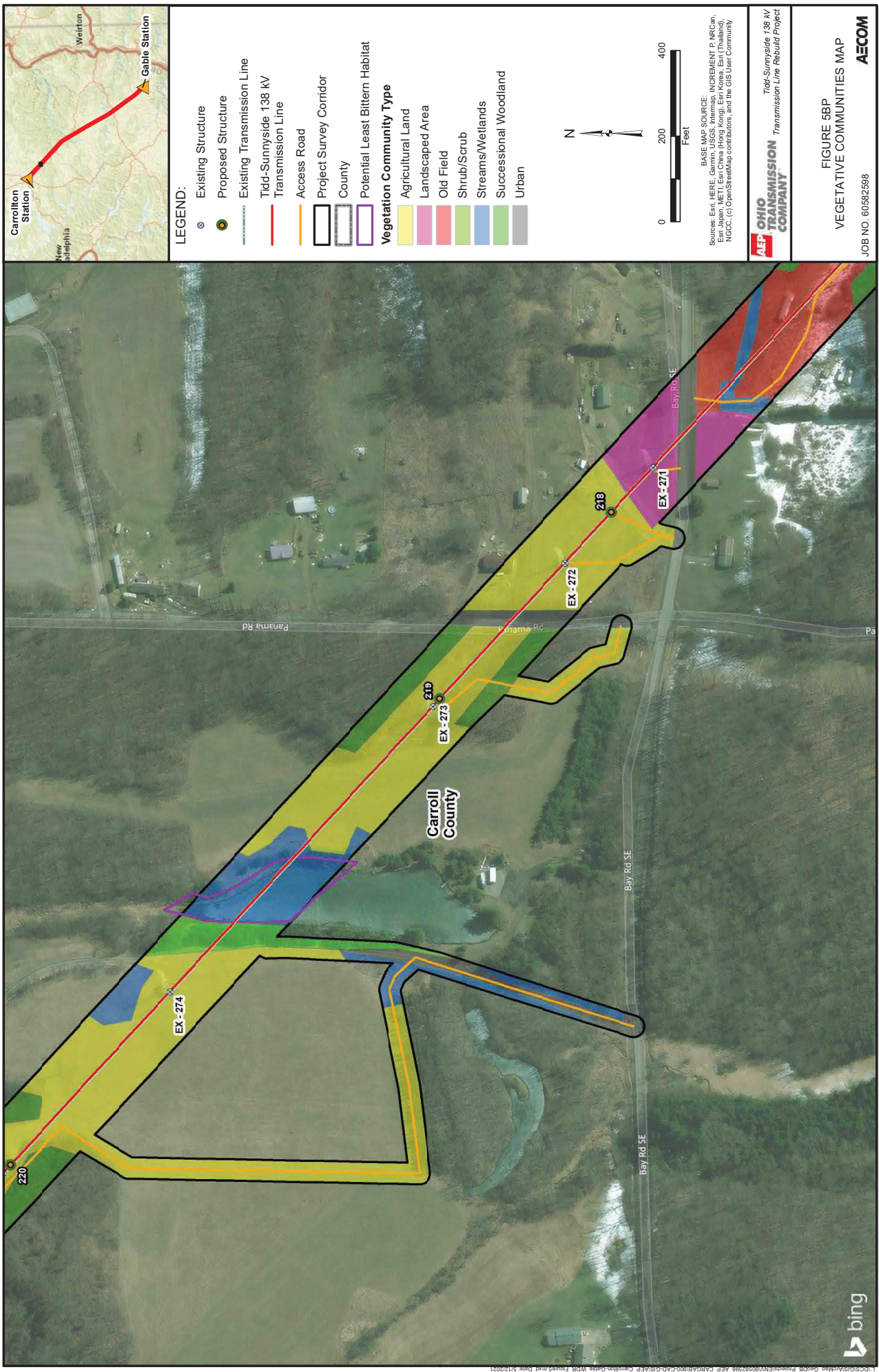
OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5B0
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM







LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Potential Least Bittern Habitat
- Vegetation Community Type**
 - Agricultural Land
 - Old Field
 - Pasture/Hay Field
 - Shrub/Scrub
 - Streams/Wetlands
 - Successional Woodland



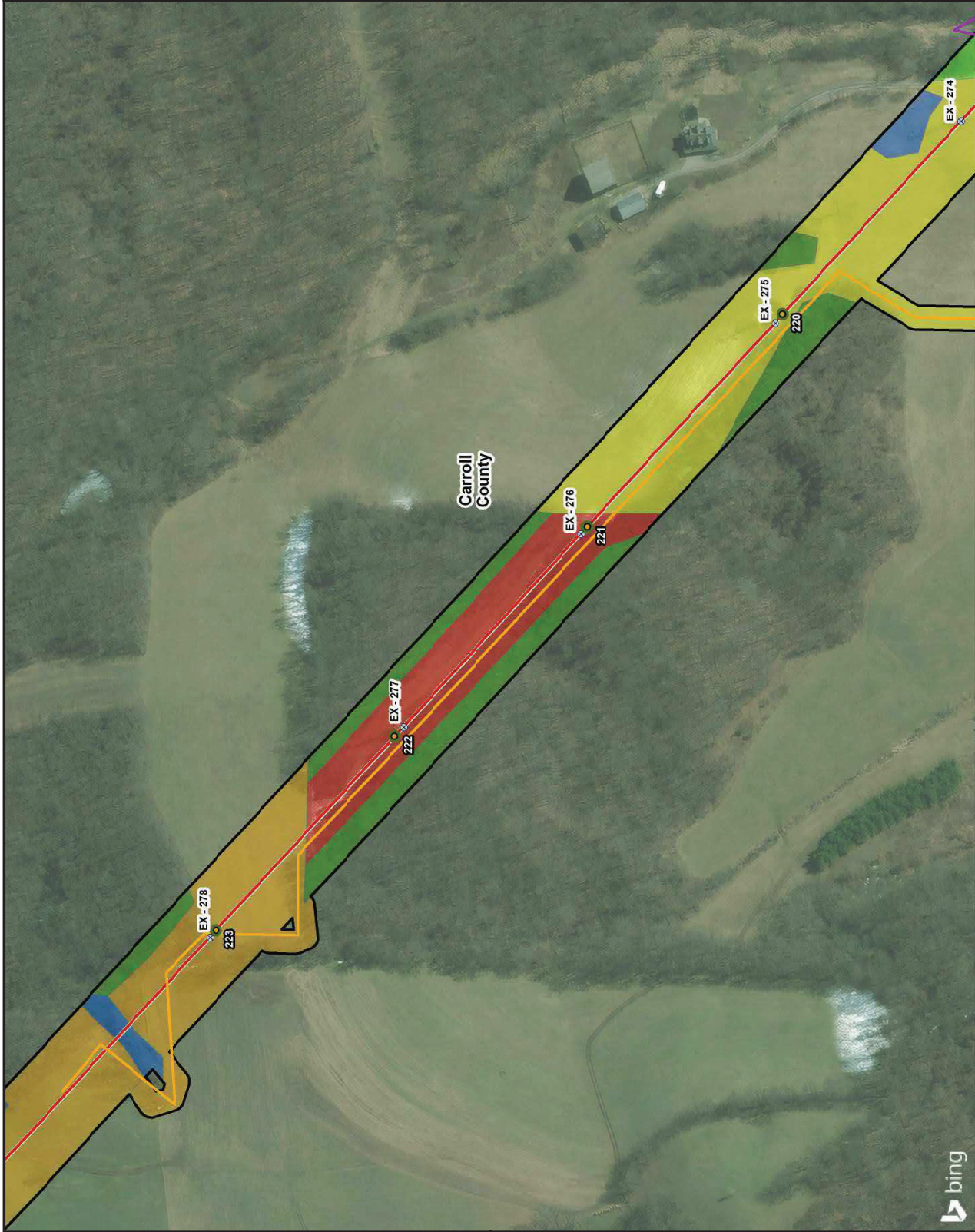
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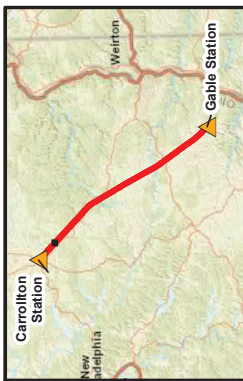
OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BQ
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60382598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Old Field
 - Pasture/Hay Field
 - Streams/Wetlands
 - Successional Woodland



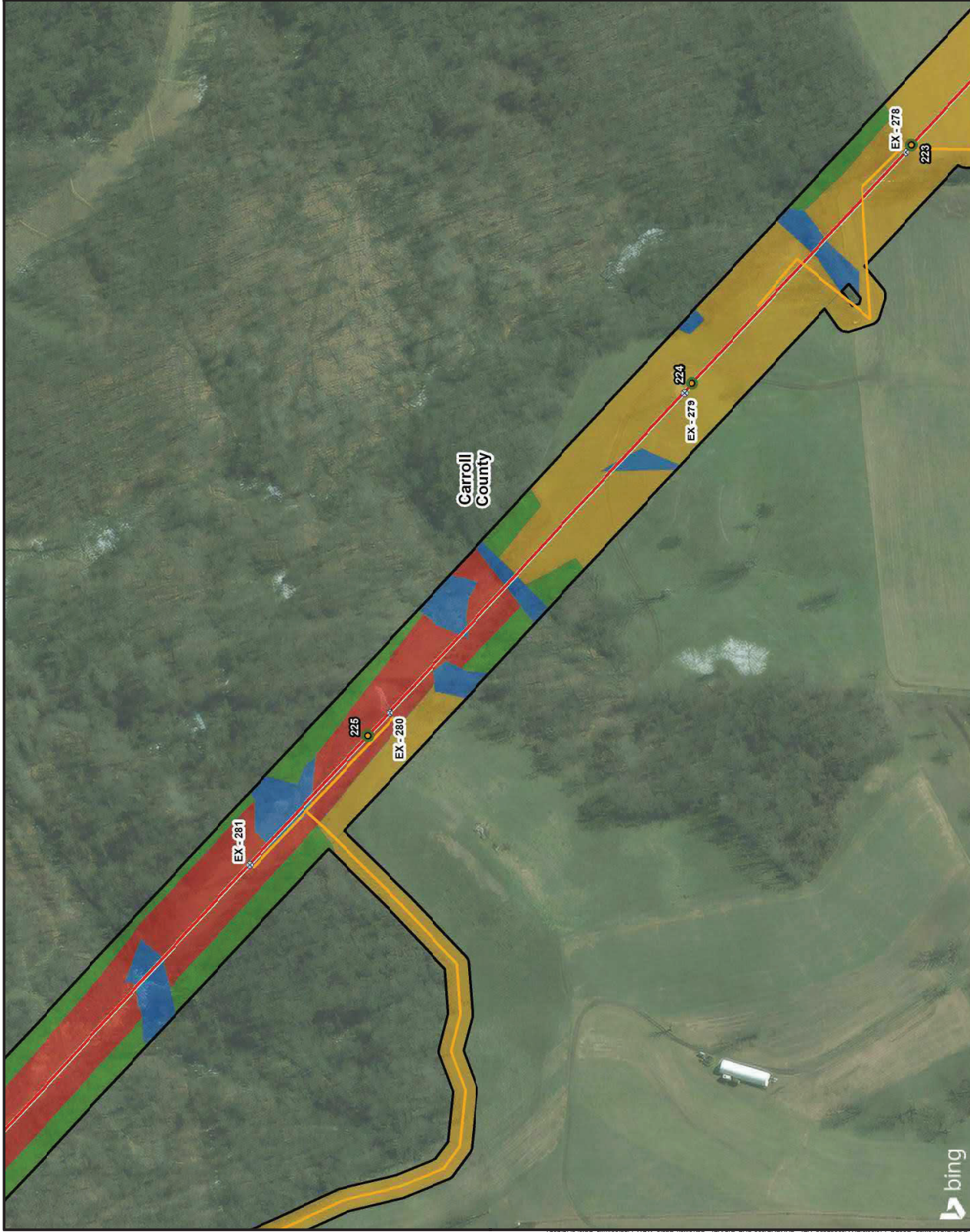
BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BR
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type
 - Old Field
 - Pasture/Hay Field
 - Streams/Wetlands
 - Successional Woodland



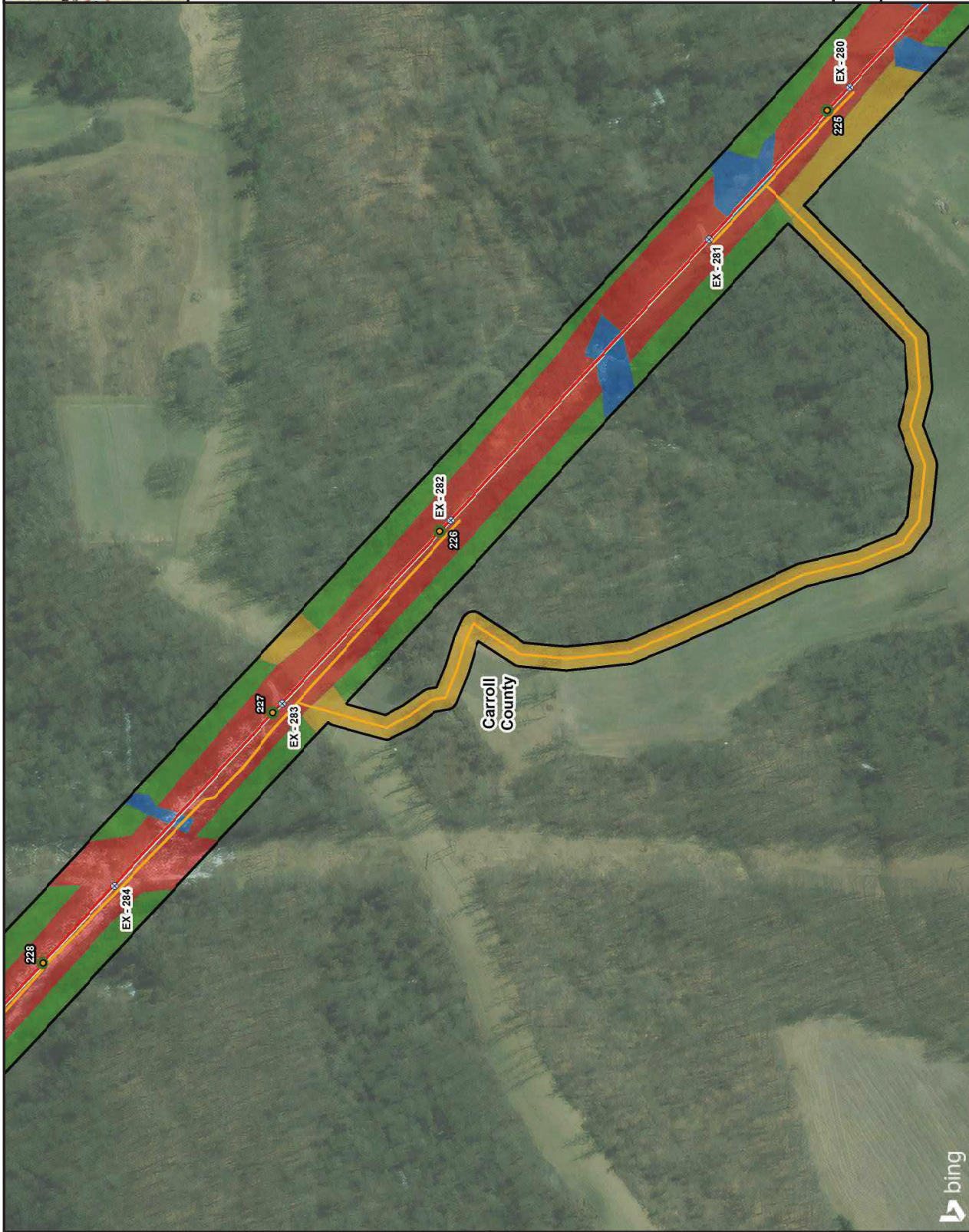
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OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BS
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Old Field
 - Streams/Wetlands
 - Successional Woodland



