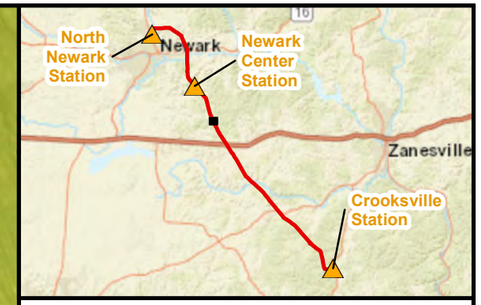


LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible
- Ineligible
- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

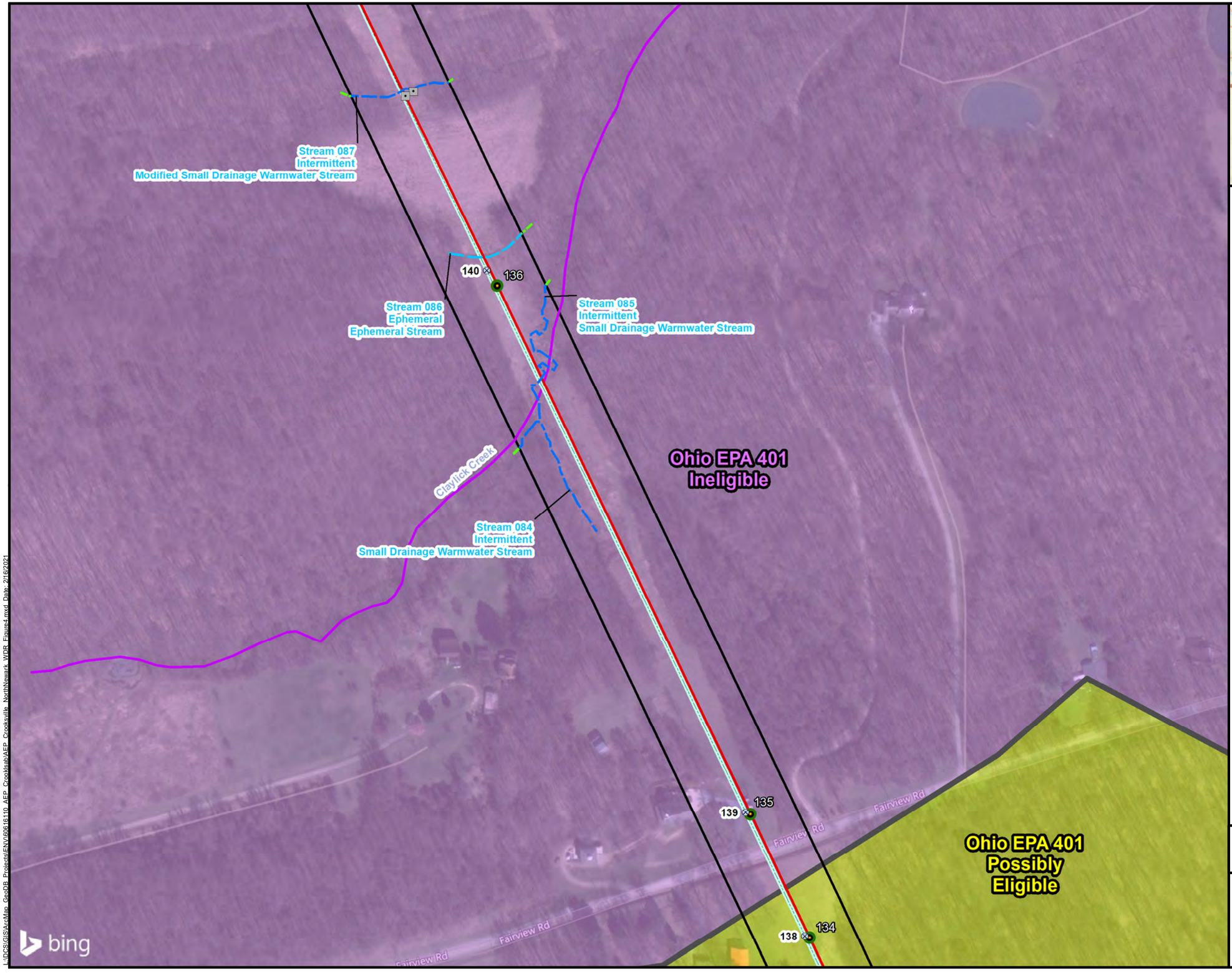
Crooksville-North Newark 138kV Transmission Line Rebuild Project

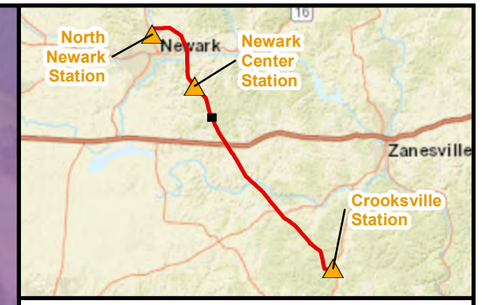
FIGURE 4AT
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

M:\OCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR_Figure4.mxd Date: 2/16/2021





LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible
- Possibly Eligible

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

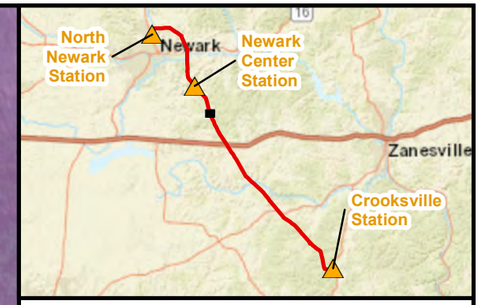
OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4AU
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM



LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4AV
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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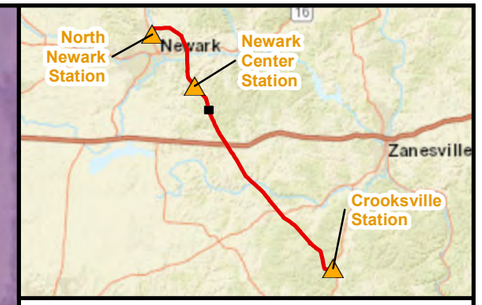

LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4AW
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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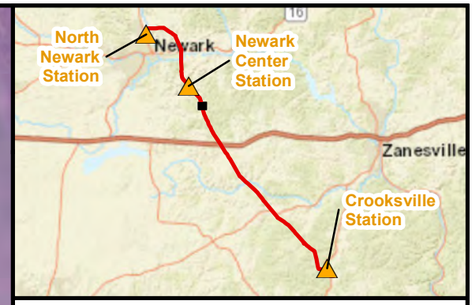


LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

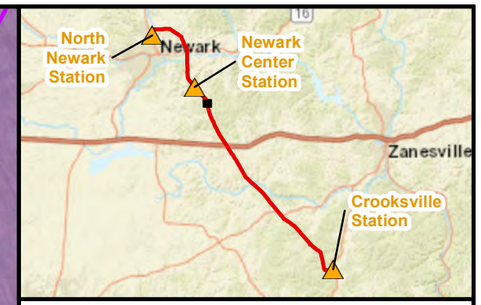
AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4AX
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM



LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

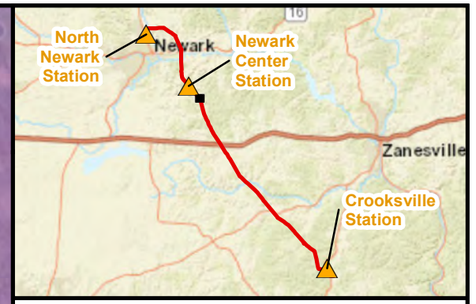
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4AY
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\DGS\GIS\ArcMap GeoDB Projects\ENV\60616110 AEP_Crooksville\AEP_Crooksville_NorthNewark_WDR_Figure4.mxd Date: 2/16/2021



LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Approximate Stream Location
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

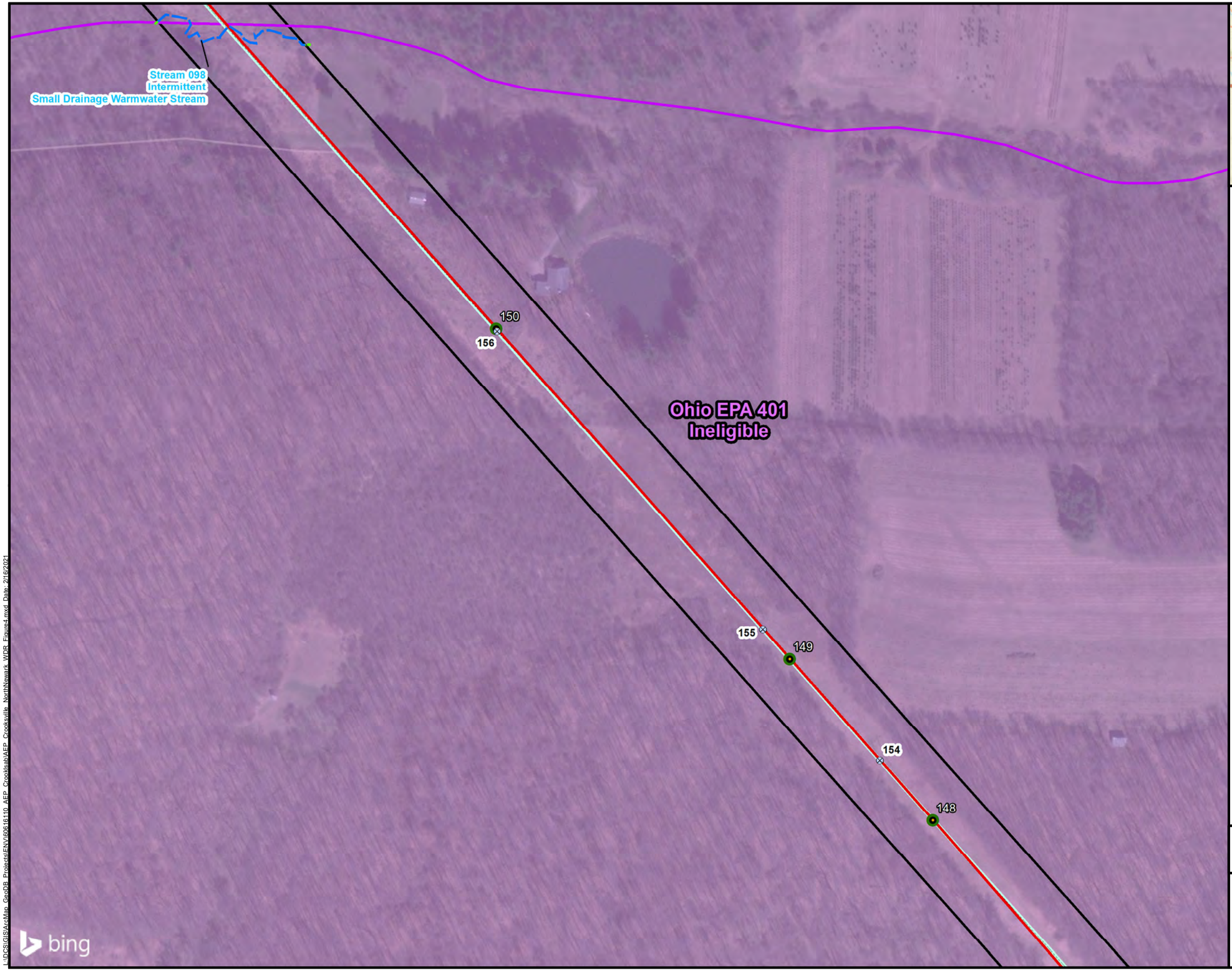
Crooksville-North Newark 138kV Transmission Line Rebuild Project