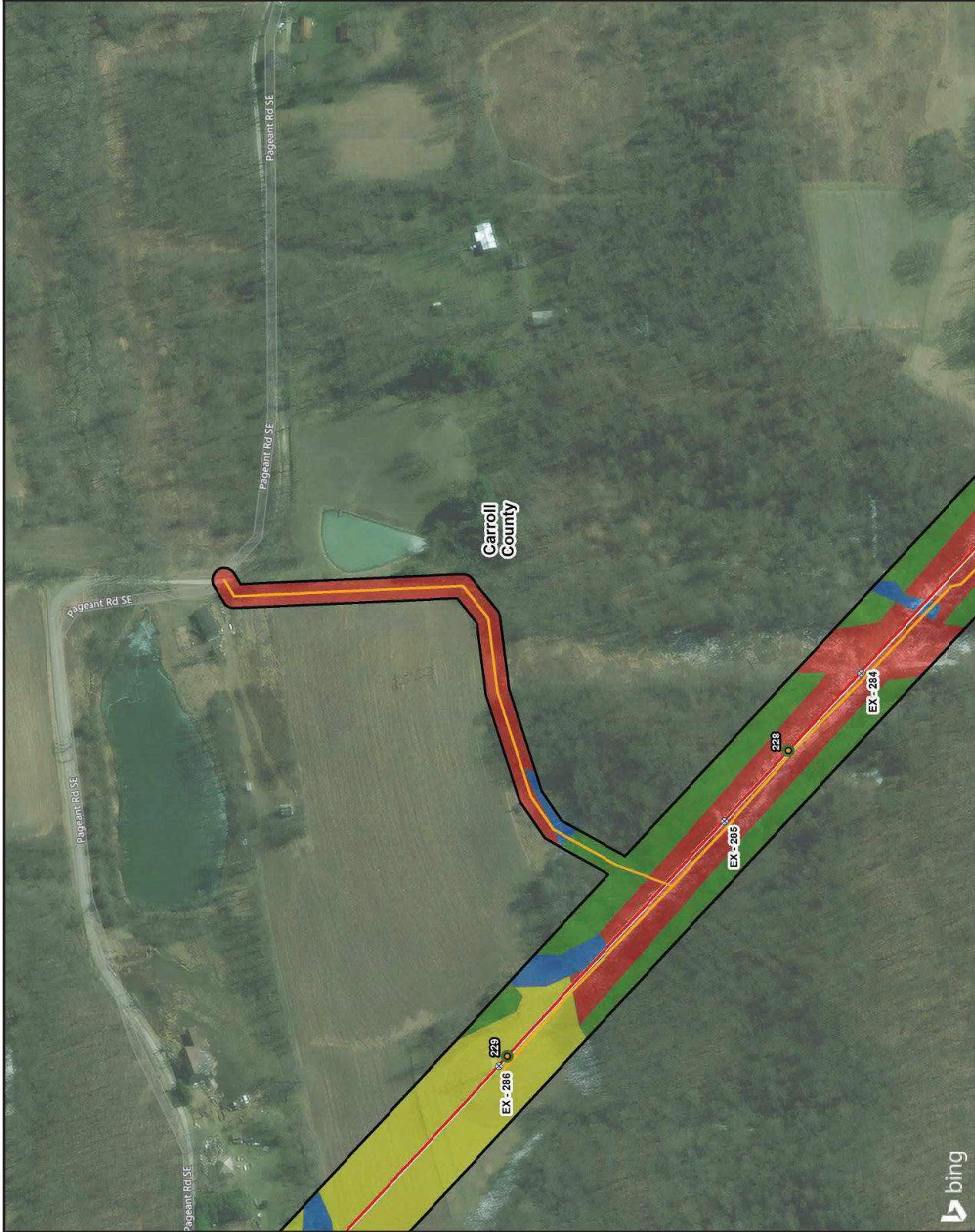
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OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BT
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60382598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Old Field
 - Streams/Wetlands
 - Successional Woodland
 - Urban



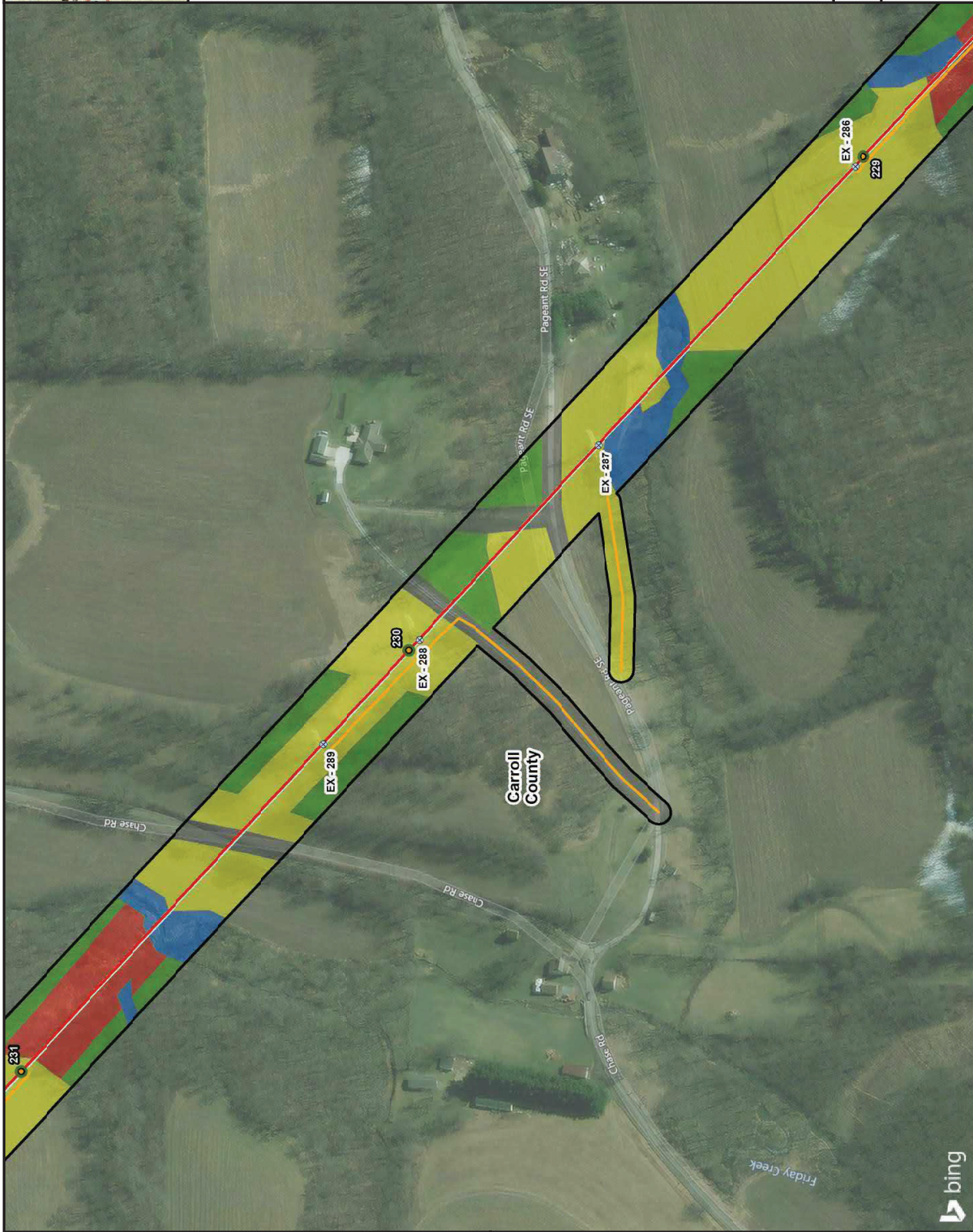
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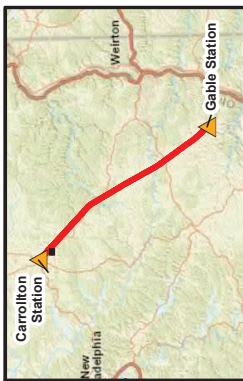
OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BU
VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





BASE MAP SOURCE:
 Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Trid-Sunrise 138 kV Transmission Line Rebuild Project

FIGURE 5BV
VEGETATIVE COMMUNITIES MAP
AECOM
 JOB NO. 60382598



LEGEND:

- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type
- Urban



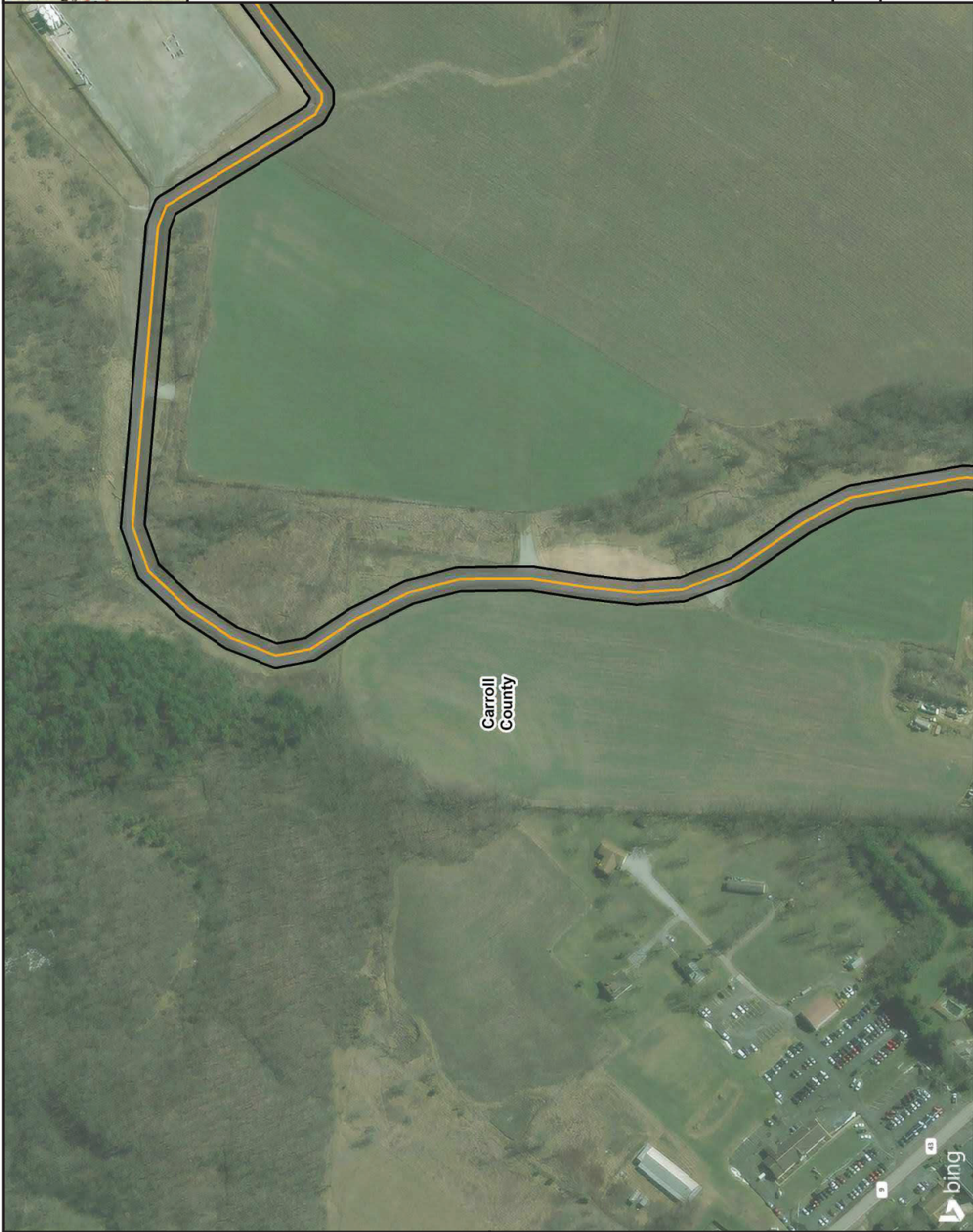
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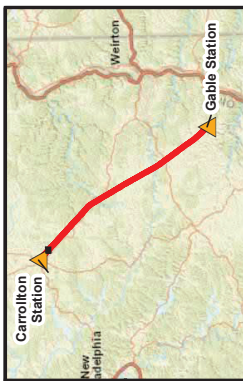
OHIO TRANSMISSION COMPANY
Tidd-Sunnyside 138 kV
Transmission Line Rebuild Project

FIGURE 5BW
VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Agricultural Land
 - Old Field
 - Streams/Wetlands
 - Successional Woodland
 - Urban



BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, InRoads, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

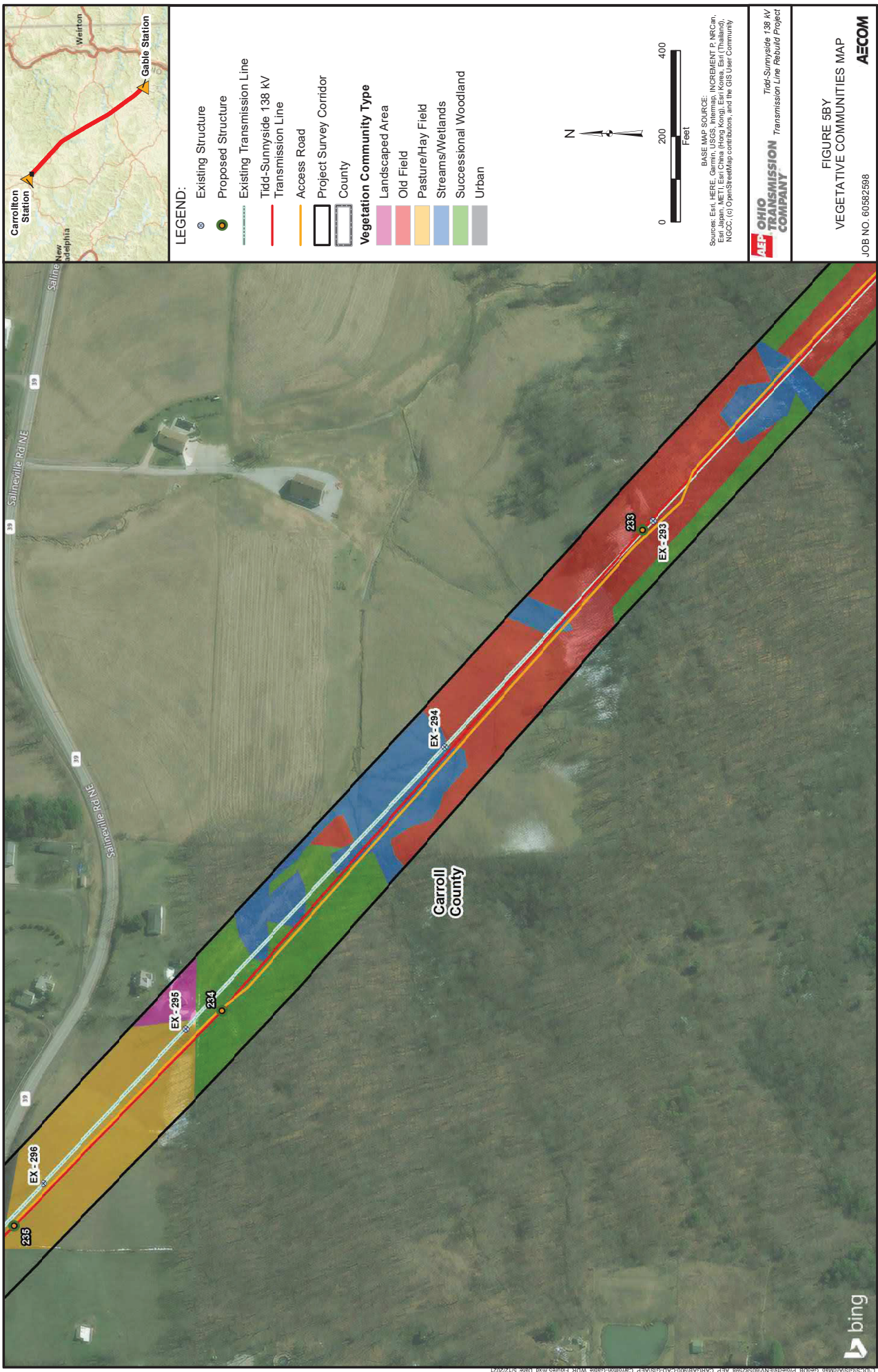
OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BX
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM