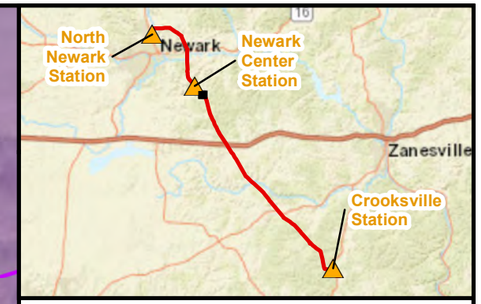
FIGURE 4AZ
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\DOCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR_Figure4.mxd Date: 2/16/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BA
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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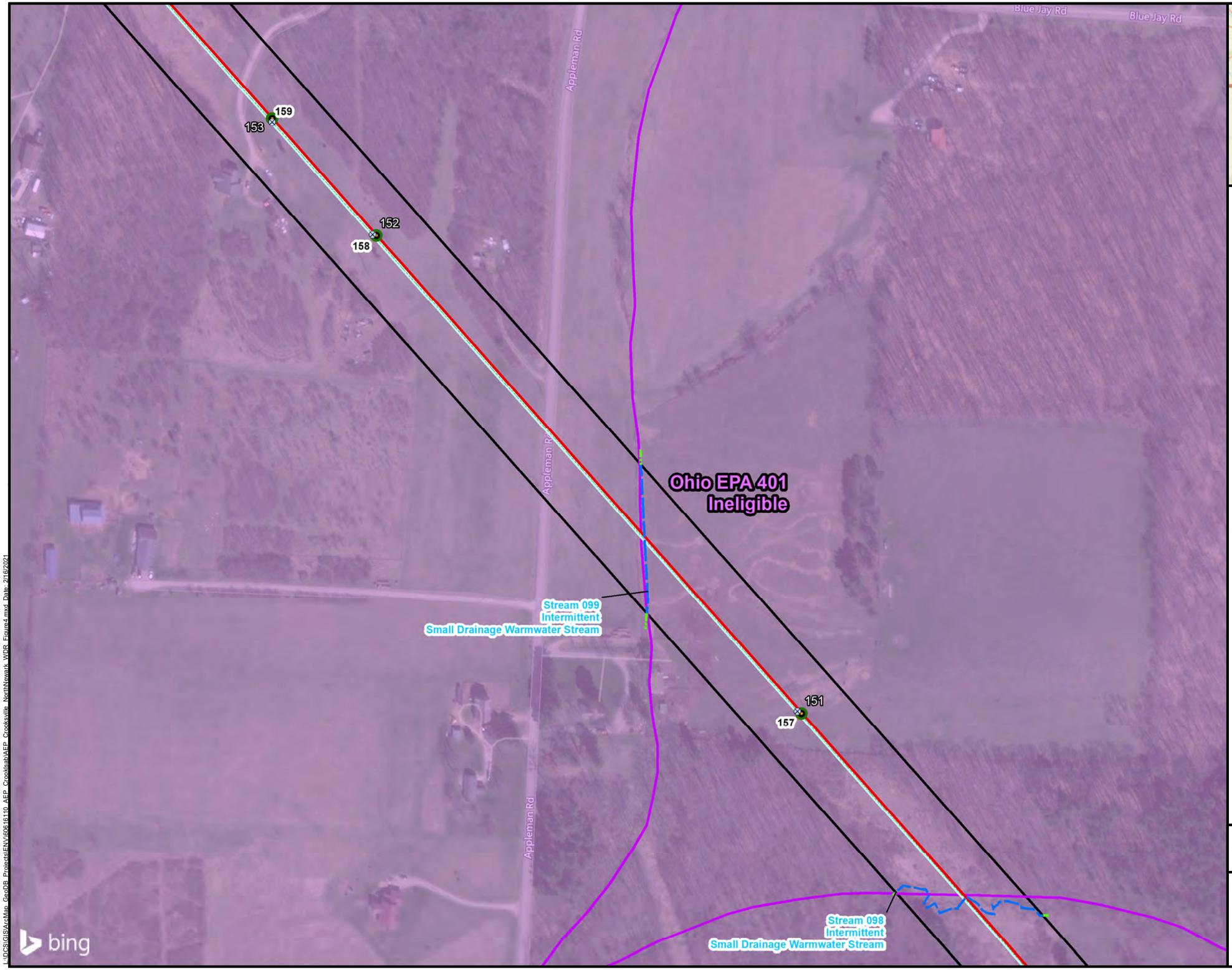

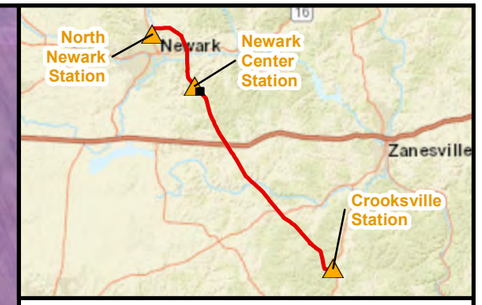

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BB
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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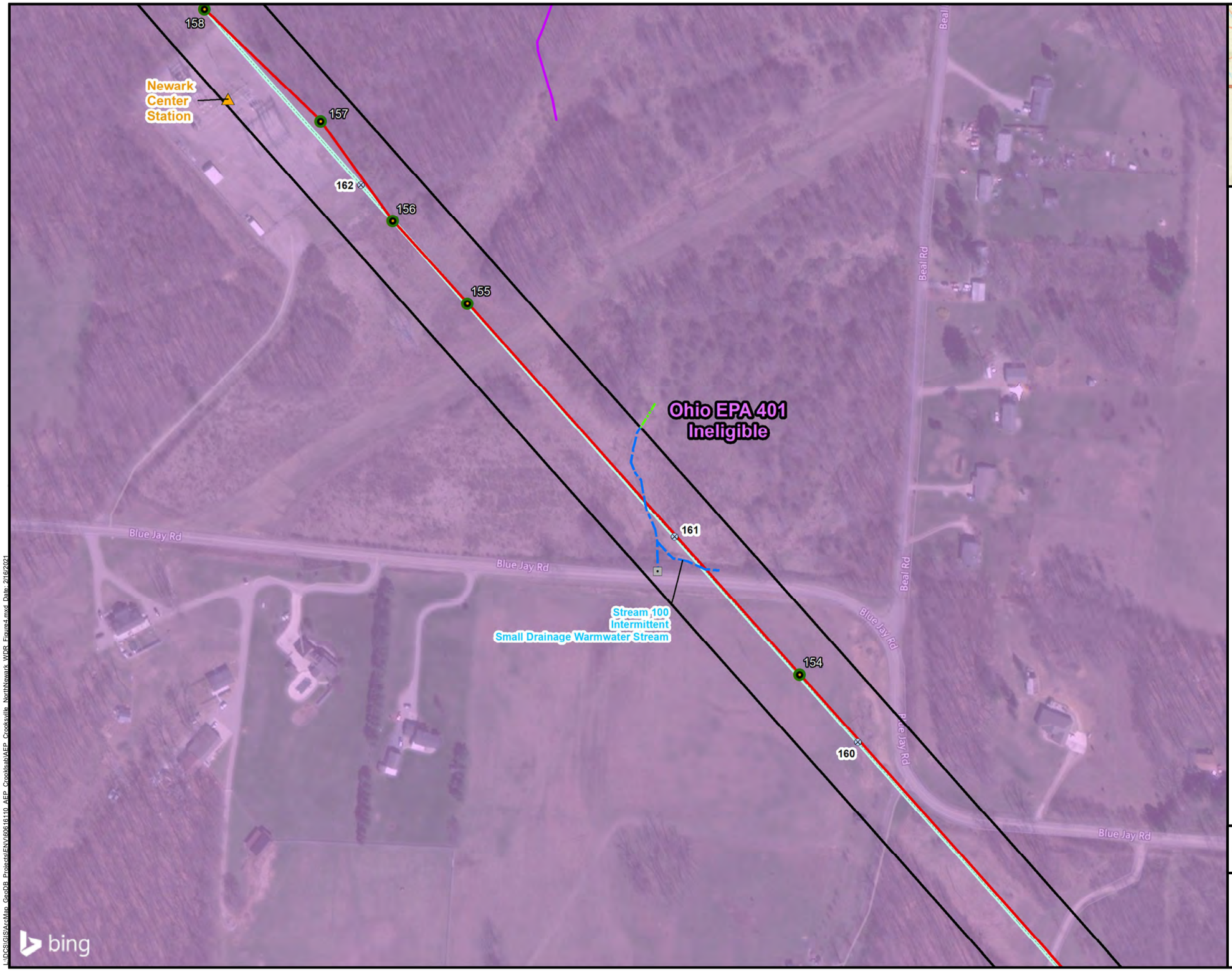
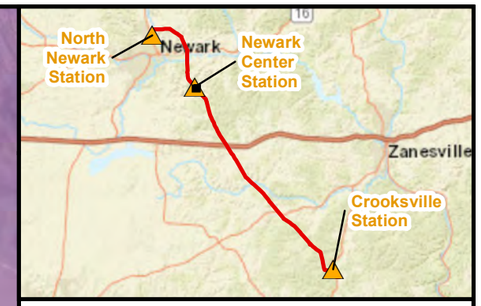




LEGEND:

- Existing Station
- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

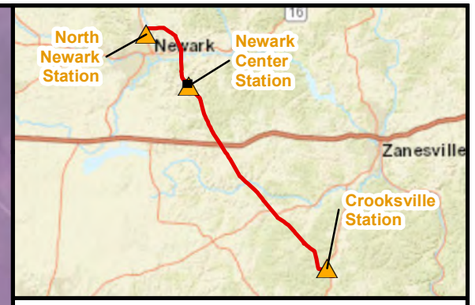
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BC
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\GIS\Arcmap GeoDB Projects\ENV\60616110 AEP_CrooksvilleNorthNewark_WDR Figure4.mxd Date: 2/16/2021



LEGEND:

- Existing Station
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BD
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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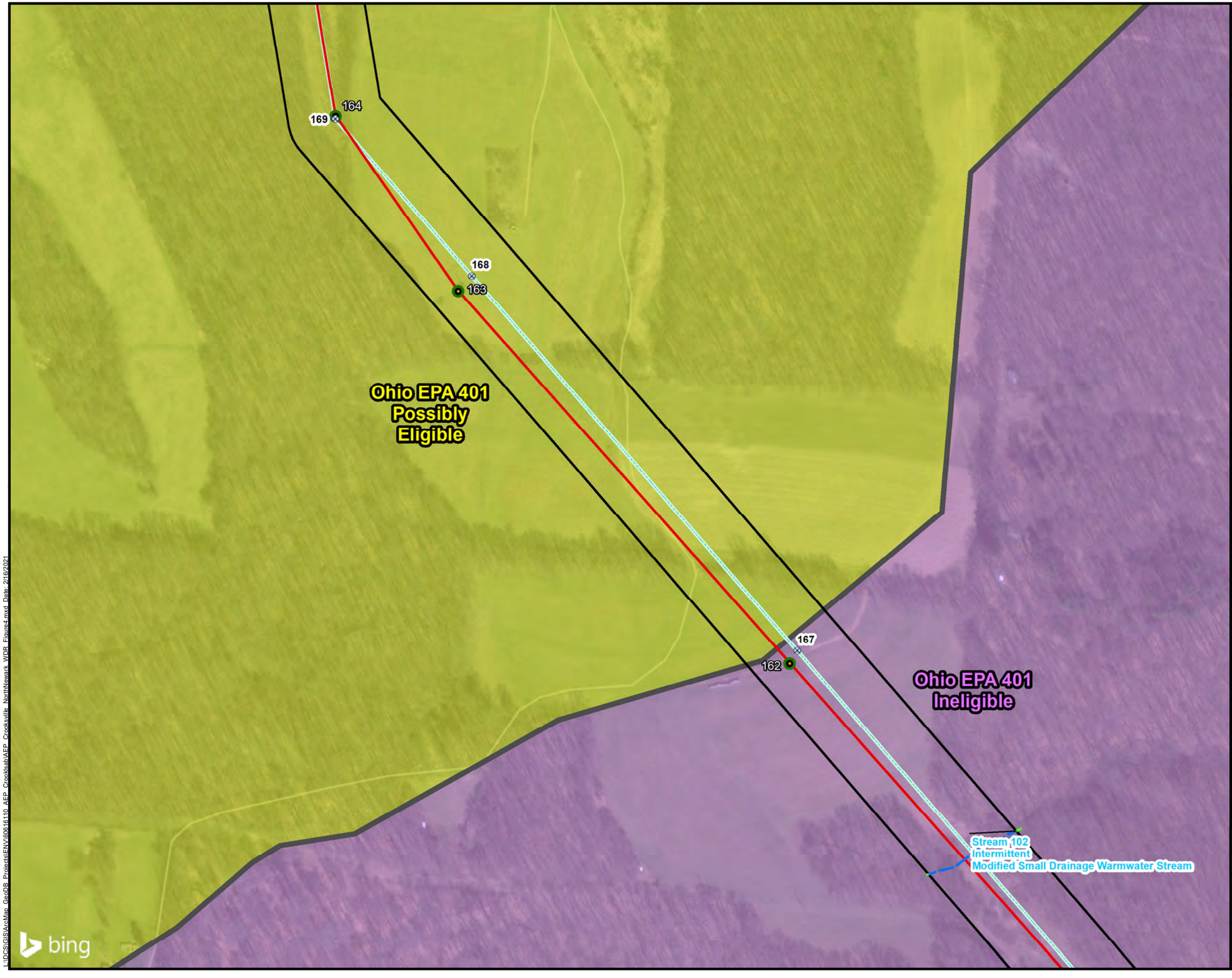

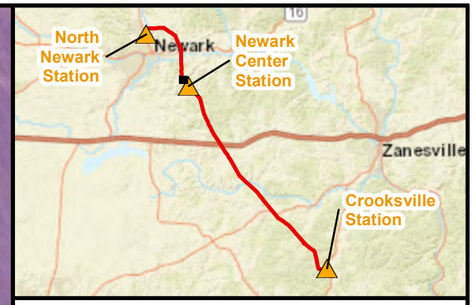

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- Project Survey Corridor

OEPA Stream Eligibility:

- Ineligible
- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BE
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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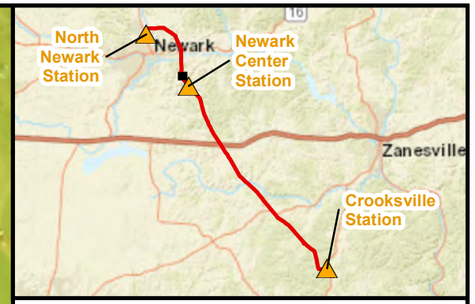

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BF
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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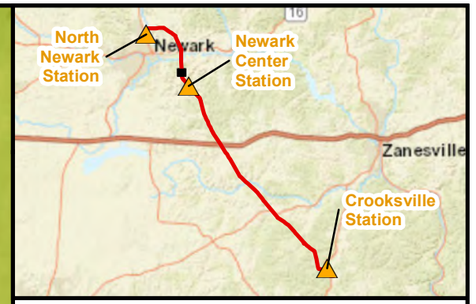

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BG
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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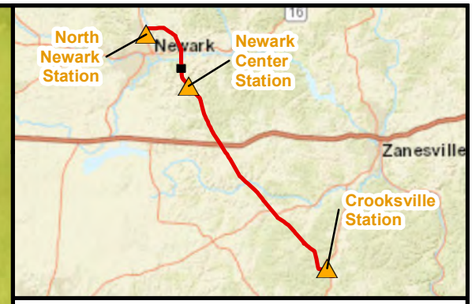

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BH
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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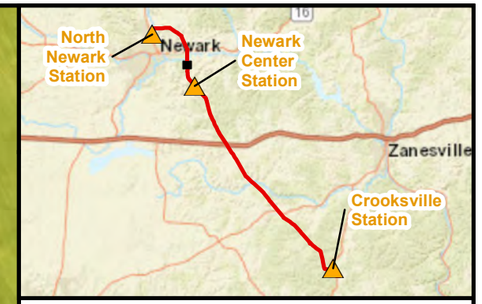

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BI
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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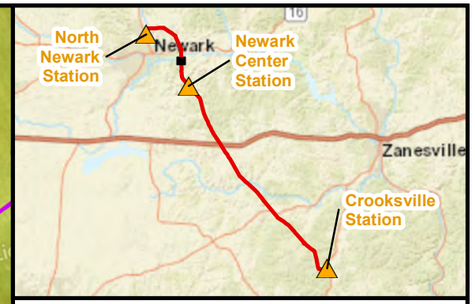


LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

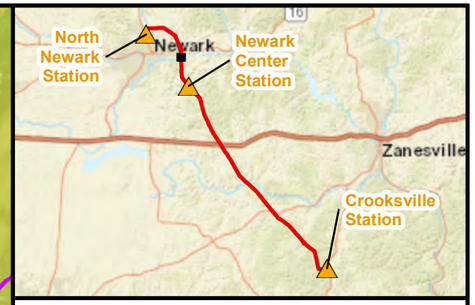
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BJ
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\DGS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR_Figure4.mxd Date: 2/16/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

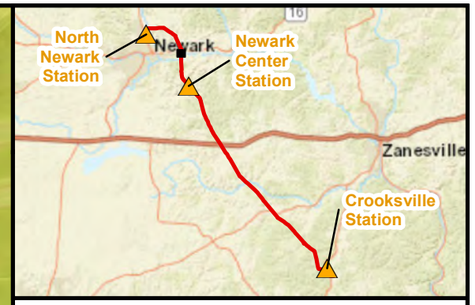
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BK
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

\\DCSIGIS\GISArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR_Figures.mxd Date: 2/16/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

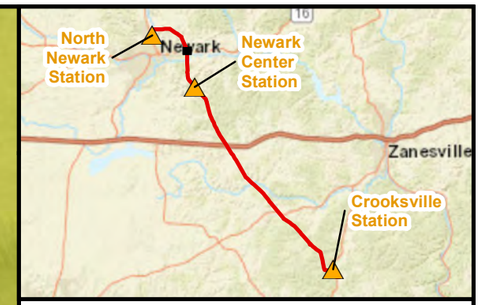
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BL
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\DOS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR_Figure4.mxd Date: 2/16/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

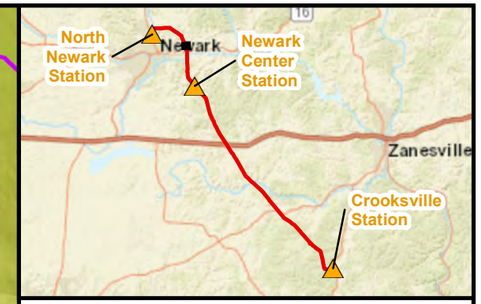
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BM
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\DGS\GIS\ArcMap GeoDB Projects\ENV\60616110_AEP_CrooksvilleNorthNewark_WDR_Figure4.mxd Date: 2/16/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

OHIO TRANSMISSION COMPANY

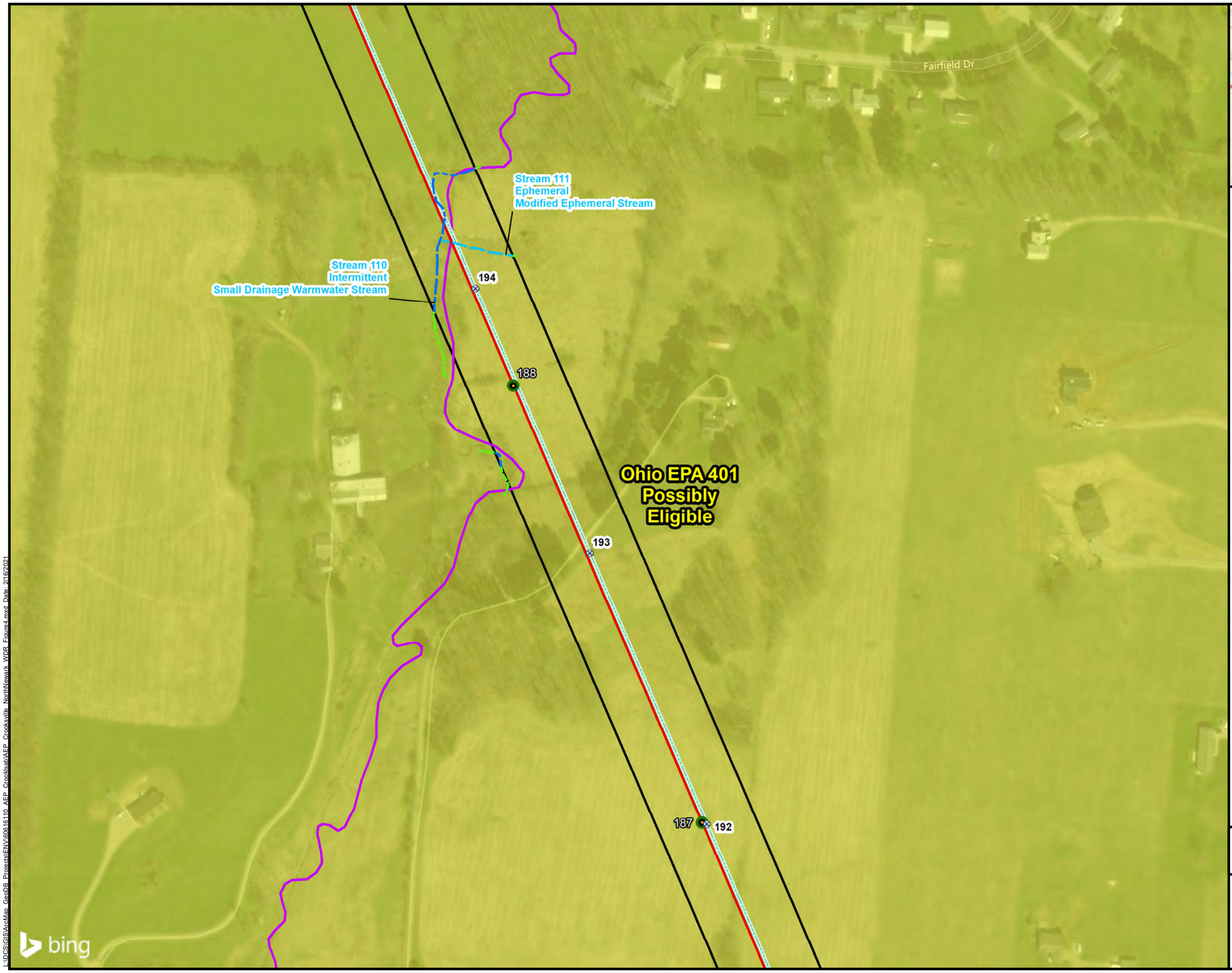
Crooksville-North Newark 138kV Transmission Line Rebuild Project

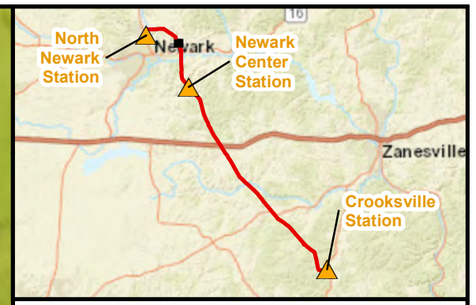
FIGURE 4BN
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

L:\PDS\GIS\ArcMap GeoDB Projects\ENV\60616110 AEP Crooksville NorthNewark VDR Figure4.mxd Date: 2/16/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BO
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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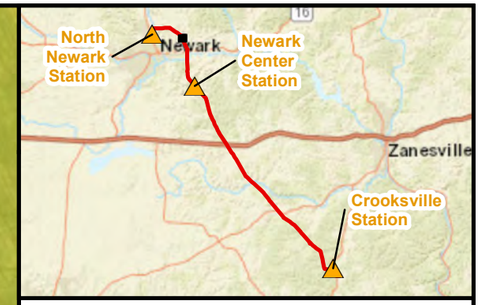

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BP
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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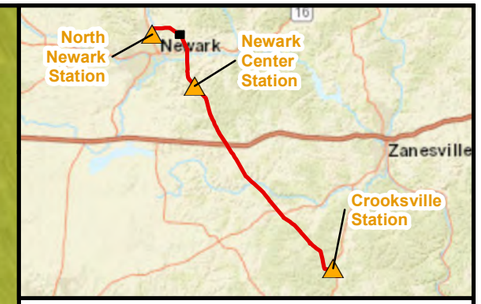

LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible
- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BQ
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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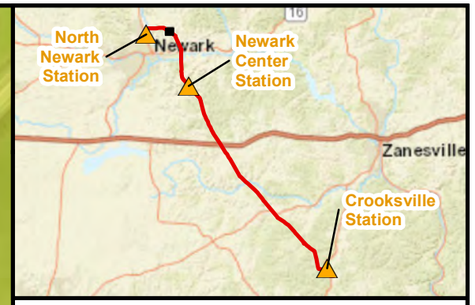