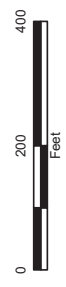






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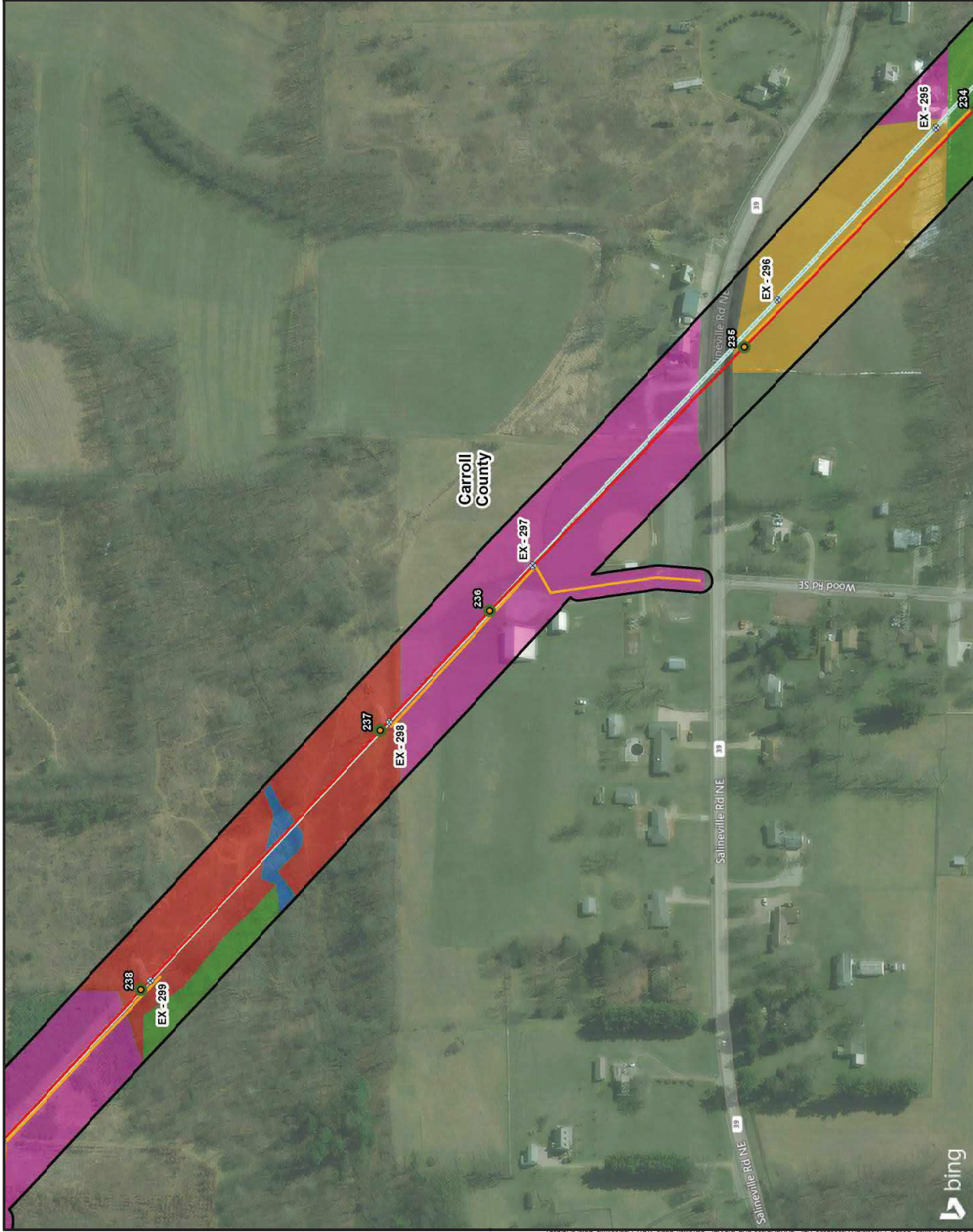
- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Landscaped Area
 - Old Field
 - Pasture/Hay Field
 - Streams/Wetlands
 - Successional Woodland
 - Urban



BASE MAP SOURCE:
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5BZ
VEGETATIVE COMMUNITIES MAP
 JOB NO. 60582598
AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type
- Landscaped Area
- Old Field
- Streams/Wetlands
- Successional Woodland
- Urban



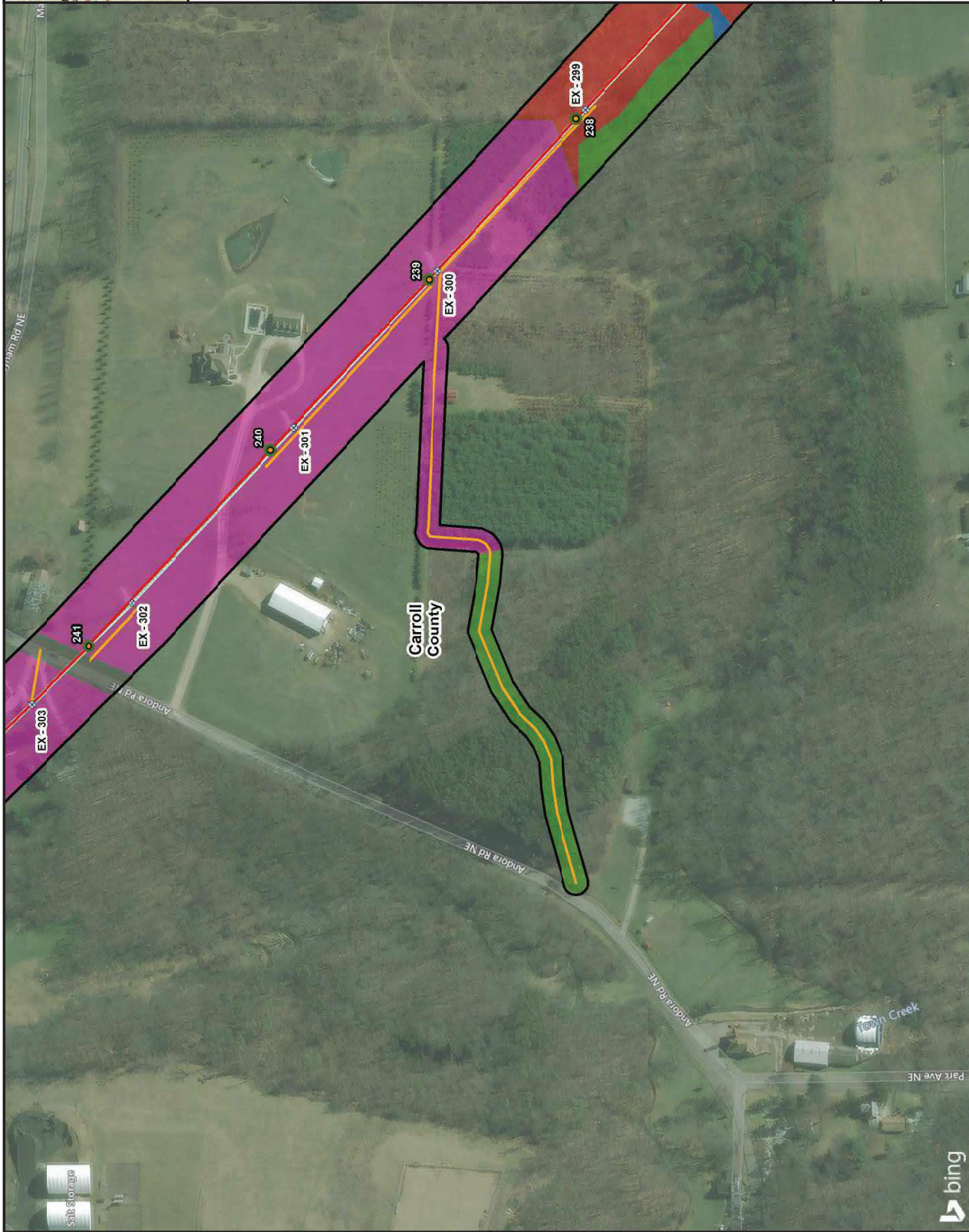
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OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5CA
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type**
 - Landscaped Area
 - Old Field
 - Streams/Wetlands
 - Successional Woodland
 - Urban



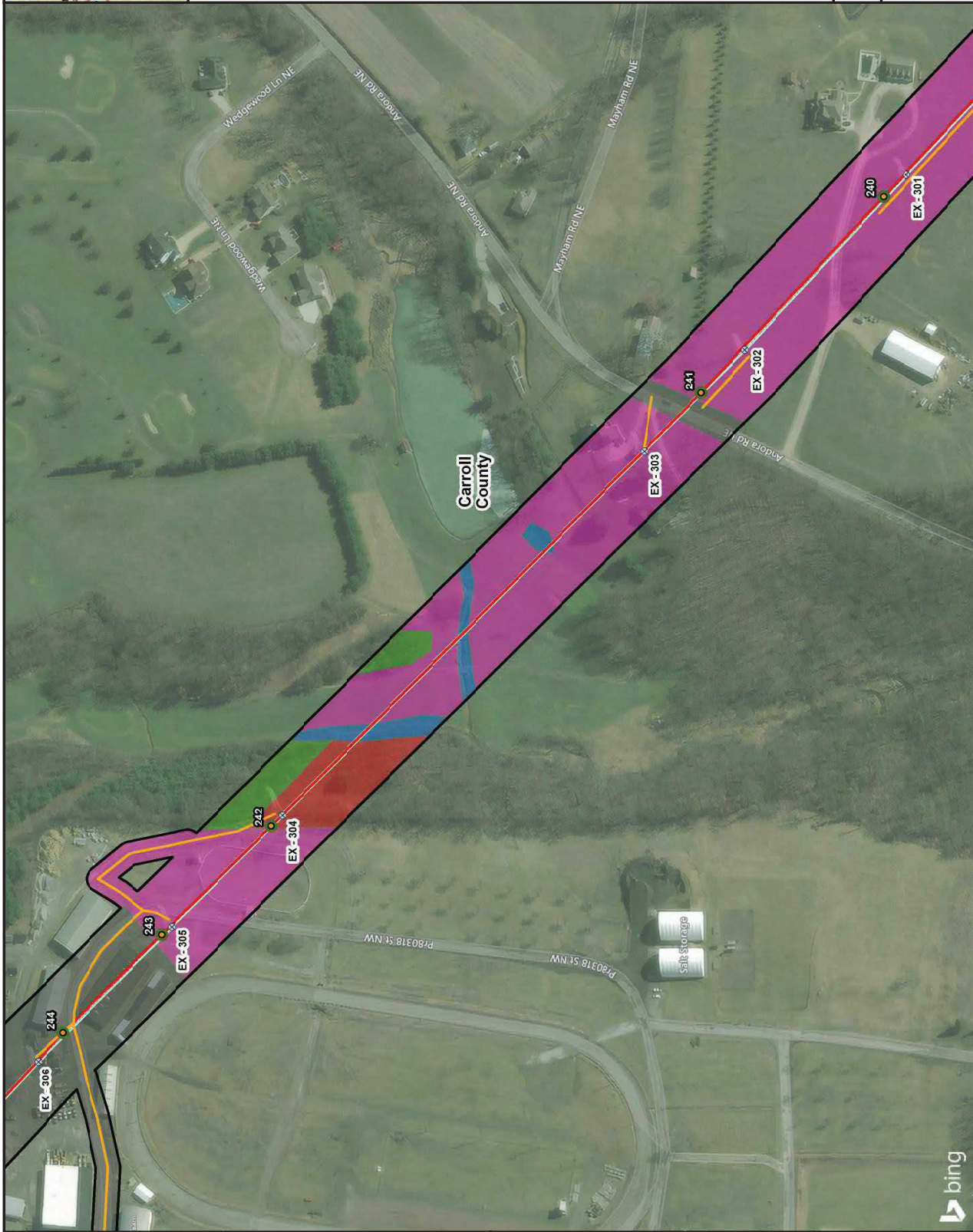
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OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5CB
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM





LEGEND:

- Existing Station
- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Tidd-Sunnyside 138 kV Transmission Line
- Access Road
- Project Survey Corridor
- County
- Vegetation Community Type
- Landscaped Area
- Streams/Wetlands
- Successional Woodland
- Urban



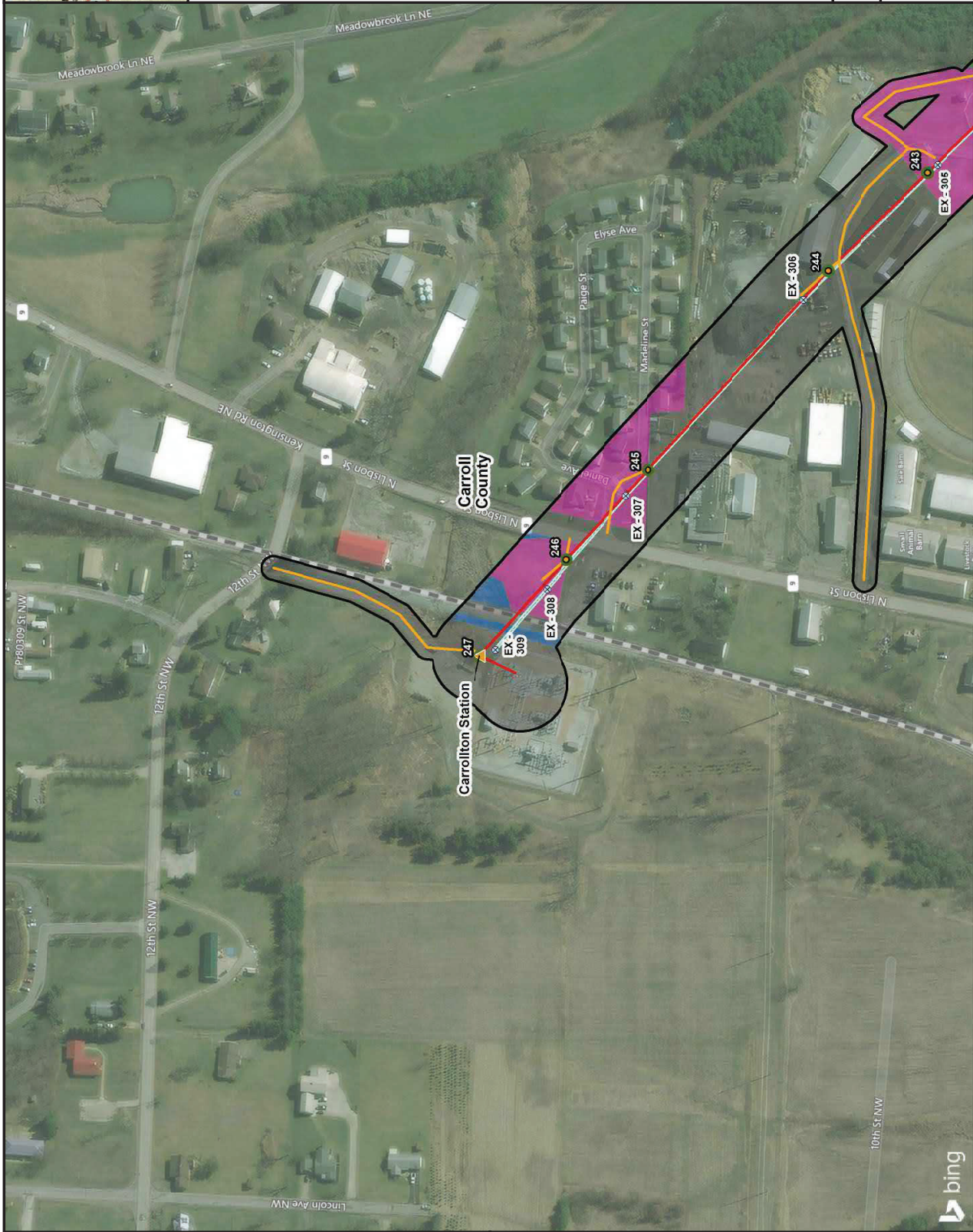
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 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY
 Tidd-Sunnyside 138 kV Transmission Line Rebuild Project