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible
- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BR
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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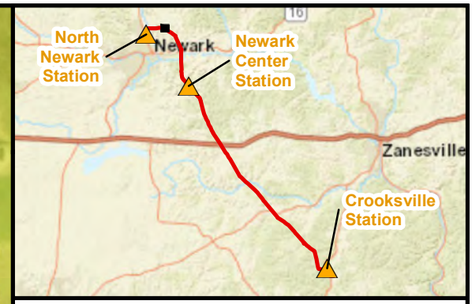

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible
- Possibly Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BS
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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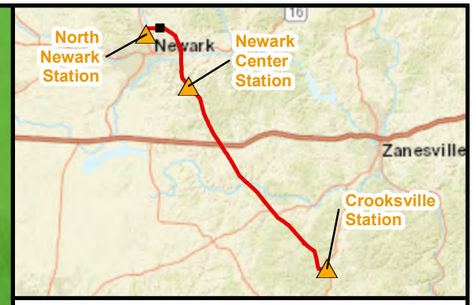

LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BT
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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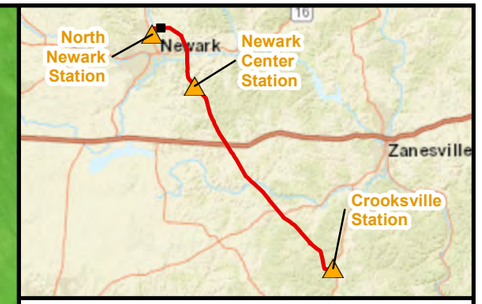

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BU
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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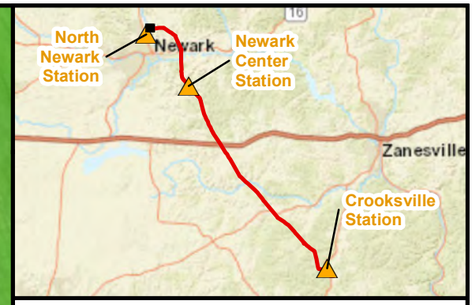

LEGEND:

- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BV
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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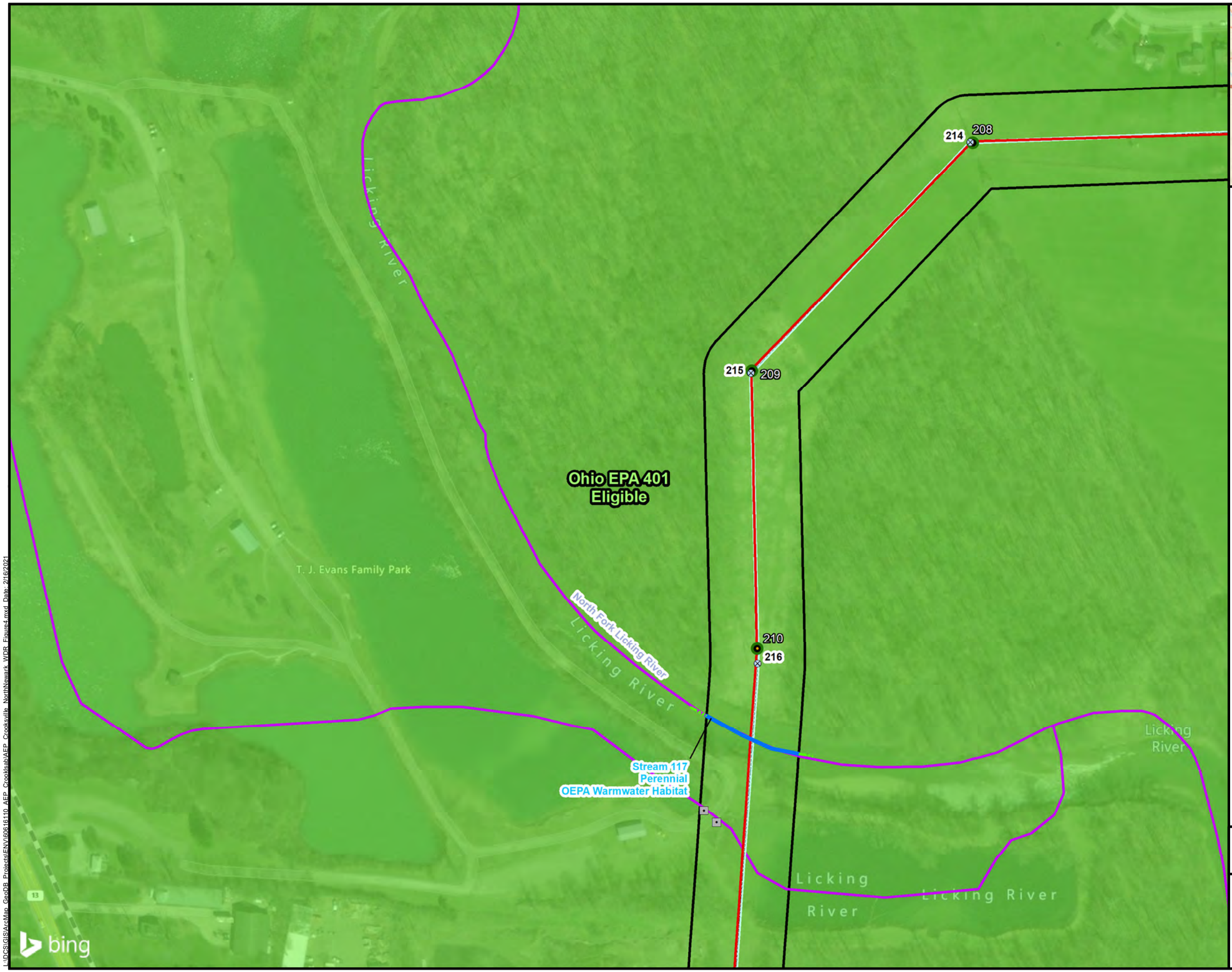

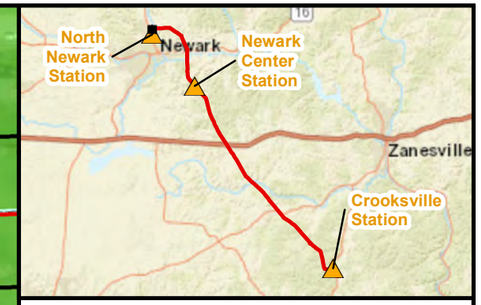

LEGEND:

- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BW
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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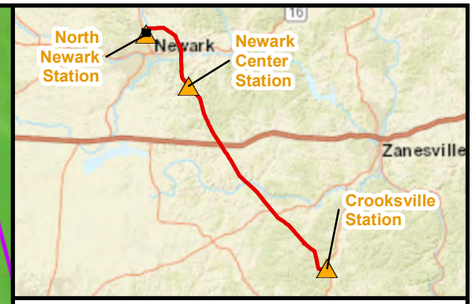

LEGEND:

- Existing Station
- Culvert
- Existing Structure
- Proposed Structure
- Crooksville-North Newark 138 kV Transmission Line
- Existing Transmission Line
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location
- NHD Stream (USGS)
- Project Survey Corridor

OEPA Stream Eligibility:

- Eligible

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 4BX
STREAM ELIGIBILITY MAP

JOB NO. 60616110

AECOM

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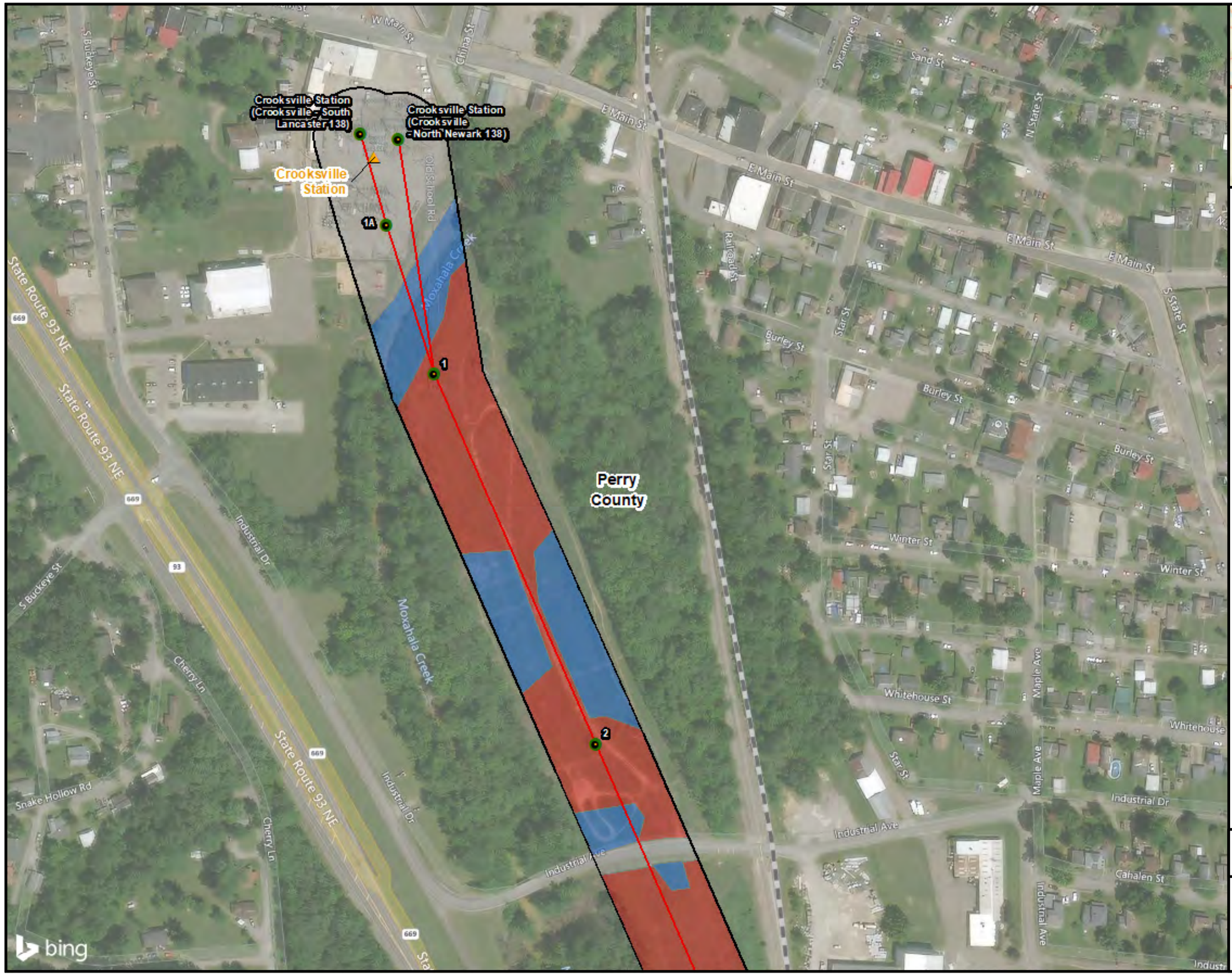

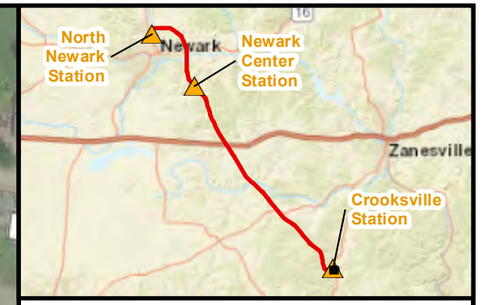

LEGEND:

- Proposed Structure
- Existing Station
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5A
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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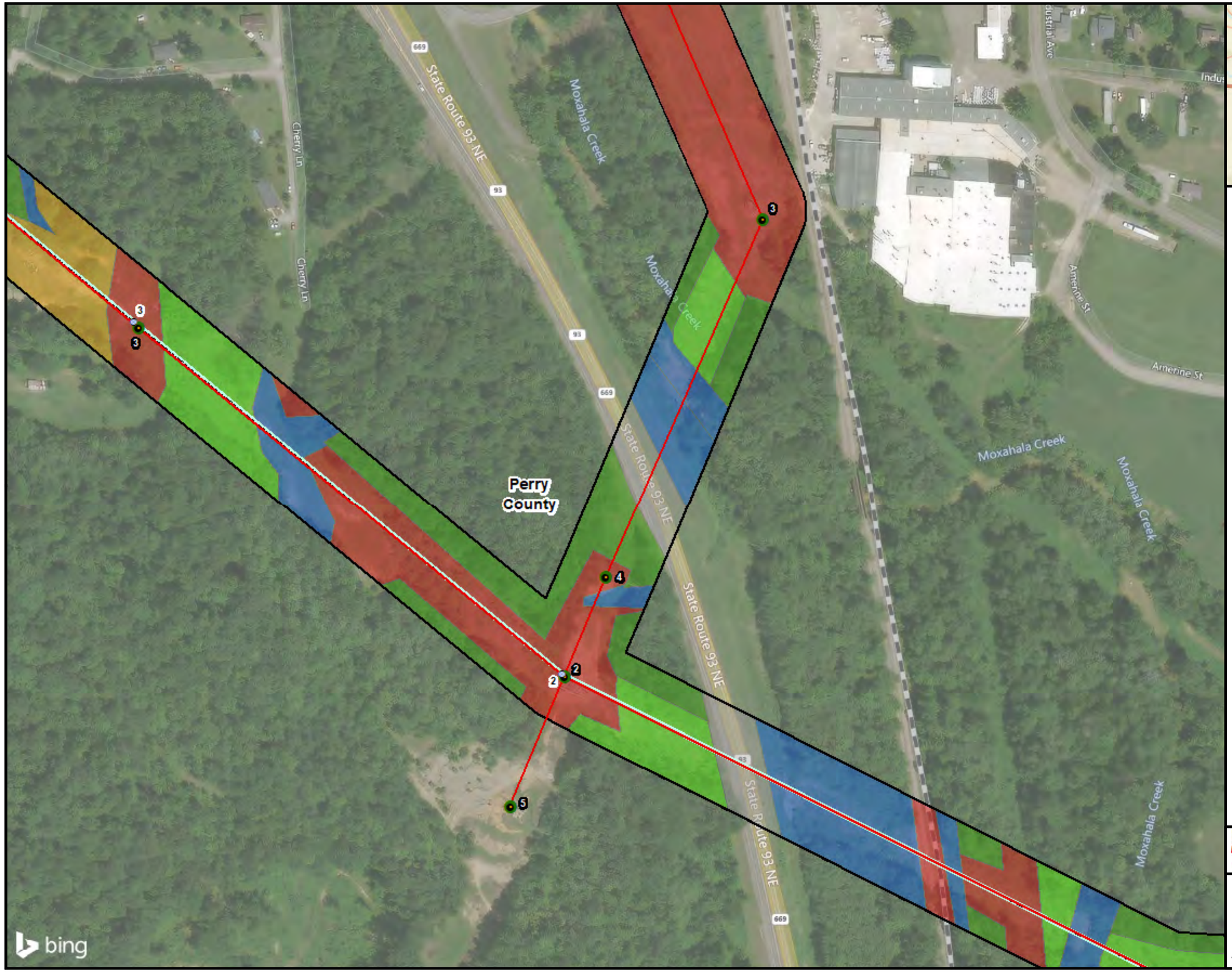

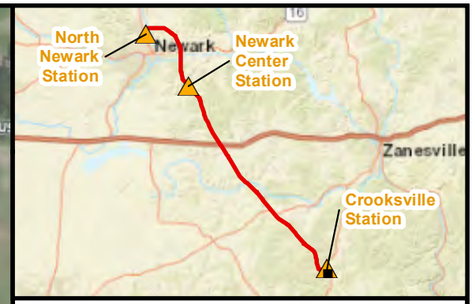

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5B
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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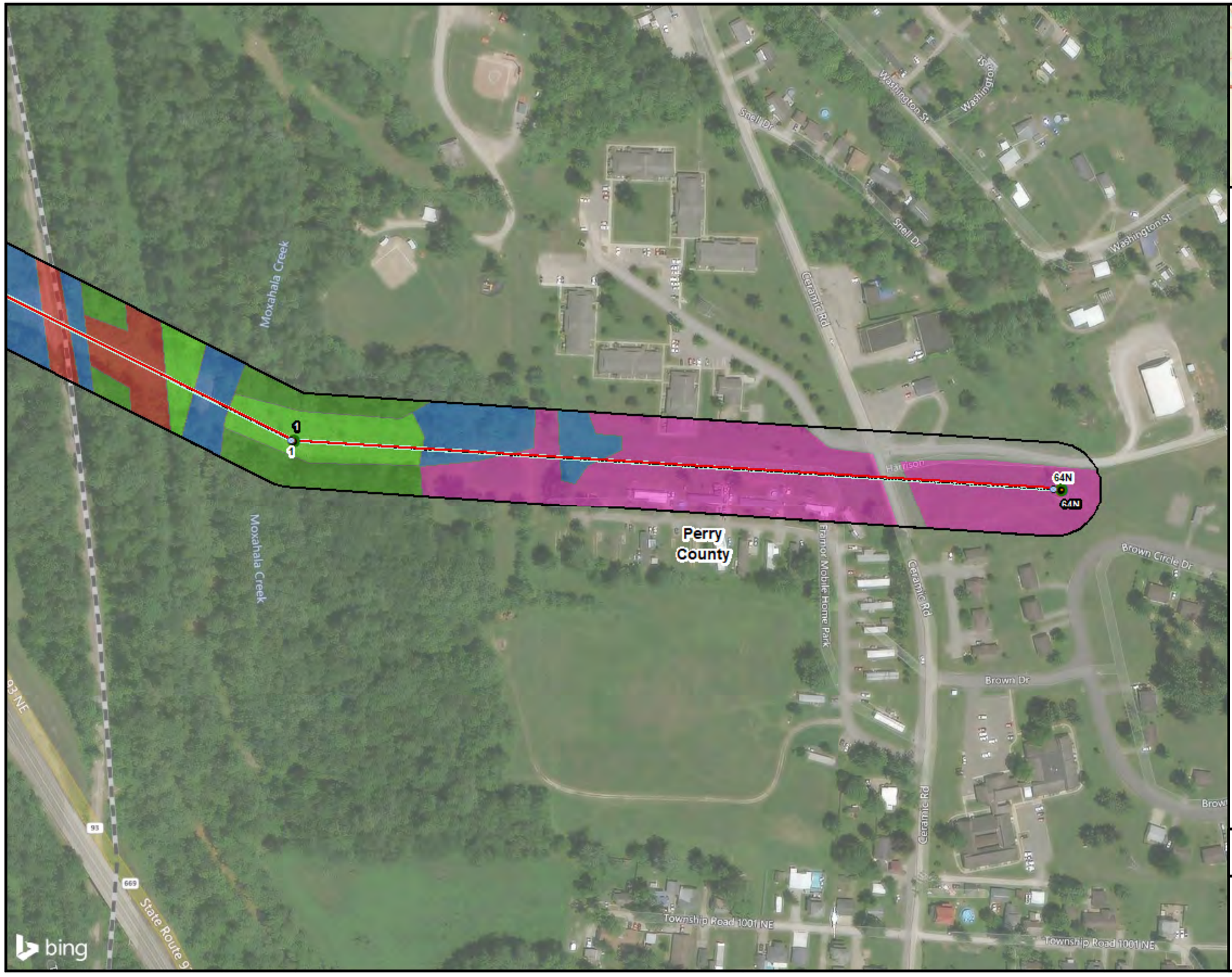

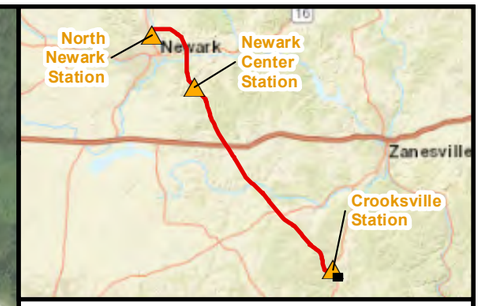

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5C
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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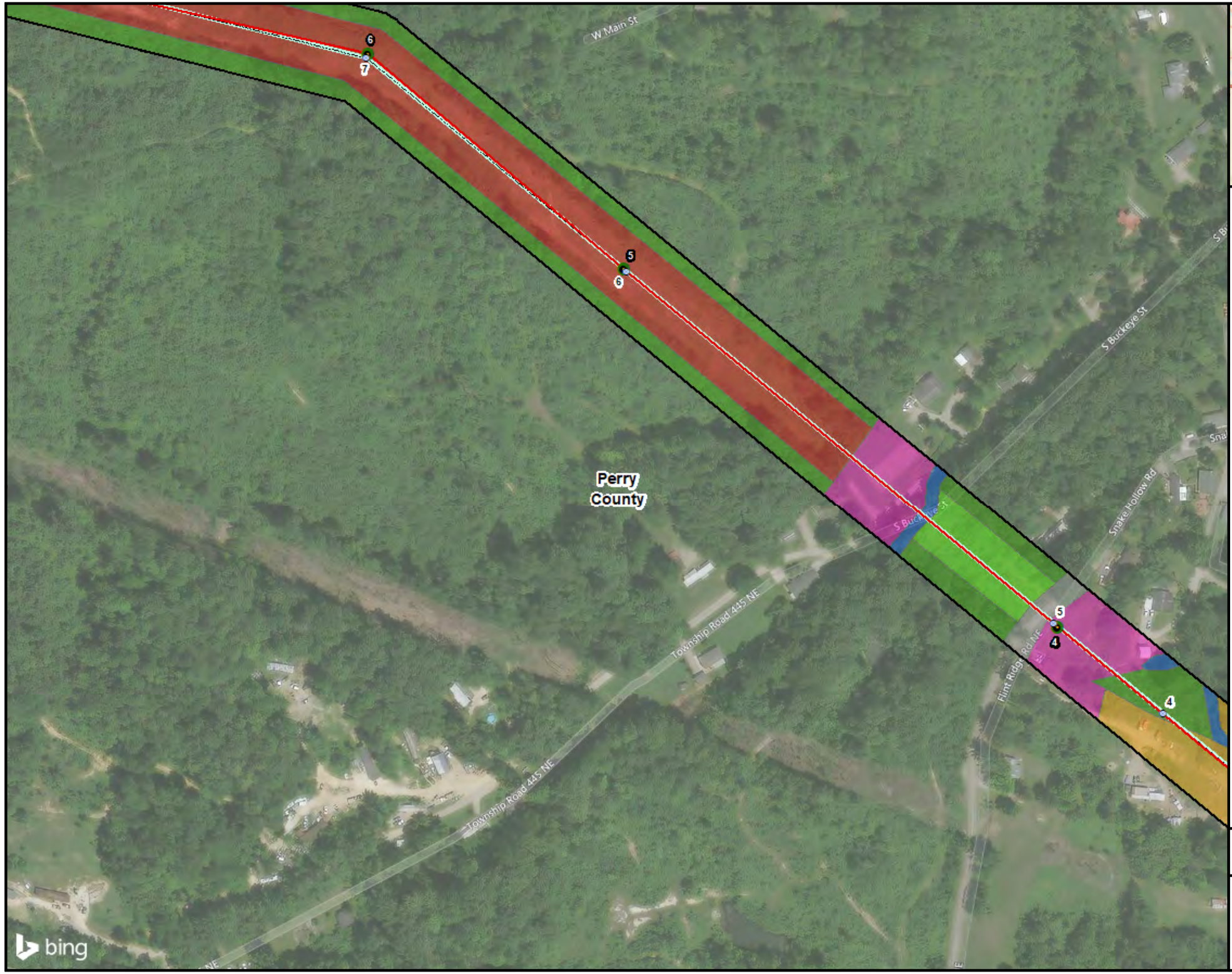