FIGURE 5CC
 VEGETATIVE COMMUNITIES MAP

JOB NO. 60582598

AECOM



APPENDIX A
PROJECT WETLAND TABLE

**TIDD-SUNNYSIDE 138 KV TRANSMISSION LINE REBUILD PROJECT
WETLAND TABLE**

5/12/2021

	A	B	C		D	E	F	G	H		I	J	K	L	M	N
1	Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	Score	Category	Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts			
		Latitude	Longitude										Temporary Matting Area (acre) ²	Permanent Impact Area (acre)		
2																
3	Wetland 01	40.587240	-81.082534	Yes	PEM	0.006	15	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
4	Wetland 02	40.582495	-81.076506	Yes	PEM	0.019	16	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
5	Wetland 03	40.577851	-81.070406	No	PEM	0.052	29.5	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
6	Wetland 04	40.573446	-81.064169	No	PEM	0.194	20	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
7	Wetland 05	40.572671	-81.063172	No	PEM	0.802	25.5	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
8	Wetland 06	40.572471	-81.062678	Yes	PEM	0.032	20.5	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
9	Wetland 07	40.571749	-81.061685	Yes	PEM	0.079	21.5	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
10	Wetland 08	40.570314	-81.059988	Yes	PEM	0.137	28	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
11	Wetland 09	40.570079	-81.059758	No	PEM	0.091	30	Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
12	Wetland 10	40.569346	-81.058535	Yes	PEM	0.142	28	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
13	Wetland 11	40.568830	-81.057939	Yes	PEM	0.090	26	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
14	Wetland 12	40.568230	-81.057066	Yes	PEM	0.022	10	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15	Wetland 13	40.565908	-81.054256	No	PFO	0.113	40	Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
16	Wetland 14	40.563421	-81.050686	No	PEM	0.107	17	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
17	Wetland 15	40.563116	-81.049833	No	PSS	0.071	37	Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
18	Wetland 16	40.561673	-81.047833	Yes	PEM	0.126	15	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
19	Wetland 17	40.559648	-81.045120	No	PEM	0.034	25	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
20	Wetland 18	40.557001	-81.041796	No	PEM	0.126	29	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
21	Wetland 19	40.556244	-81.040406	Yes	PEM	0.178	21	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
22	Wetland 20	40.555228	-81.039494	Yes	PEM	0.068	13	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
23	Wetland 21	40.555271	-81.038914	Yes	PEM	0.131	15	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
24	Wetland 22	40.554152	-81.037863	Yes	PEM	0.049	13	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
25	Wetland 23	40.548522	-81.029551	Yes	PEM	0.148	11	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
26	Wetland 24	40.548020	-81.028817	No	PEM	0.047	54	Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
27	Wetland 25	40.547614	-81.028438	No	PEM	0.166	54	Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
28	Wetland 26	40.546978	-81.028283	No	PEM	0.027	54	Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
29	Wetland 27	40.544375	-81.024670	No	PEM	0.023	17	Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

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**TIDD-SUNNYSIDE 138 KV TRANSMISSION LINE REBUILD PROJECT
WETLAND TABLE**

5/12/2021

1	A	B	C		D	E	F	G	H		I	J	K	L	M		N
			Latitude	Longitude					Score	Category					Structure Installation Method	Temporary Matting Area (acre) ²	Permanent Impact Area (acre)
2	Wetland ID				Isolated?	Habitat Type	Delineated Area (acre)				Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland				
30	Wetland 28a	40.540974	-81.019715		Yes	PEM	0.092	35	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
31	Wetland 28b	40.540939	-81.019738		Yes	PSS	0.085	35	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
32	Wetland 29a	40.534832	-81.010946		No	PEM	0.204	40	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
33	Wetland 29b	40.534784	-81.011187		No	PSS	0.050	40	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
34	Wetland 30a	40.534539	-81.010403		No	PEM	0.178	44	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
35	Wetland 30b	40.534544	-81.010170		No	PSS	0.096	44	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
36	Wetland 31a	40.529420	-81.003321		No	PEM	0.199	34	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
37	Wetland 31b	40.529528	-81.003255		No	PSS	0.055	34	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
38	Wetland 32	40.529091	-81.003361		No	PEM	0.009	42	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
39	Wetland 33	40.529386	-81.003011		No	PEM	0.019	25	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
40	Wetland 34	40.519814	-80.990032		No	PEM	0.103	26	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
41	Wetland 35	40.519694	-80.990259		No	PEM	0.020	50	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
42	Wetland 36	40.516389	-80.985888		No	PEM	0.077	13	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
43	Wetland 37	40.516264	-80.985622		No	PEM	0.003	17	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
44	Wetland 38	40.516027	-80.985159		Yes	PEM	0.043	13	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
45	Wetland 39a	40.507157	-80.972935		No	PEM	0.366	51	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
46	Wetland 39b	40.507470	-80.973037		No	PSS	0.647	51	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
47	Wetland 39c	40.507128	-80.972720		No	PFO	0.467	51	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
48	Wetland 40a	40.507034	-80.972161		No	PEM	0.041	45.5	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
49	Wetland 40b	40.507144	-80.972195		No	PFO	0.068	45.5	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
50	Wetland 41	40.504071	-80.968642		Yes	PEM	0.030	24	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
51	Wetland 42	40.497994	-80.959625		No	PEM	0.154	35	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
52	Wetland 43	40.492053	-80.951438		Yes	PEM	0.012	13.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
53	Wetland 44	40.491811	-80.951025		Yes	PEM	0.031	12.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
54	Wetland 45	40.483141	-80.941729		Yes	PEM	0.108	14	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
55	Wetland 46	40.476807	-80.937224		Yes	PEM	0.030	22	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
56	Wetland 47	40.476165	-80.936767		Yes	PEM	0.218	10	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD

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WETLAND TABLE**

5/12/2021

	A	B	C		D	E	F	G	H		I	J	K	L	M	N
1	Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts			
		Latitude	Longitude				Score	Category					Temporary Matting Area (acre) ²	Permanent Impact Area (acre)		
2																
57	Wetland 48	40.475467	-80.936294	Yes	PEM	0.062	11		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
58	Wetland 49	40.472851	-80.934154	No	PSS	0.614	59		Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
59	Wetland 50	40.467982	-80.930637	Yes	PEM	0.012	14.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
60	Wetland 51	40.465647	-80.928723	No	PEM	0.423	41		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
61	Wetland 53	40.459865	-80.924163	No	PEM	0.020	57		Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
62	Wetland 54a	40.452052	-80.918722	No	PEM	0.085	50		Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
63	Wetland 54b	40.452029	-80.918544	No	PSS	0.425	50		Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
64	Wetland 55	40.441012	-80.910320	No	PEM	0.652	32		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
65	Wetland 56a	40.432411	-80.903857	No	PEM	0.691	32		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
66	Wetland 56b	40.432223	-80.903842	No	PSS	0.118	32		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
67	Wetland 56c	40.432025	-80.903895	No	PFO	0.074	32		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
68	Wetland 57	40.425578	-80.898918	Yes	PEM	0.026	32		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
69	Wetland 58a	40.425192	-80.898381	No	PEM	0.335	33		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
70	Wetland 58b	40.425021	-80.898674	No	PFO	0.042	33		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
71	Wetland 59	40.419630	-80.894302	No	PEM	2.005	20.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
72	Wetland 60	40.410047	-80.887557	No	PEM	0.704	32.5		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
73	Wetland 61	40.408248	-80.886080	Yes	PEM	0.040	18.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
74	Wetland 62	40.405455	-80.883946	Yes	PEM	0.008	18.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
75	Wetland 63a	40.403219	-80.882489	No	PEM	0.395	34.5		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
76	Wetland 63b	40.402880	-80.881964	No	PFO	0.146	34.5		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD
77	Wetland 64	40.402455	-80.882334	No	PEM	0.003	28		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
78	Wetland 65	40.399860	-80.880209	No	PEM	0.676	10		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
79	Wetland 66	40.397916	-80.878997	No	PEM	0.963	11		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
80	Wetland 67a	40.391479	-80.874355	No	PEM	0.387	15		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
81	Wetland 67b	40.391014	-80.873629	No	PUB	0.051	15		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
82	Wetland 68	40.390723	-80.873608	No	PUB	0.007	13		Category 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD
83	Wetland 69	40.390379	-80.873441	No	PUB	0.411	31.5		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD

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WETLAND TABLE**

5/12/2021

1	A	B	C		D	E	F	G	H		I	J	K	L	M		N
			Latitude	Longitude					Score	Category					Structure Installation Method	Temporary Matting Area (acre) ²	Permanent Impact Area (acre)
2	Wetland ID				Isolated?	Habitat Type	Delineated Area (acre)			OKAM	Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland				
84	Wetland 70	40.390069	-80.873698		No	PSS	0.000	37	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
85	Wetland 71	40.389686	-80.873035		No	PUB	0.391	31.5	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
86	Wetland 72	40.387038	-80.871537		Yes	PEM	0.017	13	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
87	Wetland 73	40.381086	-80.866876		No	PEM	0.020	18.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
88	Wetland 74	40.377609	-80.864507		No	PEM	0.029	17.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
89	Wetland 75	40.376738	-80.864344		No	PFO	0.074	45	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
90	Wetland 76	40.375528	-80.863242		No	PEM	0.003	17.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
91	Wetland 77	40.374461	-80.862495		No	PEM	0.062	16.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
92	Wetland 78a	40.372026	-80.860644		No	PEM	0.489	55	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
93	Wetland 78b	40.371886	-80.860248		No	PSS	0.262	55	Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
94	Wetland 79	40.370984	-80.859989		Yes	PEM	0.018	27	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
95	Wetland 80a	40.369879	-80.859222		No	PEM	0.073	43	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
96	Wetland 80b	40.369750	-80.859417		No	PFO	0.017	43	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
97	Wetland 81	40.369289	-80.858831		No	PEM	0.006	17	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
98	Wetland 82	40.367729	-80.857866		No	PEM	0.094	25	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
99	Wetland 83	40.366789	-80.856933		No	PEM	0.087	9	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
100	Wetland 84	40.366453	-80.856682		Yes	PEM	0.061	9	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
101	Wetland 85a	40.365210	-80.855903		No	PEM	0.135	16.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
102	Wetland 85b	40.365048	-80.855900		No	PSS	0.190	16.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
103	Wetland 86	40.359706	-80.851990		Yes	PEM	0.066	13.5	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
104	Wetland 87	40.354111	-80.848202		Yes	PEM	0.040	27	Category 1		TBD	TBD	TBD	TBD	TBD	TBD	TBD
105	Wetland 88	40.347830	-80.842664		No	PEM	0.370	36	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
106	Wetland 89	40.346783	-80.841568		Yes	PEM	0.014	31	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
107	Wetland 90	40.346294	-80.841199		No	PEM	0.021	33	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
108	Wetland 91	40.346348	-80.840784		Yes	PEM	0.006	31	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
109	Wetland 92a	40.334733	-80.830424		No	PEM	0.346	36.5	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD
110	Wetland 92b	40.334305	-80.830514		No	PFO	0.012	36.5	Modified Category 2		TBD	TBD	TBD	TBD	TBD	TBD	TBD

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WETLAND TABLE**

5/12/2021

	A	B	C	D	E	F	G	H		I	J	K	L	M	N
1	Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	Score	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
		Latitude	Longitude						Category					Temporary Mating Area (acre) ²	Permanent Impact Area (acre)
2															
111	Wetland 93	40.333198	-80.829433	Yes	PSS	0.159	35		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
112	Wetland 94	40.333221	-80.829010	Yes	PEM	0.010	26.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
113	Wetland 95	40.323326	-80.820032	Yes	PEM	0.201	17		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
114	Wetland 96	40.322876	-80.819769	Yes	PEM	0.106	14		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
115	Wetland 97	40.313845	-80.811242	No	PEM	0.128	33		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
116	Wetland 98	40.311940	-80.809354	No	PEM	0.175	15		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
117	Wetland 99a	40.311116	-80.808630	No	PEM	0.610	27.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
118	Wetland 99b	40.310826	-80.808714	No	PFO	0.180	27.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
119	Wetland 100	40.30860516	-80.80645183	No	PEM	0.036	23.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
120	Wetland 101	40.30730611	-80.80523233	No	PEM	1.971	35.5		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
121	Wetland 102	40.30630854	-80.80405333	No	PEM	1.153	37.5		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
122	Wetland 103	40.30178284	-80.79977273	No	PEM	0.125	27.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
123	Wetland 104	40.29064292	-80.79020173	Yes	PEM	0.024	15		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
124	Wetland 105	40.29002665	-80.79003952	Yes	PEM	0.023	20		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
125	Wetland 106	40.28580534	-80.78597524	Yes	PEM	0.106	18.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
126	Wetland 107	40.27748073	-80.77786697	Yes	PEM	0.047	7		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
127	Wetland 108	40.27981908	-80.78107943	Yes	PUB	0.001	20.5		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
128	Wetland 109	40.27505685	-80.77522514	No	PEM	0.075	23		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
129	Wetland 110	40.264138	-80.76271634	No	PEM	0.135	34		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
130	Wetland 111	40.25970448	-80.75751895	No	PEM	0.016	28		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
131	Wetland 112	40.25648922	-80.75098082	Yes	PEM	0.019	36		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
132	Wetland 113	40.28607107	-80.78786341	No	PSS	0.013	38		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
133	Wetland 114	40.34483904	-80.83923541	No	PEM	0.049	45		Category 2	TBD	TBD	TBD	TBD	TBD	TBD
134	Wetland 115	40.38958372	-80.87855117	No	PSS	0.014	44		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD
135	Wetland 116a	40.56175588	-81.04658173	Yes	PEM	0.039	25		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
136	Wetland 116b	40.56165271	-81.04675088	Yes	PSS	0.022	25		Category 1	TBD	TBD	TBD	TBD	TBD	TBD
137	Wetland 117	40.54676236	-81.02935617	No	PSS	0.154	40		Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD

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WETLAND TABLE**

5/12/2021

	A	B	C	D	E	F	G	H	I	J	K	L	M	N		
1	Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts			
		Latitude	Longitude				Score	Category					Temporary Matting Area (acre) ²	Permanent Impact Area (acre)		
2																
138	Wetland 118	40.54568277	-81.02962072	No	PEM	0.082	36	Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD		
139	Wetland 119	40.51993852	-80.99316756	No	PEM	0.020	34	Modified Category 2	TBD	TBD	TBD	TBD	TBD	TBD		
140	Total:					24.461									0.000	0.000

APPENDIX B**U.S. ARMY CORPS OF ENGINEERS WETLAND DATA FORMS****OEPA WETLAND ORAM FORMS****DELINEATED FEATURES PHOTOGRAPHS (WETLANDS)**

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 05-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-002 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 32 **T** Center - 14N **R** 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.587274 **Long.:** -81.082520 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	
Hydric Soil Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks: This PEM wetland is located within a hillside depression. The wetland begins along some existing railroad tracks, which directs surface runoff into a depression. Wetland is open ended outside the current study area. The wetland boundary follows edge of depression.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☒ No ☐	Depth (inches):	<u>3</u>
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	<u>3</u>
Wetland Hydrology Present?		Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps and surface runoff.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-002 PEM

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Typha latifolia</i>		75	☒ 53.6%	OBL
2. <i>Persicaria sagittata</i>		25	☐ 17.9%	OBL
3. <i>Phalaris arundinacea</i>		25	☐ 17.9%	FACW
4. <i>Cirsium arvense</i>		15	☐ 10.7%	FACU
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
11. _____		0	☐ 0.0%	
12. _____		0	☐ 0.0%	
		140	= Total Cover	
Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 100 Multiply by: 1

OBL species 100 x 1 = 100

FACW species 25 x 2 = 50

FAC species 0 x 3 = 0

FACU species 15 x 4 = 60

UPL species 0 x 5 = 0

Column Totals: 140 (A) 210 (B)

Prevalence Index = B/A = 1.500

Hydrophytic Vegetation Indicators:

☒ **Rapid Test for Hydrophytic Vegetation**

☒ **Dominance Test is > 50%**

☒ **Prevalence Index is ≤3.0**¹

☐ **Morphological Adaptations**¹ (Provide supporting data in Remarks or on a separate sheet)

☐ **Problematic Hydrophytic Vegetation**¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-002 PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-18	10YR	4/1	85	7.5YR	5/6	15	C	M,PL	Silty Clay Loam	5% oxidized rhizospheres

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒

No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:Carrollton-Gable 138 kV Project

City/County:Carroll

Sampling Date:05-Nov-18

Applicant/Owner:AEP Ohio Transmission Company

State:OH

Sampling Point:W-MRK-002 UPL

Investigator(s):M.R.Kline, R.C.Massa

Section, Township, Range: S32TCenter - 14NR5W

Landform (hillslope, terrace, etc.):Hillside

Local relief (concave, convex, none):convex

Slope:0.5% / 0.3°

Subregion (LRR or MLRA):LRR N

Lat.:40.587148

Long.: -81.082498

Datum: NAD83

Soil Map Unit Name:WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes

NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year?