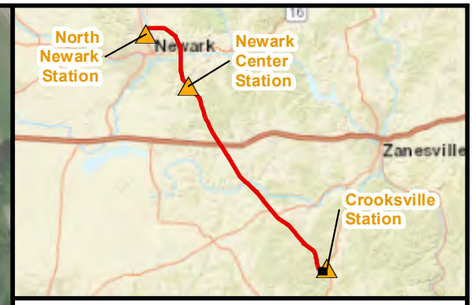

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5D
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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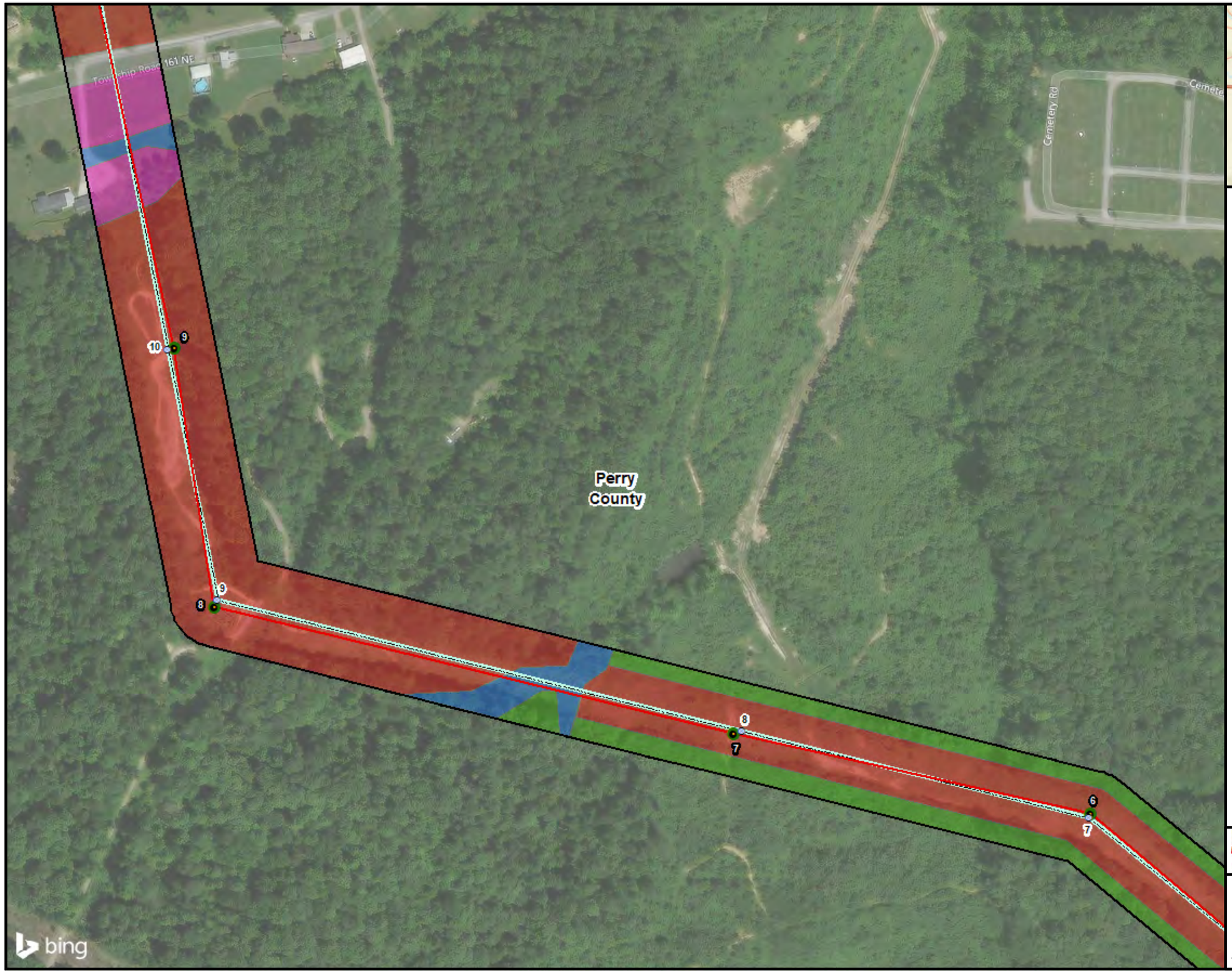

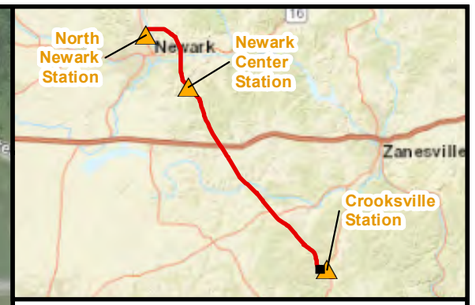

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5E
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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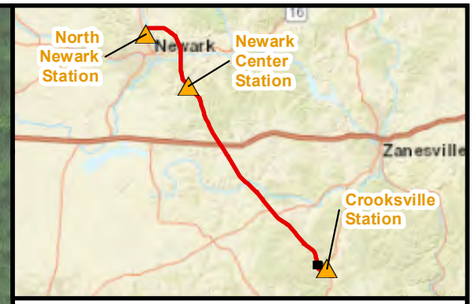

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5F
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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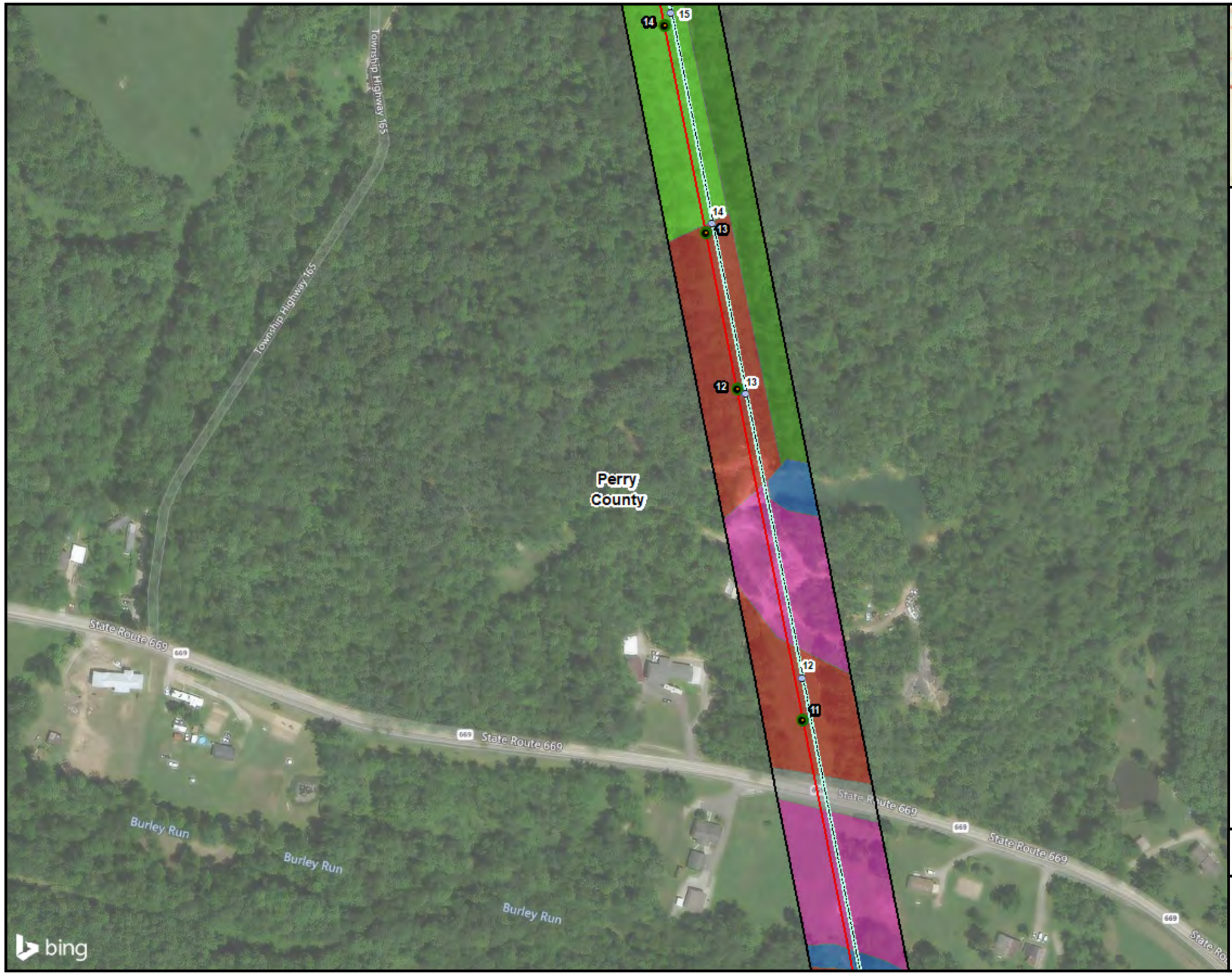

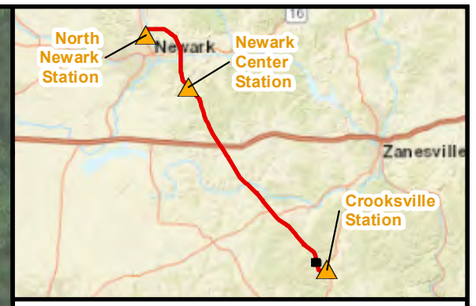

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5G
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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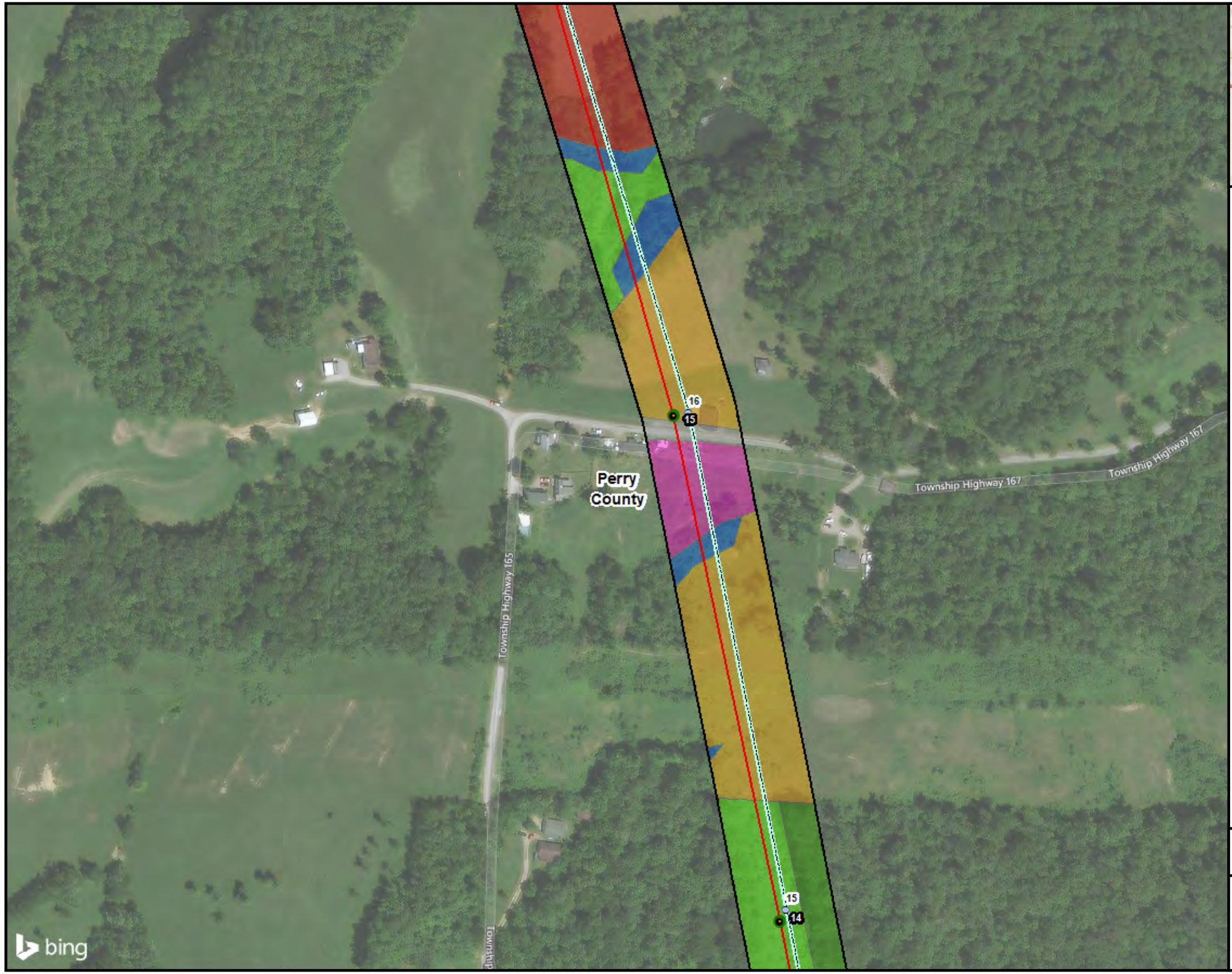
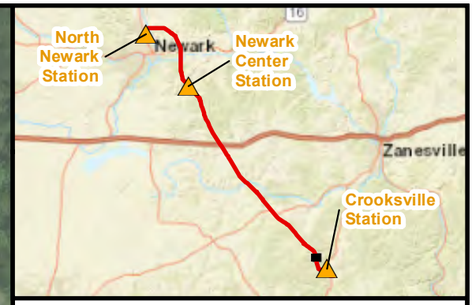




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

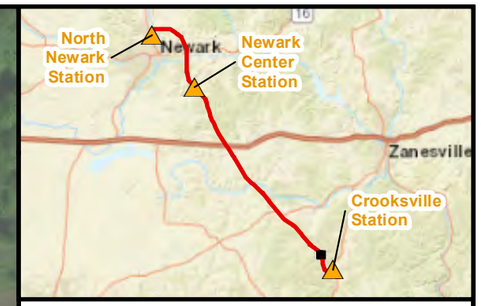
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5H
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR\Figure5.mxd Date: 6/1/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5I
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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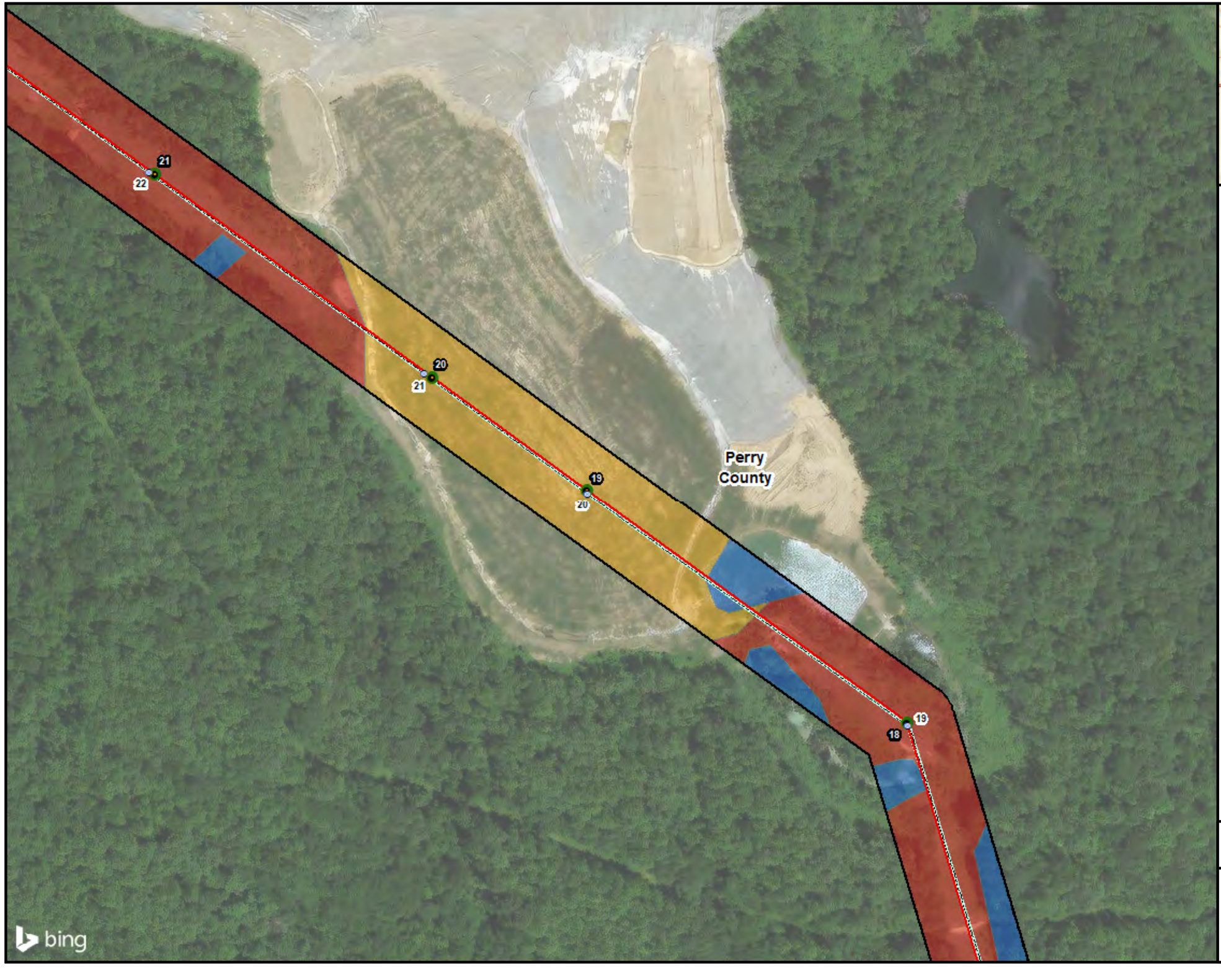

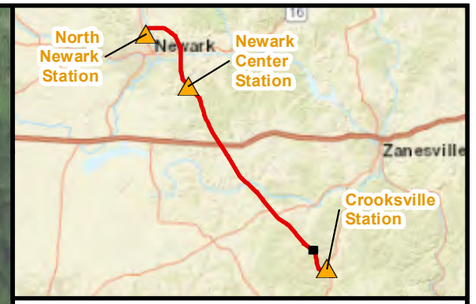

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5J
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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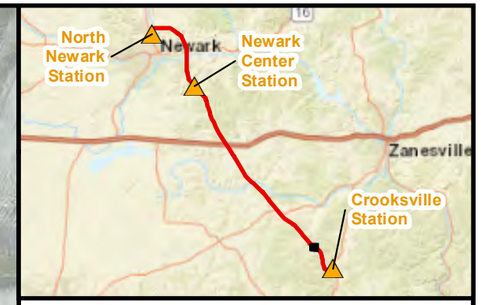

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5K
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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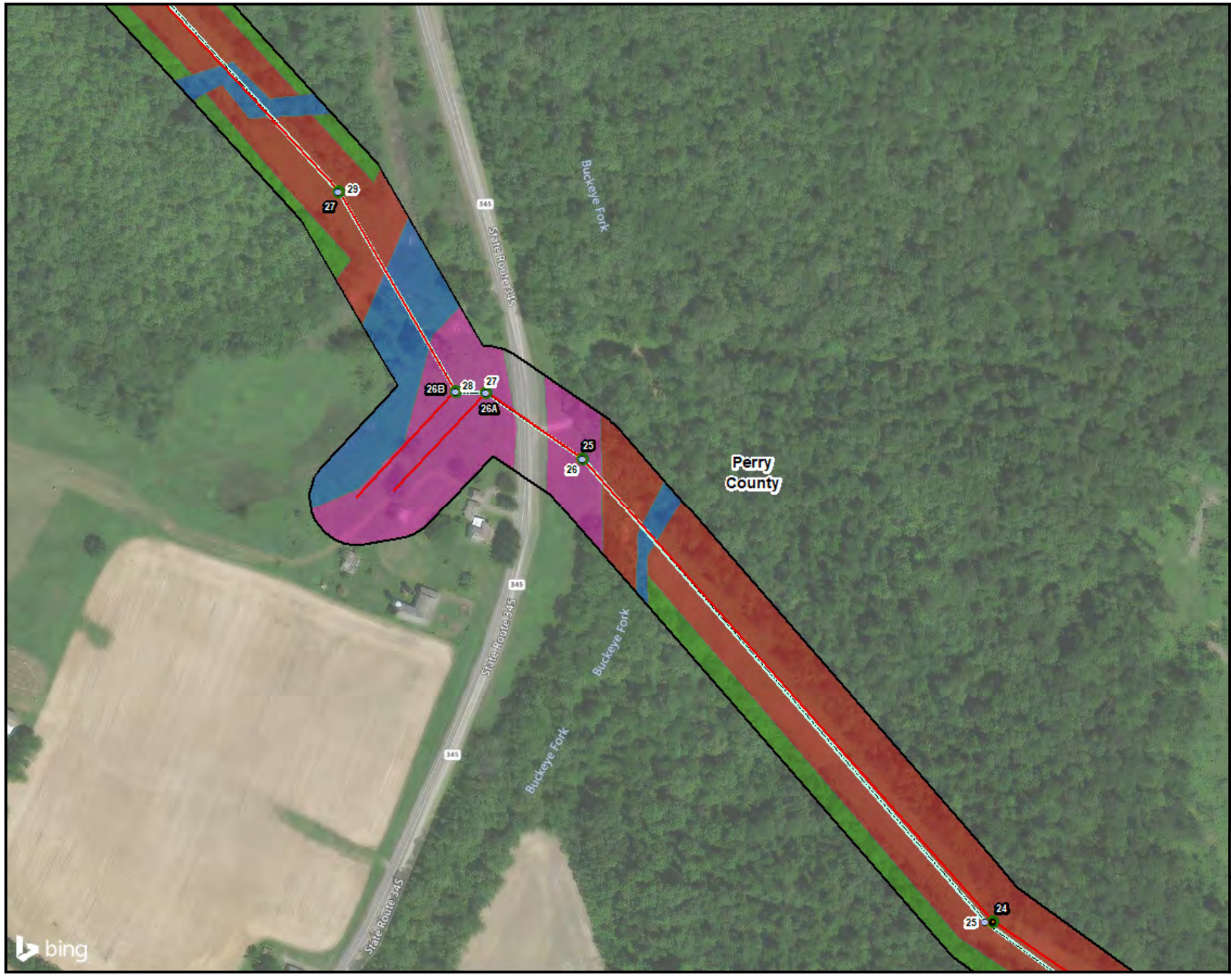

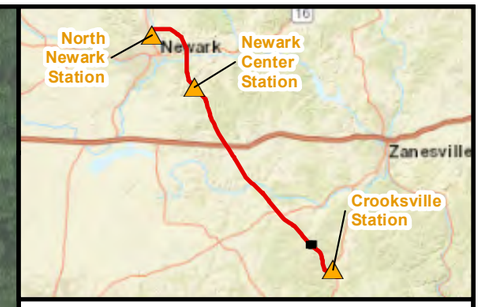

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5L
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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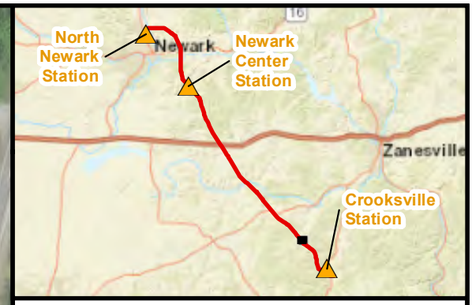