Yes

No

(If no, explain in Remarks.)

Are Vegetation

, Soil

, or Hydrology

significantly disturbed?

Are "Normal Circumstances" present?

Yes

No

Are Vegetation

, Soil

, or Hydrology

naturally problematic?

(If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?

Yes

No

Hydric Soil Present?

Yes

No

Wetland Hydrology Present?

Yes

No

Is the Sampled Area within a Wetland?

Yes

No

Remarks:

Upland data point for W-MRK-002. Surrounding land use is maintained lawn.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (minimum of two required)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ True Aquatic Plants (B14)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?

Yes

No

Water Table Present?

Yes

No

Saturation Present? (includes capillary fringe)

Yes

No

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No source of hydrology.

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-002 UPL

Tree Stratum (Plot size: <u>30'</u> radius)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Juglans nigra</u>	10	☒	100.0%	FACU
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
		10	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius)				
1. <u>Glechoma hederacea</u>	60	☒	35.3%	FACU
2. <u>Dactylis glomerata</u>	60	☒	35.3%	FACU
3. <u>Trifolium repens</u>	25	☐	14.7%	FACU
4. <u>Cirsium arvense</u>	25	☐	14.7%	FACU
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
11. _____	0	☐	0.0%	
12. _____	0	☐	0.0%	
		170	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 10 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 180 x 4 = 720

UPL species 0 x 5 = 0

Column Totals: 180 (A) 720 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

Vegetation has been recently mowed.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-002 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-16	10YR	4/3	80	10YR	5/6	20	C	M	Silt Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☐

No ☒

Remarks:

Wetland 1

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/5/2018

0 0

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-002 PEM

0.01 acres

1 1

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 10.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch ☐ point source (nonstormwater)
☐ tile ☒ filling/grading
☐ dike ☒ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

6 16

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

16

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Wetland 1

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/5/2018

16

subtotal this page

0 16

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-1 15

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-002 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

15 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 01	
Date: November 5, 2018	
Description: PEM Category 1 Facing North	

Wetland 01	
Date: November 5, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 01	
Date: November 5, 2018	
Description: PEM Modified Category 2 Facing South	

Wetland 01	
Date: November 5, 2018	
Description: PEM Modified Category 2 Facing West	



PHOTOGRAPHIC RECORD

WETLANDS

Client Name:

AEP

Site Location:

Gable-Carrollton 138 kV Transmission Line Project

Project No.

60582598

Wetland 01

Date:

November 5, 2018

Description:

PEM

Modified Category 2

Soil Pit



WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: East Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 05-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-001 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 32 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.582495 **Long.:** -81.076484 **Datum:** NAD83
Soil Map Unit Name: WmD; Westmoreland-Coshocton silt loams, 15 to 25 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☒ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: PEM wetland is located within a hillside depression, on a maintained golf course. The wetland begins at a small spring seep and is isolated. Water drains from the wetland and dissipates into a mowed upland field. The wetland boundary follows edge of depression and hydrophytic vegetation.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☒ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☒ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☒ No ☐	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	8
		Wetland Hydrology Present?	Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-001 PEM

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)				
1.	<i>Poa palustris</i>	50	☒ 47.6%	FACW
2.	<i>Cyperus esculentus</i>	40	☒ 38.1%	FACW
3.	<i>Trifolium repens</i>	15	☐ 14.3%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		105	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 105 Multiply by: 2.286

OBL species 0 x 1 = 0

FACW species 90 x 2 = 180

FAC species 0 x 3 = 0

FACU species 15 x 4 = 60

UPL species 0 x 5 = 0

Column Totals: 105 (A) 240 (B)

Prevalence Index = B/A = 2.286

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Wetland has been recently mowed.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 05-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-001 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 32 **T** Centr - 14N **R** 5
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 3.0% / 1.7 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.582510 **Long.:** -81.076270 **Datum:** NAD83
Soil Map Unit Name: WmD; Westmoreland-Coshocton silt loams, 15 to 25 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☒ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☐ No ☒

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks: Upland data point for W-MRK-001. Surrounding land use is maintained golf course.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☐ No ☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches):	
Wetland Hydrology Present?		Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-001 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum	(Plot size: <u>5'</u> radius _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<i>Dactylis glomerata</i>	50	☒ 38.5%	FACU
2.	<i>Andropogon virginicus</i>	25	☒ 19.2%	FACU
3.	<i>Achillea millefolium</i>	25	☒ 19.2%	FACU
4.	<i>Trifolium repens</i>	15	☐ 11.5%	FACU
5.	<i>Plantago major</i>	15	☐ 11.5%	FACU
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		130	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 130 x 4 = 520

UPL species 0 x 5 = 0

Column Totals: 130 (A) 520 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

Vegetation has been recently mowed.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-001 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	4/3	100				Silt Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland 2

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/5/2018

0 0

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-001 PEM

0.02 acres

3 3

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7.0 10.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☐ Recovering (3)
☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☐ tile ☒ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

6 16

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

16

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Wetland 2

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/5/2018

16

subtotal this page

0 16

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

0 16

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ X None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ X Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-001 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

16 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 02	
Date: November 5, 2018	
Description: PEM Category 1 Facing North	

Wetland 02	
Date: November 5, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 02	
Date: November 5, 2018	
Description: PEM Modified Category 2 Facing South	

Wetland 02	
Date: November 5, 2018	
Description: PEM Modified Category 2 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name:

AEP

Site Location:

Gable-Carrollton 138 kV Transmission Line Project

Project No.

60582598

Wetland 02

Date:

November 5, 2018

Description:

PEM

Modified Category 2

Soil Pit



WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 05-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-003 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 26 **T** Center - 14N **R** 5W
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.577816 **Long.:** -81.070357 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	
Hydric Soil Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks: This PEM wetland is located on the floodplain of watercourse S-MRK-006. The wetland is within a depression on the floodplain and is seasonally flooded. The wetland boundary follows edge of depression, toe-of-slope, and stream edge.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☐ No ☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches):	
Wetland Hydrology Present?		Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is seasonal flooding.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-003 PEM

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Sapling-Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Shrub Stratum (Plot size: <u>.15'</u> radius _____)			
1. <i>Salix nigra</i>	5	☒ 71.4%	OBL
2. <i>Sambucus nigra ssp. canadensis</i>	2	☒ 28.6%	FAC
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
= Total Cover			
7			
Herb Stratum (Plot size: <u>.5'</u> radius _____)			
1. <i>Phalaris arundinacea</i>	40	☒ 32.0%	FACW
2. <i>Epilobium coloratum</i>	20	☒ 16.0%	FACW
3. <i>Solidago qigantea</i>	20	☒ 16.0%	FACW
4. <i>Eutrochium maculatum</i>	15	☐ 12.0%	FACW
5. <i>Cirsium arvense</i>	10	☐ 8.0%	FACU
6. <i>Glechoma hederacea</i>	10	☐ 8.0%	FACU
7. <i>Persicaria saqittata</i>	10	☐ 8.0%	OBL
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
11. _____	0	☐ 0.0%	_____
12. _____	0	☐ 0.0%	_____
= Total Cover			
125			
Woody Vine Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
= Total Cover			
0			

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 15 x 1 = 15

FACW species 95 x 2 = 190

FAC species 2 x 3 = 6

FACU species 20 x 4 = 80

UPL species 0 x 5 = 0

Column Totals: 132 (A) 291 (B)

Prevalence Index = B/A = 2.205

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-003 PEM

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

Depth (inches)	Matrix		Redox Features					Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²				
0-16	10YR	3/2	95	10YR	5/6	5	C	M,PL	Silt Loam	2% oxidized rhizospheres

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☒ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 05-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-003 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 26 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.578066 **Long.:** -81.070389 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland data point for W-MRK-003. Surrounding land use is forest and maintained right-of-way.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☐ No ☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches):	
Wetland Hydrology Present?		Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-003 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)				
1.	<i>Quercus alba</i>	20	☒ 66.7%	FACU
2.	<i>Quercus rubra</i>	10	☒ 33.3%	FACU
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		30	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5' radius</u>)				
1.	<i>Andropogon virginicus</i>	50	☒ 34.5%	FACU
2.	<i>Solidago canadensis</i>	30	☒ 20.7%	FACU
3.	<i>Dactylis glomerata</i>	30	☒ 20.7%	FACU
4.	<i>Achillea millefolium</i>	20	☐ 13.8%	FACU
5.	<i>Trifolium repens</i>	10	☐ 6.9%	FACU
6.	<i>Daucus carota</i>	5	☐ 3.4%	UPL
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		145	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 170 x 4 = 680

UPL species 5 x 5 = 25

Column Totals: 175 (A) 705 (B)

Prevalence Index = B/A = 4.029

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-003 UPL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR	4/3	100				Silt Loam	
8-16	10YR	6/6	100				Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (LRR N)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (MLRA 147,148)
☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland 3

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/5/2018

0 0

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-003 PEM

0.05 acres

9 9

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

12.0 21.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☐ Precipitation (1)
- ☒ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ Other:

9.5 30.5

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

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

30.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Wetland 3

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/5/2018

30.5

subtotal this page

0 30.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-1 29.5

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-003 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

29.5 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 03	
Date: November 5, 2018	
Description: PEM Category 1 Facing North	

Wetland 03	
Date: November 5, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 03	
Date: November 5, 2018	
Description: PEM Modified Category 2 Facing South	

Wetland 03	
Date: November 5, 2018	
Description: PEM Modified Category 2 Facing West	



PHOTOGRAPHIC RECORD

WETLANDS

Client Name:

AEP

Site Location:

Gable-Carrollton 138 kV Transmission Line Project

Project No.

60582598

Wetland 03

Date:

November 5, 2018

Description:

PEM

Modified Category 2

Soil Pit



WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 06-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-004 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.573578 **Long.:** -81.064316 **Datum:** NAD83
Soil Map Unit Name: BkD; Berks shaly silt loam, 15 to 25 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM wetland begins at a hillside spring seep and drains down the hillside in a slight depression. Water drains to an adjacent upland forest where the water dissipates into the upland vegetation. The wetland boundary follows edge of depression and hydrophytic vegetation.	

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☒ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☒ No ☐	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	0
Wetland Hydrology Present?		Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-004 PEM

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Sapling-Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Shrub Stratum (Plot size: <u>.15'</u> radius _____)			
1. <u>Rosa multiflora</u>	10	☒ 66.7%	FACU
2. <u>Rubus allegheniensis</u>	5	☒ 33.3%	FACU
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
= Total Cover			
15			
Herb Stratum (Plot size: <u>.5'</u> radius _____)			
1. <u>Phalaris arundinacea</u>	60	☒ 50.0%	FACW
2. <u>Dichanthelium clandestinum</u>	50	☒ 41.7%	FAC
3. <u>Solidago canadensis</u>	10	☐ 8.3%	FACU
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
11. _____	0	☐ 0.0%	_____
12. _____	0	☐ 0.0%	_____
= Total Cover			
120			
Woody Vine Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
= Total Cover			
0			

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>60</u>	x 2 =	<u>120</u>
FAC species	<u>50</u>	x 3 =	<u>150</u>
FACU species	<u>25</u>	x 4 =	<u>100</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>135</u> (A)		<u>370</u> (B)

Prevalence Index = B/A = 2.741

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: **W-MRK-004 PEM**

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

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-14	2.5Y	6/2	95	2.5Y	5/6	5	C	M	Silty Clay Loam	
14-16	2.5Y	7/1	90	2.5Y	5/6	10	C	M	Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (LRR N)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (MLRA 147,148)
☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 06-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-004 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.573506 **Long.:** -81.064226 **Datum:** NAD83
Soil Map Unit Name: BkD; Berks shaly silt loam, 15 to 25 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks: Upland data point for W-MRK-004. Surrounding land use is forest and existing right-of-way.		

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____		Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-004 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: <u>.15'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Rubus allegheniensis</u>	50	☒ 100.0%	FACU
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		50	= Total Cover	
Herb Stratum	(Plot size: <u>.5'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Dichanthelium clandestinum</u>	50	☒ 41.7%	FAC
2.	<u>Glechoma hederacea</u>	50	☒ 41.7%	FACU
3.	<u>Solidago canadensis</u>	20	☐ 16.7%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		120	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 50 x 3 = 150

FACU species 120 x 4 = 480

UPL species 0 x 5 = 0

Column Totals: 170 (A) 630 (B)

Prevalence Index = B/A = 3.706

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-004 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	2.5Y	4/3	100				Silt Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland 4

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

Field Id:

W-MRK-004 PEM

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.19 acres

8 9

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 18.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ Other:

6 24

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

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

24

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 4

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

24

subtotal this page

0 24

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4 20

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 0 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ x Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-004 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

20 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 04	
Date: November 6, 2018	
Description: PEM Category 1 Facing North	

Wetland 04	
Date: November 6, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 04	
Date: November 6, 2018	
Description: PEM Category 1 Facing South	

Wetland 04	
Date: November 6, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD

WETLANDS

Client Name:

AEP

Site Location:

Gable-Carrollton 138 kV Transmission Line Project

Project No.

60582598

Wetland 04

Date:

November 6, 2018

Description:

PEM

Category 1

Soil Pit



WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 06-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-005 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center -14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.572856 **Long.:** -81.063070 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM wetland begins at several hillside spring seeps and drains downslope within hillside depressions. Surrounding area is a mowed and maintained hayfield. Two watercourses also add to the hydrology of the wetland, S-MRK-007 and S-MRK-008. Wetland is open ended outside of the current study area. The wetland boundary follows edge of depression and hydrophytic vegetation.	

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☒ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☒ No ☐	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	0
Wetland Hydrology Present?		Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps and stream flow.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-005 PEM

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Juncus effusus</i>		60	☒ 38.7%	FACW
2. <i>Cyperus esculentus</i>		60	☒ 38.7%	FACW
3. <i>Carex vulpinoidea</i>		25	☐ 16.1%	OBL
4. <i>Echinochloa crus-galli</i>		10	☐ 6.5%	FAC
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
11. _____		0	☐ 0.0%	
12. _____		0	☐ 0.0%	
		155	= Total Cover	
Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 25 Multiply by: 1

OBL species 25 x 1 = 25

FACW species 120 x 2 = 240

FAC species 10 x 3 = 30

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 155 (A) 295 (B)

Prevalence Index = B/A = 1.903

Hydrophytic Vegetation Indicators:

☒ **Rapid Test for Hydrophytic Vegetation**

☒ **Dominance Test is > 50%**

☒ **Prevalence Index is ≤3.0¹**

☐ **Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation¹ (Explain)**

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Indicators for Problematic Hydric Soils³ :

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 06-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-005-006 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.572493 **Long.:** -81.062671 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland data point for W-MRK-005. Surrounding land use is hayfield and existing right-of-way.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____	
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-005-006 UPL

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Sapling-Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Herb Stratum (Plot size: <u>5'</u> radius _____)			
1. <i>Phleum pratense</i>	100	☒ 71.4%	FACU
2. <i>Glechoma hederacea</i>	20	☐ 14.3%	FACU
3. <i>Daucus carota</i>	10	☐ 7.1%	UPL
4. <i>Taraxacum officinale</i>	10	☐ 7.1%	FACU
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
11. _____	0	☐ 0.0%	_____
12. _____	0	☐ 0.0%	_____
= Total Cover			
140			
Woody Vine Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
= Total Cover			
0			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 130 x 4 = 520

UPL species 10 x 5 = 50

Column Totals: 140 (A) 570 (B)

Prevalence Index = B/A = 4.071

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SoilSampling Point: **W-MRK-005-006 UPL****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-14	2.5Y	5/2	100						Silt Loam	
14-16	2.5Y	5/1	95	2.5Y	6/6	5	C	M	Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix**Hydric Soil Indicators:**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (LRR N)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (MLRA 147,148)
☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland 5

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

Field Id:

W-MRK-005 PEM

2 2

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

0.97 acres

2 4

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

12.0 16.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☒ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☒ tile ☐ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

7.5 23.5

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☒ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

23.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 5

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

23.5

subtotal this page

0 23.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 25.5

max 20pts.

subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☒ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-005 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

25.5 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 05	
Date: November 6, 2018	
Description: PEM Category 1 Facing North	

Wetland 05	
Date: November 6, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 05	
Date: November 6, 2018	
Description: PEM Category 1 Facing South	

Wetland 05	
Date: November 6, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 05	
Date: November 6, 2018	
Description: PEM Category 1 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 06-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-006 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 25 **T** Center - 14N **R** 5
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.572493 **Long.:** -81.062671 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	

Remarks:
This PEM wetland begins at a hillside spring seep that originates under structure number 294. Water drains downslope within a minor depression and open ends outside the current study area. The wetland boundary follows edge of depression.

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☒ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-neutral Test (D5)
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Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): <u>0</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>	Wetland Hydrology Present? Yes ☒ No ☐
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Source of hydrology is spring seeps.

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: W-MRK-006 PEM

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum		(Plot size: _____)		
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum		(Plot size: _____)		
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum		(Plot size: 5' radius _____)		
1.	<i>Juncus effusus</i>	75	☒ 55.6%	FACW
2.	<i>Scirpus atrovirens</i>	25	☐ 18.5%	OBL
3.	<i>Cyperus esculentus</i>	25	☐ 18.5%	FACW
4.	<i>Phleum pratense</i>	10	☐ 7.4%	FACU
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		135	= Total Cover	
Woody Vine Stratum		(Plot size: _____)		
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 25	x 1 = 25
FACW species 100	x 2 = 200
FAC species 0	x 3 = 0
FACU species 10	x 4 = 40
UPL species 0	x 5 = 0
Column Totals: 135 (A)	265 (B)

Prevalence Index = B/A = 1.963

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Soil

Sampling Point: W-MRK-006 PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-14	2.5Y	5/1	80	10YR	5/6	20	C	M	Silty Clay Loam	
14-16	2.5Y	6/1	75	10YR	5/8	25	C	M	Clay	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☒

No ☐

Remarks:

US Army Corps of Engineers

Eastern Mountains and Piedmont - Version 2.0

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 06-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-005-006 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.572493 **Long.:** -81.062671 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks: Upland data point for W-MRK-005. Surrounding land use is hayfield and existing right-of-way.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____	
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-005-006 UPL

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Phleum pratense</i>		100	☒ 71.4%	FACU
2. <i>Glechoma hederacea</i>		20	☐ 14.3%	FACU
3. <i>Daucus carota</i>		10	☐ 7.1%	UPL
4. <i>Taraxacum officinale</i>		10	☐ 7.1%	FACU
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
11. _____		0	☐ 0.0%	
12. _____		0	☐ 0.0%	
		140	= Total Cover	
Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>130</u>	x 4 = <u>520</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column Totals: <u>140</u> (A)	<u>570</u> (B)
Prevalence Index = B/A = <u>4.071</u>	

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-005-006 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-14	2.5Y	5/2	100						Silt Loam	
14-16	2.5Y	5/1	95	2.5Y	6/6	5	C	M	Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☐

No ☒

Remarks:

Wetland 6

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

0 0

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-006 PEM

0.04 acres

2 2

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 11.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☒ tile ☐ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

7.5 18.5

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☒ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

18.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Wetland 6

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

18.5

subtotal this page

0 18.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 20.5

max 20pts.

subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☒ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-006 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

20.5 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 06	
Date: November 6, 2018	
Description: PEM Category 1 Facing North	

Wetland 06	
Date: November 6, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
----------------------------	--	--------------------------------

Wetland 06	
Date: November 6, 2018	
Description: PEM Category 1 Facing South	

Wetland 06	
Date: November 6, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
----------------------------	--	--------------------------------

Wetland 06	
Date: November 6, 2018	
Description: PEM Category 1 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:Carrollton-Gable 138 kV Project

City/County:Carroll

Sampling Date:06-Nov-18

Applicant/Owner:AEP Ohio Transmission Company

State:OH

Sampling Point:W-MRK-007 PEM

Investigator(s):M.R.Kline, R.C.Massa

Section, Township, Range: S25TCenter - 14NR5

Landform (hillslope, terrace, etc.):Hillside

Local relief (concave, convex, none):concave

Slope:3.0% / 1.7 °

Subregion (LRR or MLRA):LRR N

Lat.:40.571705

Long.: -81.061710

Datum: NAD83

Soil Map Unit Name:BkE; Berks channery silt loam, 25 to 35 percent slopes

NWI classification:N/A

Are climatic/hydrologic conditions on the site typical for this time of year?

Yes

No

(If no, explain in Remarks.)

Are Vegetation

, Soil

, or Hydrology

significantly disturbed?

Are "Normal Circumstances" present?

Yes

No

Are Vegetation

, Soil

, or Hydrology

naturally problematic?

(If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?

Yes

No

Hydric Soil Present?

Yes

No

Wetland Hydrology Present?

Yes

No

Is the Sampled Area within a Wetland?

Yes

No

Remarks:

This PEM wetland begins at a hillside spring seep and drains down the hillside in a depression created by the surrounding topography. Wetland is open ended and continues outside current study area. The wetland boundary follows edge of depression.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (minimum of two required)

☐ Surface Water (A1)

☒ High Water Table (A2)

☒ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ True Aquatic Plants (B14)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☒ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☒ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?

Yes

No

Water Table Present?

Yes

No

Saturation Present? (includes capillary fringe)

Yes

No

Depth (inches):

0

0

0

Wetland Hydrology Present?

Yes

No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Source of hydrology is spring seeps.

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: W-MRK-007 PEM

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: 5' radius _____)				
1.	<i>Juncus effusus</i>	50	☒ 29.4%	FACW
2.	<i>Scirpus atrovirens</i>	50	☒ 29.4%	OBL
3.	<i>Phalaris arundinacea</i>	25	☐ 14.7%	FACW
4.	<i>Cyperus esculentus</i>	25	☐ 14.7%	FACW
5.	<i>Phleum pratense</i>	20	☐ 11.8%	FACU
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		170	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 50	x 1 = 50
FACW species 100	x 2 = 200
FAC species 0	x 3 = 0
FACU species 20	x 4 = 80
UPL species 0	x 5 = 0
Column Totals: 170 (A)	330 (B)

Prevalence Index = B/A = 1.941

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

[illegible]

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:Carrollton-Gable 138 kV Project

City/County:Carroll

Sampling Date:06-Nov-18

Applicant/Owner:AEP Ohio Transmission Company

State:OH

Sampling Point:W-MRK-007 UPL

Investigator(s):M.R.Kline, R.C.Massa

Section, Township, Range: S25TCenter - 14NR5W

Landform (hillslope, terrace, etc.):Hillside

Local relief (concave, convex, none):convex

Slope:3.0% / 1.7 °

Subregion (LRR or MLRA):LRR N

Lat.:40.571532

Long.: -81.061573

Datum: NAD83

Soil Map Unit Name:BkE; Berks channery silt loam, 25 to 35 percent slopes

NWI classification:N/A

Are climatic/hydrologic conditions on the site typical for this time of year?

Yes

No

(If no, explain in Remarks.)

Are Vegetation

, Soil

, or Hydrology

significantly disturbed?

Are "Normal Circumstances" present?

Yes

No

Are Vegetation

, Soil

, or Hydrology

naturally problematic?

(If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?

Yes

No

Hydric Soil Present?

Yes

No

Wetland Hydrology Present?

Yes

No

Is the Sampled Area within a Wetland?

Yes

No

Remarks:

Upland data point for W-MRK-007. Surrounding land use is hayfield.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ True Aquatic Plants (B14)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?

Yes

No

Water Table Present?

Yes

No

Saturation Present? (includes capillary fringe)

Yes

No

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No source of hydrology.

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-007 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)				
1.	<i>Phleum pratense</i>	80	☒ 53.3%	FACU
2.	<i>Andropogon virginicus</i>	20	☐ 13.3%	FACU
3.	<i>Trifolium repens</i>	20	☐ 13.3%	FACU
4.	<i>Achillea millefolium</i>	20	☐ 13.3%	FACU
5.	<i>Daucus carota</i>	10	☐ 6.7%	UPL
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		150	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 140 x 4 = 560

UPL species 10 x 5 = 50

Column Totals: 150 (A) 610 (B)

Prevalence Index = B/A = 4.067

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-007 UPL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	5/2	100				Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (LRR N)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (MLRA 147,148)
☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland 7

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

Field Id:

W-MRK-007 PEM

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.09 acres

2 3

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 12.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☒ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ Other:

7.5 19.5

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

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

19.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 7

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/6/2018

Field Id:

W-MRK-007 PEM

19.5

subtotal this page

0 19.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 21.5

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☒ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

21.5 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 07	
Date: November 6, 2018	
Description: PEM Category 1 Facing North	

Wetland 07	
Date: November 6, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 07	
Date: November 6, 2018	
Description: PEM Category 1 Facing South	

Wetland 07	
Date: November 6, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD

WETLANDS

Client Name:

AEP

Site Location:

Gable-Carrollton 138 kV Transmission Line Project

Project No.

60582598

Wetland 07

Date:

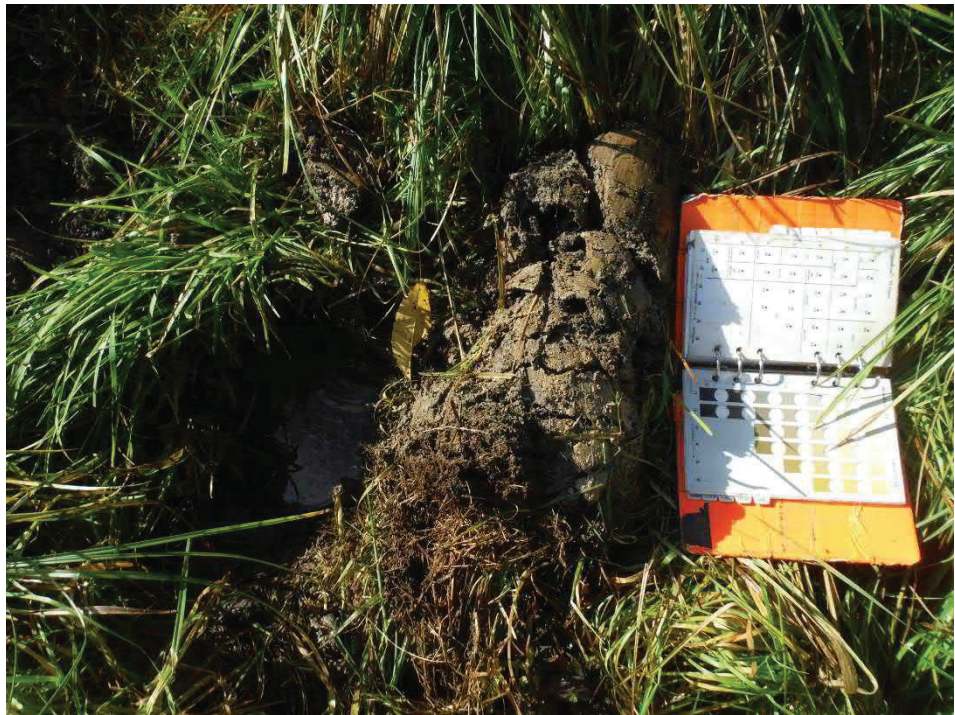
November 6, 2018

Description:

PEM

Category 1

Soil Pit



WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:Carrollton-Gable 138 kV Project

City/County:Carroll

Sampling Date:07-Nov-18

Applicant/Owner:AEP Ohio Transmission Company

State:OH

Sampling Point:W-MRK-009 PEM

Investigator(s):M.R.Kline, R.C.Massa

Section, Township, Range: S25TCenter - 14NR5

Landform (hillslope, terrace, etc.):Hillside

Local relief (concave, convex, none):concave

Slope:3.0% / 1.7 °

Subregion (LRR or MLRA):LRR N

Lat.:40.570306

Long.: -81.060048

Datum: NAD83

Soil Map Unit Name:BkE; Berks channery silt loam, 25 to 35 percent slopes

NWI classification:N/A

Are climatic/hydrologic conditions on the site typical for this time of year?

Yes

No

(If no, explain in Remarks.)

Are Vegetation

, Soil

, or Hydrology

significantly disturbed?

Are "Normal Circumstances" present?

Yes

No

Are Vegetation

, Soil

, or Hydrology

naturally problematic?

(If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?

Yes

No

Hydric Soil Present?

Yes

No

Wetland Hydrology Present?

Yes

No

Is the Sampled Area within a Wetland?

Yes

No

Remarks:

This PEM wetland begins at a hillside spring seep and drains downslope toward watercourse S-MRK-009. Water draining down the slope follows a very shallow depression. Water dissipates into upland right-of-way before reaching W-MRK-008. Wetland boundary follows edge of depression.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (minimum of two required)

☐ Surface Water (A1)

☒ High Water Table (A2)

☒ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ True Aquatic Plants (B14)

☐ Hydrogen Sulfide Odor (C1)

☒ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?

Yes

No

Depth (inches):

Water Table Present?

Yes

No

Depth (inches):

Saturation Present? (includes capillary fringe)

Yes

No

Depth (inches):

Wetland Hydrology Present?

Yes

No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Source of hydrology is spring seeps and high water table.

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-009 PEM

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum	(Plot size: 5' radius _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<i>Dichanthelium clandestinum</i>	90	☒ 62.1%	FAC
2.	<i>Onoclea sensibilis</i>	25	☐ 17.2%	FACW
3.	<i>Juncus effusus</i>	10	☐ 6.9%	FACW
4.	<i>Persicaria saqttata</i>	10	☐ 6.9%	OBL
5.	<i>Euthamia graminifolia</i>	5	☐ 3.4%	FAC
6.	<i>Eupatorium perfoliatum</i>	5	☐ 3.4%	FACW
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		145	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 10 Multiply by: 1

OBL species 10 x 1 = 10

FACW species 40 x 2 = 80

FAC species 95 x 3 = 285

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 145 (A) 375 (B)

Prevalence Index = B/A = 2.586

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-009 PEM

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-008-009 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 25 **T** Center - 14N **R** 5
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 3.0% / 1.7 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.570387 **Long.:** -81.060031 **Datum:** NAD83
Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:
Upland data point for W-MRK-008 and W-MRK-009. Surrounding land use is forest and existing right-of-way.

Hydrology

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)
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Field Observations:	Wetland Hydrology Present? Yes ☐ No ☒
Surface Water Present? Yes ☐ No ☒ Depth (inches): _____	
Water Table Present? Yes ☐ No ☒ Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No source of hydrology.

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-008-009 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: <u>.15'</u> radius)				
1.	<u>Rubus allegheniensis</u>	10	☒ 100.0%	FACU
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		10	= Total Cover	
Herb Stratum (Plot size: <u>.5'</u> radius)				
1.	<u>Dichanthelium clandestinum</u>	50	☒ 47.6%	FAC
2.	<u>Dactylis glomerata</u>	50	☒ 47.6%	FACU
3.	<u>Solidago canadensis</u>	5	☐ 4.8%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		105	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 50 x 3 = 150

FACU species 65 x 4 = 260

UPL species 0 x 5 = 0

Column Totals: 115 (A) 410 (B)

Prevalence Index = B/A = 3.565

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

[illegible]

Wetland 8

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

Field Id:

W-MRK-009 PEM

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

0.14 acres

9 10

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 19.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☐ tile ☒ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

7 26

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

26

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 8

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

26

subtotal this page

0 26

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 28

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-009 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

28 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 08	
Date: November 7, 2018	
Description: PEM Category 1 Facing North	

Wetland 08	
Date: November 7, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 08	
Date: November 7, 2018	
Description: PEM Category 1 Facing South	

Wetland 08	
Date: November 7, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD

WETLANDS

Client Name:

AEP

Site Location:

Gable-Carrollton 138 kV Transmission Line Project

Project No.

60582598

Wetland 08

Date:

November 7, 2018

Description:

PEM

Category 1

Soil Pit



WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-008 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.570107 **Long.:** -81.059687 **Datum:** NAD83
Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM wetland is located on the floodplain of watercourse S-MRK-009. The wetland is influenced by seasonal flooding and some hillside spring seeps that follow minor depressions down the hillside. Wetland boundary follows toe-of-slope, hydrophytic vegetation, and hillside depressions.	

Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
☒ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☒ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☒ No ☐	Depth (inches):	0.5
Water Table Present?	Yes ☒ No ☐	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	0
		Wetland Hydrology Present?	Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps and seasonal flooding.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-008 PEM

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
= Total Cover			
Sapling-Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
= Total Cover			
Shrub Stratum (Plot size: <u>.15'</u> radius _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
= Total Cover			
Herb Stratum (Plot size: <u>.5'</u> radius _____)			
1. <u>Dichanthelium clandestinum</u>	50	☒ 27.0%	FAC
2. <u>Juncus effusus</u>	40	☒ 21.6%	FACW
3. <u>Scirpus atrovirens</u>	30	☒ 16.2%	OBL
4. <u>Eupatorium perfoliatum</u>	20	☐ 10.8%	FACW
5. <u>Cyperus esculentus</u>	20	☐ 10.8%	FACW
6. <u>Epilobium coloratum</u>	15	☐ 8.1%	FACW
7. <u>Onoclea sensibilis</u>	5	☐ 2.7%	FACW
8. <u>Mimulus ringens</u>	5	☐ 2.7%	OBL
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
11. _____	0	☐ 0.0%	_____
12. _____	0	☐ 0.0%	_____
= Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
= Total Cover			

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 35 x 1 = 35

FACW species 100 x 2 = 200

FAC species 50 x 3 = 150

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 185 (A) 385 (B)

Prevalence Index = B/A = 2.081

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: **W-MRK-008 PEM**

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

Depth (inches)	Matrix		Redox Features					Texture	Remarks
	Color (moist)		Color (moist)		%	Type ¹	Loc ²		
0-6	5Y	4/1	100					Silty Clay Loam	
6-16	5Y	5/1	80	10YR	5/6	20	C	M,PL	10% oxidized rhizospheres

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (LRR N)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (MLRA 147,148)
☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18

Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-008-009 UPL

Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 25 **T** Center - 14N **R** 5

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 3.0% / 1.7 °

Subregion (LRR or MLRA): LRR N **Lat.:** 40.570387 **Long.:** -81.060031 **Datum:** NAD83

Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:
Upland data point for W-MRK-008 and W-MRK-009. Surrounding land use is forest and existing right-of-way.

Hydrology

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

Field Observations:		Wetland Hydrology Present?	Yes ☐ No ☒
Surface Water Present?	Yes ☐ No ☒ Depth (inches): _____		
Water Table Present?	Yes ☐ No ☒ Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒ Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No source of hydrology.

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-008-009 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: <u>.15'</u> radius)				
1.	<i>Rubus allegheniensis</i>	10	☒ 100.0%	FACU
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		10	= Total Cover	
Herb Stratum (Plot size: <u>.5'</u> radius)				
1.	<i>Dichanthelium clandestinum</i>	50	☒ 47.6%	FAC
2.	<i>Dactylis glomerata</i>	50	☒ 47.6%	FACU
3.	<i>Solidago canadensis</i>	5	☐ 4.8%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		105	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 50 x 3 = 150

FACU species 65 x 4 = 260

UPL species 0 x 5 = 0

Column Totals: 115 (A) 410 (B)

Prevalence Index = B/A = 3.565

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-008-009 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹		
0-6	2.5Y	5/3	100					Silt Loam	
6-16	2.5Y	5/4	100					Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☐

No ☒

Remarks:

Wetland 9

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

Field Id:

W-MRK-008 PEM

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.10 acres

9 10

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11.0 21.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☐ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ Other:

7 28

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

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

28

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 9

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

28

subtotal this page

0 28

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 30

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-008 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Modified

Category 2

30 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 09	
Date: November 7, 2018	
Description: PEM Modified Category 2 Facing North	

Wetland 09	
Date: November 7, 2018	
Description: PEM Modified Category 2 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 09	
Date: November 7, 2018	
Description: PEM Modified Category 2 Facing South	

Wetland 09	
Date: November 7, 2018	
Description: PEM Modified Category 2 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
----------------------------	--	--------------------------------

Wetland 09	
Date: November 7, 2018	
Description: PEM Modified Category 2 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-010 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 4.0% / 2.3 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.569419 **Long.:** -81.058619 **Datum:** NAD83
Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM wetland begins at a hillside spring seep located on a side slope. Water drains down the hillside to the forest edge where it dissipates into an upland forest. The wetland boundary follows the edge of depression and hydrophytic vegetation.	

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☒ No ☐	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	8
Wetland Hydrology Present?		Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-010 PEM

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
= Total Cover			
Sapling-Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
= Total Cover			
Shrub Stratum (Plot size: .15' radius _____)			
1. <i>Rubus allegheniensis</i>	5	☒ 100.0%	FACU
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
= Total Cover			
Herb Stratum (Plot size: .5' radius _____)			
1. <i>Dichanthelium clandestinum</i>	90	☒ 62.1%	FAC
2. <i>Poa palustris</i>	30	☒ 20.7%	FACW
3. <i>Solidago rigida</i>	10	☐ 6.9%	FACW
4. <i>Onoclea sensibilis</i>	5	☐ 3.4%	FACW
5. <i>Eupatorium perfoliatum</i>	5	☐ 3.4%	FACW
6. <i>Glechoma hederacea</i>	5	☐ 3.4%	FACU
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
11. _____	0	☐ 0.0%	_____
12. _____	0	☐ 0.0%	_____
= Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
= Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

 Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0 x 1 = 0
 FACW species 50 x 2 = 100
 FAC species 90 x 3 = 270
 FACU species 10 x 4 = 40
 UPL species 0 x 5 = 0
 Column Totals: 150 (A) 410 (B)

 Prevalence Index = B/A = 2.733

Hydrophytic Vegetation Indicators:
☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is > 50%
☒ Prevalence Index is ≤ 3.0¹
☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:
Four Vegetation Strata:
 Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
 Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
 Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
 Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:
 Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
 Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
 Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
 Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.
 Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-010 PEM

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

Depth (inches)	Matrix		Redox Features					Texture	Remarks	
	Color (moist)		%	Color (moist)		%	Type ¹			Loc ²
0-8	2.5Y	5/2	95	10YR	5/6	5	C	M,PL	Silty Clay Loam	2% oxidized rhizospheres
8-14	2.5Y	5/3	100							

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)☐ Histic Epipedon (A2)☐ Black Histic (A3)☐ Hydrogen Sulfide (A4)☐ Stratified Layers (A5)☐ 2 cm Muck (A10) (LRR N)☐ Depleted Below Dark Surface (A11)☐ Thick Dark Surface (A12)☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)☐ Sandy Gleyed Matrix (S4)☐ Sandy Redox (S5)☐ Stripped Matrix (S6)

☐ Dark Surface (S7)☐ Polyvalue Below Surface (S8) (MLRA 147,148)☐ Thin Dark Surface (S9) (MLRA 147, 148)☐ Loamy Gleyed Matrix (F2)☒ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)☐ Umbric Surface (F13) (MLRA 136, 122)☐ Piedmont Floodplain Soils (F19) (MLRA 148)☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:
Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:
Rock refusal at 14 inches.

US Army Corps of Engineers

Eastern Mountains and Piedmont - Version 2.0

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-010-011 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.569012 **Long.:** -81.058091 **Datum:** NAD83
Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland data point for W-MRK-010 and W-MRK-011. Surrounding land use is forest and existing right-of-way.		

Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____	
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-010-011 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: <u>.15'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Rubus allegheniensis</u>	25	☒ 100.0%	FACU
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		25	= Total Cover	
Herb Stratum	(Plot size: <u>.5'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Phleum pratense</u>	100	☒ 83.3%	FACU
2.	<u>Solidago canadensis</u>	10	☐ 8.3%	FACU
3.	<u>Dactylis glomerata</u>	10	☐ 8.3%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		120	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 145 x 4 = 580

UPL species 0 x 5 = 0

Column Totals: 145 (A) 580 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-010-011 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	5/4	100				Silt Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☐

No ☒

Remarks:

Wetland 10

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-010 PEM

0.14 acres

9 10

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 19.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☐ tile ☒ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

7 26

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

26

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 10

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

26

subtotal this page

0 26

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Praires (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 28

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-010 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

28 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 10	
Date: November 7, 2018	
Description: PEM Category 1 Facing North	

Wetland 10	
Date: November 7, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 10	
Date: November 7, 2018	
Description: PEM Category 1 Facing South	

Wetland 10	
Date: November 7, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 10	
Date: November 7, 2018	
Description: PEM Category 1 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-011 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.568878 **Long.:** -81.057869 **Datum:** NAD83
Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM wetland begins at a hillside spring seep and drains downslope to form watercourse S-MRK-010. Water draining down the slope follows a depression and becomes a more defined stream outside the established right-of-way. Wetland boundary follows edge of depression and hydrophytic vegetation.	

Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☒ No ☐	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	8
		Wetland Hydrology Present?	Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps and high water table.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-011 PEM

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum	(Plot size: <u>5'</u> radius _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<i>Leersia oryzoides</i>	50	☒ 29.4%	OBL
2.	<i>Juncus effusus</i>	30	☒ 17.6%	FACW
3.	<i>Dichanthelium clandestinum</i>	25	☒ 14.7%	FAC
4.	<i>Cyperus esculentus</i>	25	☒ 14.7%	FACW
5.	<i>Carex crinita</i>	20	☐ 11.8%	OBL
6.	<i>Onoclea sensibilis</i>	10	☐ 5.9%	FACW
7.	<i>Euthamia graminifolia</i>	10	☐ 5.9%	FAC
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		170	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 70 Multiply by: 1

OBL species 70 x 1 = 70

FACW species 65 x 2 = 130

FAC species 35 x 3 = 105

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 170 (A) 305 (B)

Prevalence Index = B/A = 1.794

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-010-011 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.569012 **Long.:** -81.058091 **Datum:** NAD83
Soil Map Unit Name: BkE; Berks channery silt loam, 25 to 35 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland data point for W-MRK-010 and W-MRK-011. Surrounding land use is forest and existing right-of-way.		

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____	
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-010-011 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: <u>.15'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Rubus allegheniensis</u>	25	☒ 100.0%	FACU
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		25	= Total Cover	
Herb Stratum	(Plot size: <u>.5'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Phleum pratense</u>	100	☒ 83.3%	FACU
2.	<u>Solidago canadensis</u>	10	☐ 8.3%	FACU
3.	<u>Dactylis glomerata</u>	10	☐ 8.3%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		120	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 145 x 4 = 580

UPL species 0 x 5 = 0

Column Totals: 145 (A) 580 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-010-011 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	5/4	100				Silt Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☐

No ☒

Remarks:

Wetland 11

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

0 0

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-011 PEM

0.09 acres

8 8

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 17.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☐ tile ☒ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

8 25

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☒ Fair (3)
☐ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

25

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Wetland 11

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

25

subtotal this page

0 25

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

1 26

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-011 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

26 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 11	
Date: November 7, 2018	
Description: PEM Category 1 Facing North	

Wetland 11	
Date: November 7, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 11	
Date: November 7, 2018	
Description: PEM Category 1 Facing South	

Wetland 11	
Date: November 7, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 11	
Date: November 7, 2018	
Description: PEM Category 1 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-012 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.568185 **Long.:** -81.057073 **Datum:** NAD83
Soil Map Unit Name: CoB; Coshocton-Keene silt loams, 3 to 8 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM wetland begins at a culvert, draining from an adjacent well pad. Water drains downslope within a roadside swale and eventually dissipates into an upland forest. The wetland boundary follows the edge of swale.	

Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
☒ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☒ No ☐	Depth (inches):	1
Water Table Present?	Yes ☒ No ☐	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	0
Wetland Hydrology Present?		Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is surface runoff.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-012 PEM

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Sapling-Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Shrub Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
= Total Cover			
0			
Herb Stratum (Plot size: 5' radius _____)			
1. <i>Pericaria saqiata</i>	75	☒ 55.6%	OBL
2. <i>Cyperus esculentus</i>	40	☒ 29.6%	FACW
3. <i>Juncus effusus</i>	10	☐ 7.4%	FACW
4. <i>Epilobium coloratum</i>	10	☐ 7.4%	FACW
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
7. _____	0	☐ 0.0%	_____
8. _____	0	☐ 0.0%	_____
9. _____	0	☐ 0.0%	_____
10. _____	0	☐ 0.0%	_____
11. _____	0	☐ 0.0%	_____
12. _____	0	☐ 0.0%	_____
= Total Cover			
135			
Woody Vine Stratum (Plot size: _____)			
1. _____	0	☐ 0.0%	_____
2. _____	0	☐ 0.0%	_____
3. _____	0	☐ 0.0%	_____
4. _____	0	☐ 0.0%	_____
5. _____	0	☐ 0.0%	_____
6. _____	0	☐ 0.0%	_____
= Total Cover			
0			

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 75 Multiply by: 1

OBL species 75 x 1 = 75

FACW species 60 x 2 = 120

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 135 (A) 195 (B)

Prevalence Index = B/A = 1.444

Hydrophytic Vegetation Indicators:

☒ **Rapid Test for Hydrophytic Vegetation**

☒ **Dominance Test is > 50%**

☒ **Prevalence Index is ≤ 3.0¹**

☐ **Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation¹ (Explain)**

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-012 PEM

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

Depth (inches)	Matrix		Redox Features					Loc ²	Texture	Remarks
	Color (moist)		Color (moist)		%		Type ¹			
0-4	2.5Y	5/2	98	10YR	6/6	20	C	M	Silty Clay Loam	
4-16	2.5Y	6/6	100						Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (LRR N)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (MLRA 147,148)
☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

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

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-012 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 25 T Center - 14N R 5
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.568154 **Long.:** -81.056936 **Datum:** NAD83
Soil Map Unit Name: CoB; Coshocton-Keene silt loams, 3 to 8 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland data point for W-MRK-012. Surrounding land use is agricultural field.		

Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____	
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes ☐ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-012 UPL

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
0 = Total Cover				
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
0 = Total Cover				
Shrub Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
0 = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius _____)				
1. <u>Zea mays</u>	100	☒	100.0%	UPL
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
11. _____	0	☐	0.0%	
12. _____	0	☐	0.0%	
0 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
0 = Total Cover				

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 100 x 5 = 500

Column Totals: 100 (A) 500 (B)

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-012 UPL

[illegible]

Wetland 12

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

0	0
---	---

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-012 PEM

0.02 acres

1	1
---	---

max 14 pts. subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4.0	5.0
-----	-----

max 30 pts. subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☐ Recovering (3)
☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

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

3	8
---	---

max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ Recovered (3)
☐ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☐ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

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

8

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Wetland 12

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

Field Id:

W-MRK-012 PEM

8

subtotal this page

0 8

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 10

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

10 GRAND TOTAL(max 100 pts)

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 12	
Date: November 7, 2018	
Description: PEM Category 1 Facing North	

Wetland 12	
Date: November 7, 2018	
Description: PEM Category 1 Facing East	

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
----------------------------	--	--------------------------------

Wetland 12	
Date: November 7, 2018	
Description: PEM Category 1 Facing South	

Wetland 12	
Date: November 7, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 12	
Date: November 7, 2018	
Description: PEM Category 1 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-013 PFO
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 19 T Center - 14N R 5
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.565898 **Long.:** -81.054224 **Datum:** NAD83
Soil Map Unit Name: Or; Orrville silt loam, 0 to 3 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PFO wetland is located in a depression adjacent to the existing right-of-way edge. Wetland is within the floodplain of S-MRK-012 and is inundated frequently by precipitation and stream flooding. Wetland boundary follows edge of depression and stream edge.	

Hydrology

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
☒ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☒ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☒ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☒ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☒ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☒ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☒ No ☐	Depth (inches):	4
Water Table Present?	Yes ☒ No ☐	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	0
		Wetland Hydrology Present?	Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps and seasonal flooding.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-013 PFO

Tree Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
(Plot size: <u>30'</u> radius)				
1. <i>Salix nigra</i>	60	☒ 100.0%	OBL	
2. _____	0	☐ 0.0%		
3. _____	0	☐ 0.0%		
4. _____	0	☐ 0.0%		
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
8. _____	0	☐ 0.0%		
60 = Total Cover				
(Plot size: <u>15'</u> radius)				
1. <i>Salix nigra</i>	25	☒ 100.0%	OBL	
2. _____	0	☐ 0.0%		
3. _____	0	☐ 0.0%		
4. _____	0	☐ 0.0%		
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
8. _____	0	☐ 0.0%		
9. _____	0	☐ 0.0%		
10. _____	0	☐ 0.0%		
25 = Total Cover				
(Plot size: _____)				
1. _____	0	☐ 0.0%		
2. _____	0	☐ 0.0%		
3. _____	0	☐ 0.0%		
4. _____	0	☐ 0.0%		
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
0 = Total Cover				
(Plot size: <u>5'</u> radius)				
1. <i>Phalaris arundinacea</i>	100	☒ 66.7%	FACW	
2. <i>Panicum saffordii</i>	20	☐ 13.3%	OBL	
3. <i>Verbesina alternifolia</i>	20	☐ 13.3%	FAC	
4. <i>Onoclea sensibilis</i>	5	☐ 3.3%	FACW	
5. <i>Epilobium coloratum</i>	5	☐ 3.3%	FACW	
6. _____	0	☐ 0.0%		
7. _____	0	☐ 0.0%		
8. _____	0	☐ 0.0%		
9. _____	0	☐ 0.0%		
10. _____	0	☐ 0.0%		
11. _____	0	☐ 0.0%		
12. _____	0	☐ 0.0%		
150 = Total Cover				
(Plot size: _____)				
1. _____	0	☐ 0.0%		
2. _____	0	☐ 0.0%		
3. _____	0	☐ 0.0%		
4. _____	0	☐ 0.0%		
5. _____	0	☐ 0.0%		
6. _____	0	☐ 0.0%		
0 = Total Cover				

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 60 Multiply by: 1

OBL species 105 x 1 = 105

FACW species 110 x 2 = 220

FAC species 20 x 3 = 60

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 235 (A) 385 (B)

Prevalence Index = B/A = 1.638

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-013 PFO

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 07-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-013 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 19 T Center - 14N R 5
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.5% / 0.3 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.565908 **Long.:** -81.054037 **Datum:** NAD83
Soil Map Unit Name: Or; Orrville silt loam, 0 to 3 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	
Hydric Soil Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: Upland data point for W-MRK-013. Surrounding land use is agricultural fields.	

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☐ No ☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches):	
Wetland Hydrology Present?		Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-013 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)				
1.	<i>Glycine max</i>	100	☒ 100.0%	UPL
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		100	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 100 x 5 = 500

Column Totals: 100 (A) 500 (B)

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

[illegible]

Wetland 13

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

2 2

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-013 PEM

0.14 acres
extends outside survey area

3 5

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

21.0 26.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☒ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☒ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☐ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ Other:

13 39

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☒ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

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

39

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 13

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/7/2018

39

subtotal this page

0 39

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

1 40

max 20pts.

subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ 2 Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☒ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ x Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-013 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Modified Category 2

40 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 13	
Date: November 7, 2018	
Description: PFO Modified Category 2 Facing North	

Wetland 13	
Date: November 7, 2018	
Description: PFO Modified Category 2 Facing East	

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 13	
Date: November 7, 2018	
Description: PFO Modified Category 2 Facing South	

Wetland 13	
Date: November 7, 2018	
Description: PFO Modified Category 2 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 13	
Date: November 7, 2018	
Description: PFO Modified Category 2 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 08-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-014 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 19 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.5% / 0.3 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.563439 **Long.:** -81.050747 **Datum:** NAD83
Soil Map Unit Name: Or; Orrville silt loam, 0 to 3 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: This PEM wetland is located on the floodplain of watercourse S-MRK-013. The wetland is influenced by seasonal flooding and surface runoff. Wetland is open ended outside the current study area and the boundary follows edge of depression.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
☒ Surface Water (A1) ☒ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☒ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>1</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>0</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is surface runoff and seasonal flooding.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-014 PEM

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum	(Plot size: <u>.5'</u> radius _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<i>Echinochloa crus-galli</i>	100	☒ 71.4%	FAC
2.	<i>Juncus effusus</i>	10	☐ 7.1%	FACW
3.	<i>Scirpus atrovirens</i>	10	☐ 7.1%	OBL
4.	<i>Eupatorium perfoliatum</i>	10	☐ 7.1%	FACW
5.	<i>Rumex crispus</i>	10	☐ 7.1%	FAC
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		140	= Total Cover	
Woody Vine Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 10 x 1 = 10

FACW species 20 x 2 = 40

FAC species 110 x 3 = 330

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 140 (A) 380 (B)

Prevalence Index = B/A = 2.714

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 08-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-014-015 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 19 **T** Center - 14N **R** 5W
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.5% / 0.3 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.563231 **Long.:** -81.050304 **Datum:** NAD83
Soil Map Unit Name: Or; Orrville silt loam, 0 to 3 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks: Upland data point for W-MRK-014 and W-MRK-015. Surrounding land use is agriculture.		

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____		Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-014-015 UPL

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
= Total Cover				
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
= Total Cover				
Shrub Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
= Total Cover				
Herb Stratum (Plot size: 5' radius _____)				
1. <i>Phleum pratense</i>	100	☒	74.1%	FACU
2. <i>Trifolium repens</i>	20	☐	14.8%	FACU
3. <i>Taraxacum officinale</i>	15	☐	11.1%	FACU
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
7. _____	0	☐	0.0%	
8. _____	0	☐	0.0%	
9. _____	0	☐	0.0%	
10. _____	0	☐	0.0%	
11. _____	0	☐	0.0%	
12. _____	0	☐	0.0%	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	0	☐	0.0%	
2. _____	0	☐	0.0%	
3. _____	0	☐	0.0%	
4. _____	0	☐	0.0%	
5. _____	0	☐	0.0%	
6. _____	0	☐	0.0%	
= Total Cover				

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>135</u>	x 4 = <u>540</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>135</u> (A)	<u>540</u> (B)
Prevalence Index = B/A = <u>4.000</u>	

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

[illegible]

Wetland 14

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/8/2018

Field Id:

W-MRK-014 PEM

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.12 acres

2 3

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 12.0

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ Other:

3 15

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

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

15

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 14

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/8/2018

15

subtotal this page

0 15

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Praires (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2 17

max 20pts.

subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☐ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☒ Low (1)
☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☒ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-014 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
1 Low 0.1 to <1ha (0.247 to 2.47 acres)
2 Moderate 1 to <4ha (2.47 to 9.88 acres)
3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
1 Present very small amounts or if more common of marginal quality
2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 Present in moderate or greater amounts and of highest quality

Category 1

17 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 14	
Date: November 8, 2018	
Description: PEM Category 1 Facing North	

Wetland 14	
Date: November 8, 2018	
Description: PEM Category 1 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 14	
Date: November 8, 2018	
Description: PEM Category 1 Facing South	

Wetland 14	
Date: November 8, 2018	
Description: PEM Category 1 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 14	
Date: November 8, 2018	
Description: PEM Category 1 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 08-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-015 PSS
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 19 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.563113 **Long.:** -81.049827 **Datum:** NAD83
Soil Map Unit Name: Or; Orrville silt loam, 0 to 3 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	
Hydric Soil Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks:
This PSS wetland is located on the floodplain of watercourse S-MRK-013. The wetland is influenced by seasonal flooding and surface runoff but is primarily influenced by stream conditions. Wetland boundary follows edge of depression and stream banks.

Hydrology

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

Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	<u> </u>
Water Table Present?	Yes ☒ No ☐	Depth (inches):	<u>6</u>
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	<u>6</u>
Wetland Hydrology Present?		Yes ☒ No ☐	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Source of hydrology is surface runoff and seasonal flooding.

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-015 PSS

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: <u>15'</u> radius)				
1.	<i>Salix nigra</i>	40	☒ 50.0%	OBL
2.	<i>Salix discolor</i>	40	☒ 50.0%	FACW
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		80	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius)				
1.	<i>Poa palustris</i>	70	☒ 100.0%	FACW
2.	<i>Carex sp.</i>	0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		70	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 40 x 1 = 40

FACW species 110 x 2 = 220

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 150 (A) 260 (B)

Prevalence Index = B/A = 1.733

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Absolute cover of Carex sp is 25%.

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 08-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-014-015 UPL
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** **S** 19 **T** Center - 14N **R** 5W
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 0.5% / 0.3 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.563231 **Long.:** -81.050304 **Datum:** NAD83
Soil Map Unit Name: Or; Orrville silt loam, 0 to 3 percent slopes, occasionally flooded **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	
Remarks: Upland data point for W-MRK-014 and W-MRK-015. Surrounding land use is agriculture.		

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____		Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No source of hydrology.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-014-015 UPL

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)				
1.	<i>Phleum pratense</i>	100	☒ 74.1%	FACU
2.	<i>Trifolium repens</i>	20	☐ 14.8%	FACU
3.	<i>Taraxacum officinale</i>	15	☐ 11.1%	FACU
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
7.		0	☐ 0.0%	
8.		0	☐ 0.0%	
9.		0	☐ 0.0%	
10.		0	☐ 0.0%	
11.		0	☐ 0.0%	
12.		0	☐ 0.0%	
		135	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.		0	☐ 0.0%	
2.		0	☐ 0.0%	
3.		0	☐ 0.0%	
4.		0	☐ 0.0%	
5.		0	☐ 0.0%	
6.		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>135</u>	x 4 = <u>540</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>135</u> (A)	<u>540</u> (B)
Prevalence Index = B/A = <u>4.000</u>	

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-014-015 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	4/4	100				Silty Clay Loam	

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10) (LRR N)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Dark Surface (S7)

☐ Polyvalue Below Surface (S8) (MLRA 147,148)

☐ Thin Dark Surface (S9) (MLRA 147, 148)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)

☐ Umbric Surface (F13) (MLRA 136, 122)

☐ Piedmont Floodplain Soils (F19) (MLRA 148)

☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (MLRA 147)

☐ Coast Prairie Redox (A16) (MLRA 147,148)

☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Wetland 15

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/8/2018

0 0

max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

Field Id:

W-MRK-015 PEM

0.07 acres

3 3

max 14 pts subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

17.0 20.0

max 30 pts subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☒ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☒ Recovered (7)
☐ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☒ Seasonally inundated (2)
☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch ☐ point source (nonstormwater)
☐ tile ☐ filling/grading
☐ dike ☐ road bed/RR track
☐ weir ☐ dredging
☐ stormwater input ☐ Other:

13 33

max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☒ Recovered (3)
☐ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☒ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☒ Recovered (6)
☐ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

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

33

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 15

Site: AEP Carrollton-Gable Rater(s): M.R.Kline, R.C.Massa Date: 11/8/2018

33

subtotal this page

0 33

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Praires (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

4 37

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☒ 2 Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☒ x Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ x Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

W-MRK-015 PEM

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Modified

Category 2

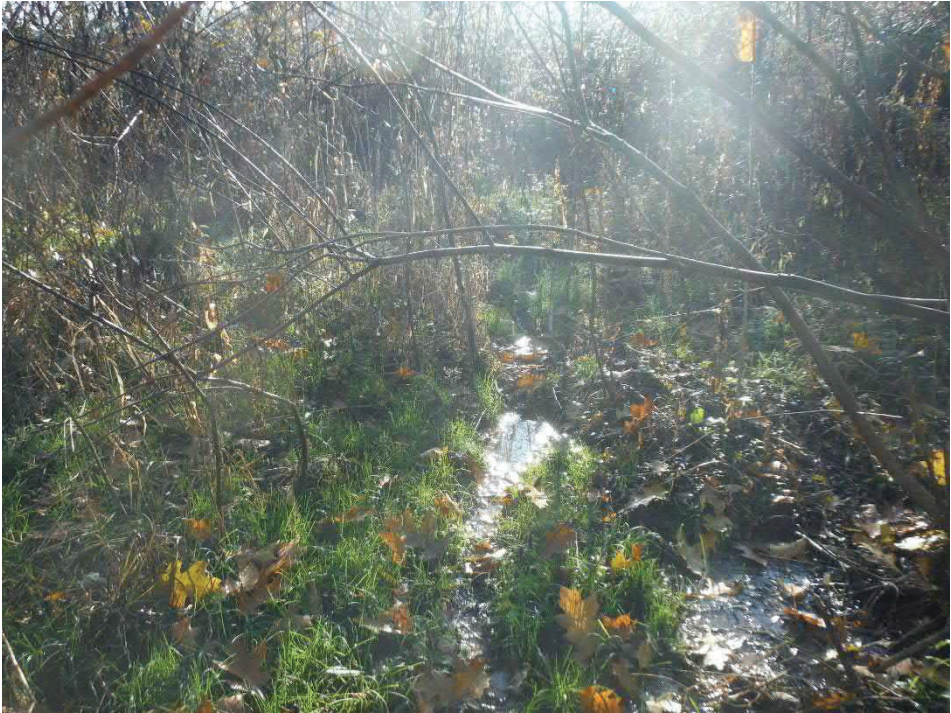
37 GRAND TOTAL(max 100 pts)



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 15	
Date: November 8, 2018	
Description: PSS Modified Category 2 Facing North	

Wetland 15	
Date: November 8, 2018	
Description: PSS Modified Category 2 Facing East	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 15	
Date: November 8, 2018	
Description: PSS Modified Category 2 Facing South	

Wetland 15	
Date: November 8, 2018	
Description: PSS Modified Category 2 Facing West	



PHOTOGRAPHIC RECORD WETLANDS

Client Name: AEP	Site Location: Gable-Carrollton 138 kV Transmission Line Project	Project No. 60582598
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Wetland 15	
Date: November 8, 2018	
Description: PSS Modified Category 2 Soil Pit	

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Carrollton-Gable 138 kV Project **City/County:** Carroll **Sampling Date:** 08-Nov-18
Applicant/Owner: AEP Ohio Transmission Company **State:** OH **Sampling Point:** W-MRK-016 PEM
Investigator(s): M.R.Kline, R.C.Massa **Section, Township, Range:** S 19 T Center - 14N R 5W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 2.0% / 1.1 °
Subregion (LRR or MLRA): LRR N **Lat.:** 40.561805 **Long.:** -81.047822 **Datum:** NAD83
Soil Map Unit Name: WmC; Westmoreland-Coshocton silt loams, 8 to 15 percent slopes **NWI classification:** N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐

Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	
Hydric Soil Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: This PEM begins at a hillside spring seep within an agricultural field. Water follows a slight depression down the slope and dissipates into a small upland forest surrounded by agricultural fields. Wetland boundary follows edge of depression.	

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
☐ Surface Water (A1)	☐ True Aquatic Plants (B14)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Hydrogen Sulfide Odor (C1)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Dry Season Water Table (C2)	
☐ Drift deposits (B3)	☐ Thin Muck Surface (C7)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Other (Explain in Remarks)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)		☐ Stunted or Stressed Plants (D1)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Geomorphic Position (D2)	
☐ Water-Stained Leaves (B9)		☐ Shallow Aquitard (D3)	
☐ Aquatic Fauna (B13)		☐ Microtopographic Relief (D4)	
		☐ FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	0.5
Water Table Present?	Yes ☒ No ☐	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches):	0
		Wetland Hydrology Present?	Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Source of hydrology is spring seeps.			

VEGETATION (Five/Four Strata)- Use scientific names of plants.Sampling Point: W-MRK-016 PEM

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
		0	= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
		0	= Total Cover	
Shrub Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
		0	= Total Cover	
Herb Stratum (Plot size: <u>5'</u> radius _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Juncus tenuis</i>		60	☒ 38.7%	FAC
2. <i>Echinochloa crus-galli</i>		50	☒ 32.3%	FAC
3. <i>Cyperus esculentus</i>		30	☐ 19.4%	FACW
4. <i>Scirpus atrovirens</i>		10	☐ 6.5%	OBL
5. <i>Eupatorium perfoliatum</i>		5	☐ 3.2%	FACW
6. _____		0	☐ 0.0%	
7. _____		0	☐ 0.0%	
8. _____		0	☐ 0.0%	
9. _____		0	☐ 0.0%	
10. _____		0	☐ 0.0%	
11. _____		0	☐ 0.0%	
12. _____		0	☐ 0.0%	
		155	= Total Cover	
Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____		0	☐ 0.0%	
2. _____		0	☐ 0.0%	
3. _____		0	☐ 0.0%	
4. _____		0	☐ 0.0%	
5. _____		0	☐ 0.0%	
6. _____		0	☐ 0.0%	
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>35</u>	x 2 = <u>70</u>
FAC species <u>110</u>	x 3 = <u>330</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>155</u> (A)	<u>410</u> (B)
Prevalence Index = B/A = <u>2.645</u>	

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: W-MRK-016 PEM

[illegible]

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

5/28/2021 1:49:43 PM

in

Case No(s). 21-0554-EL-BLN

Summary: Notice Notice LON application for the Tidd-Sunnyside 138 kV Transmission Line Rebuild Project 401-600 B electronically filed by Tanner Wolfram on behalf of AEP Ohio Transmission Company, Inc.