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5M
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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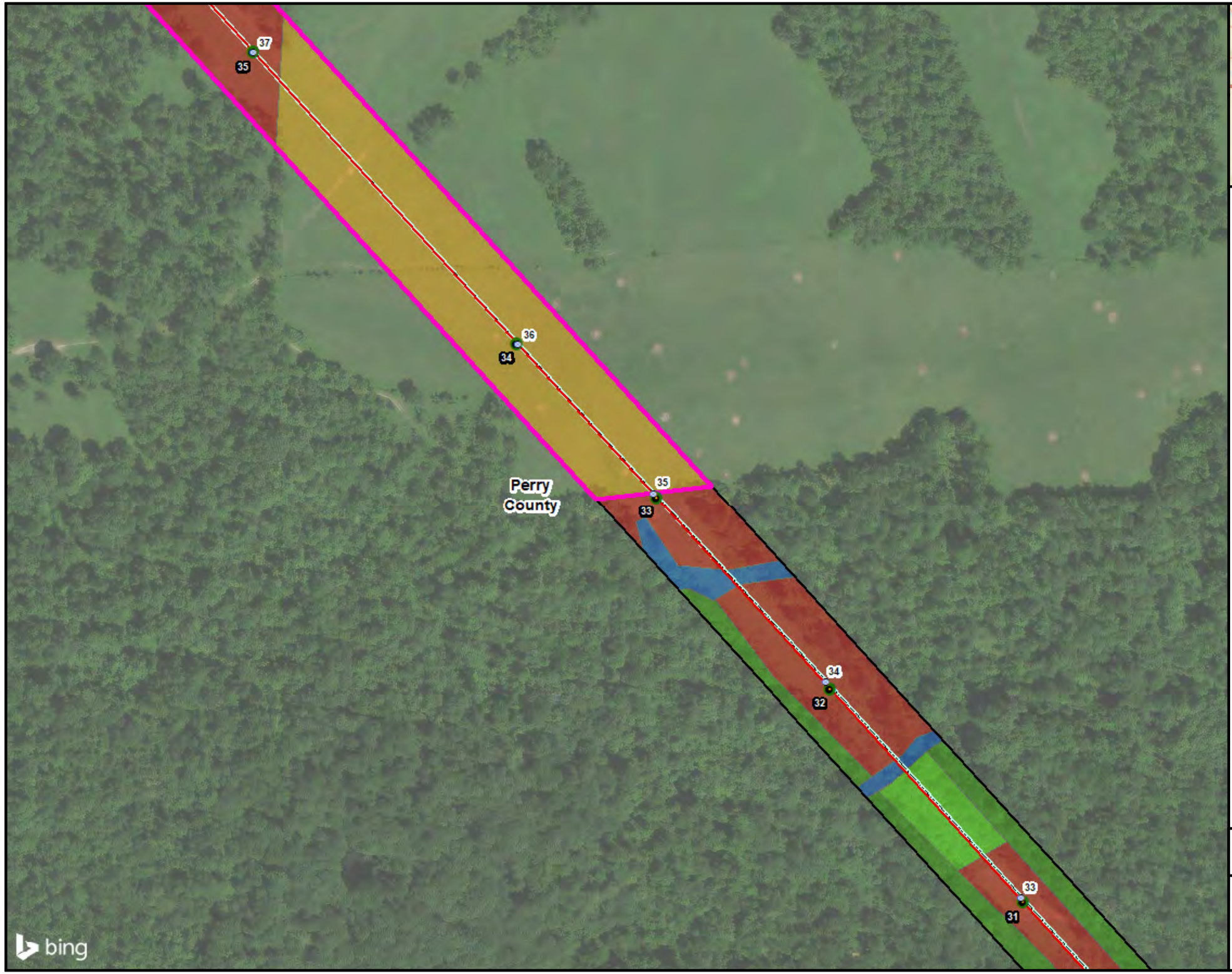

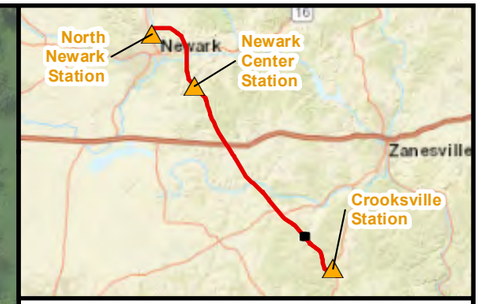

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5N
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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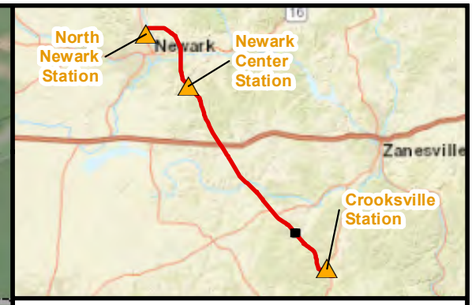

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5O
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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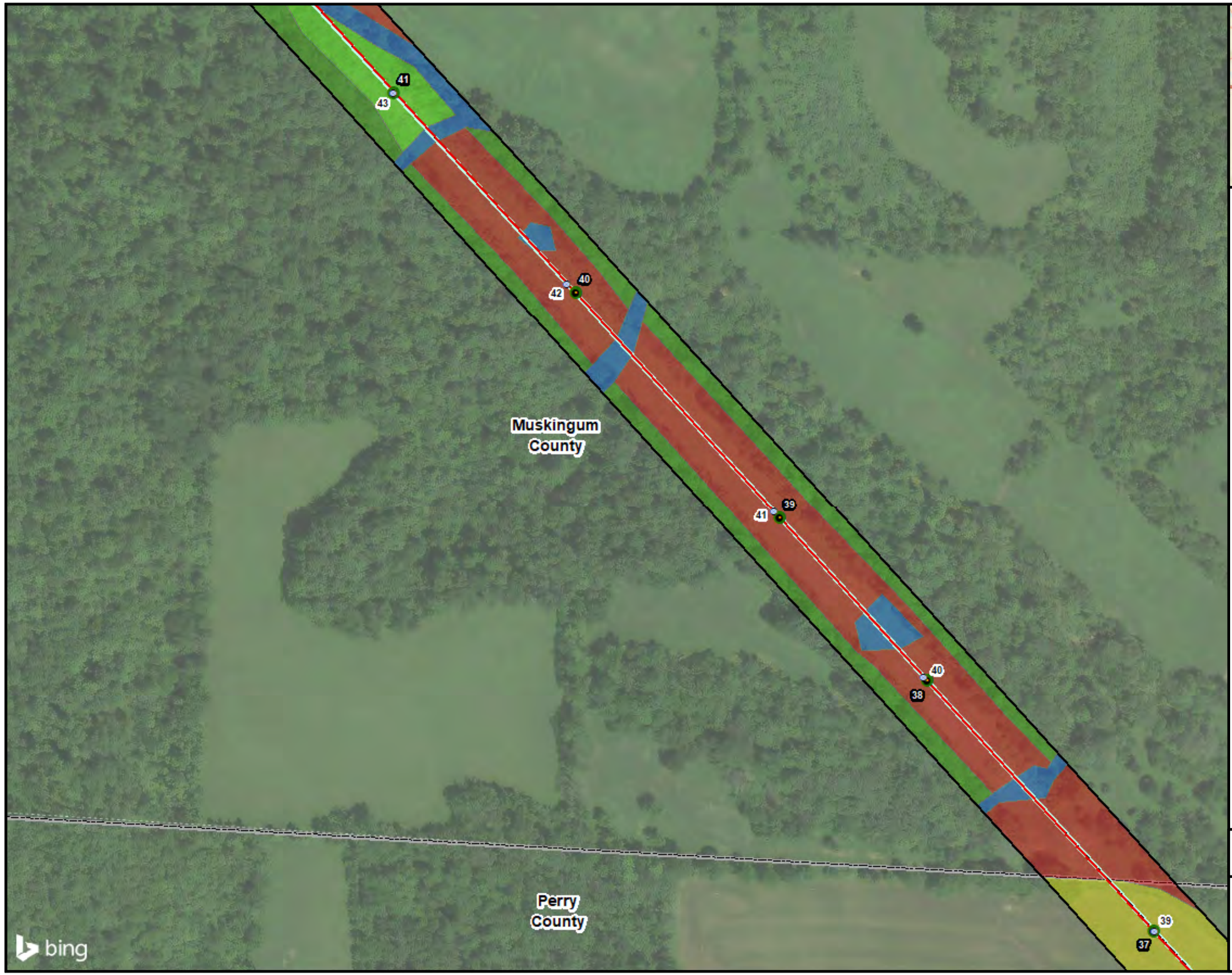

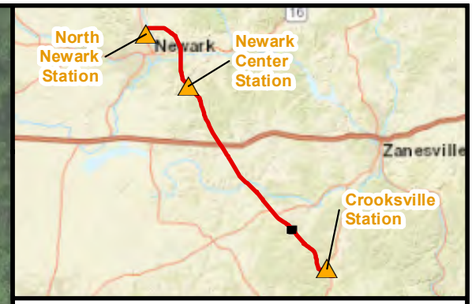

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5P
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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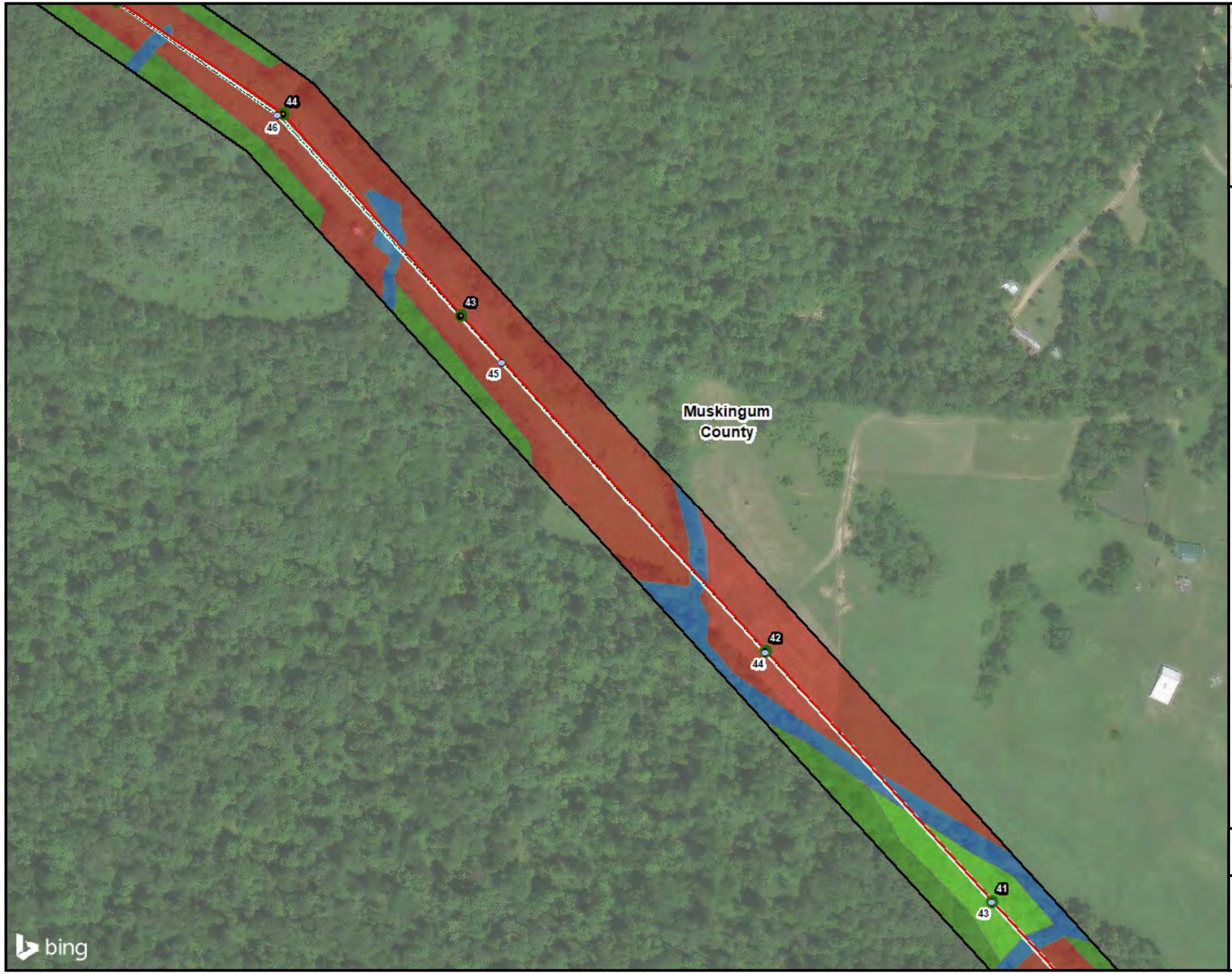

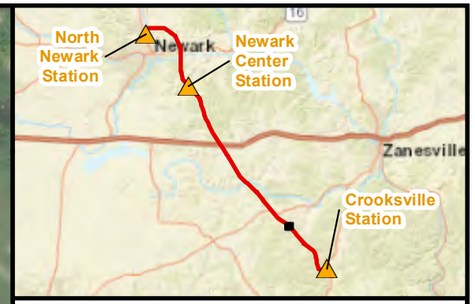

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5Q
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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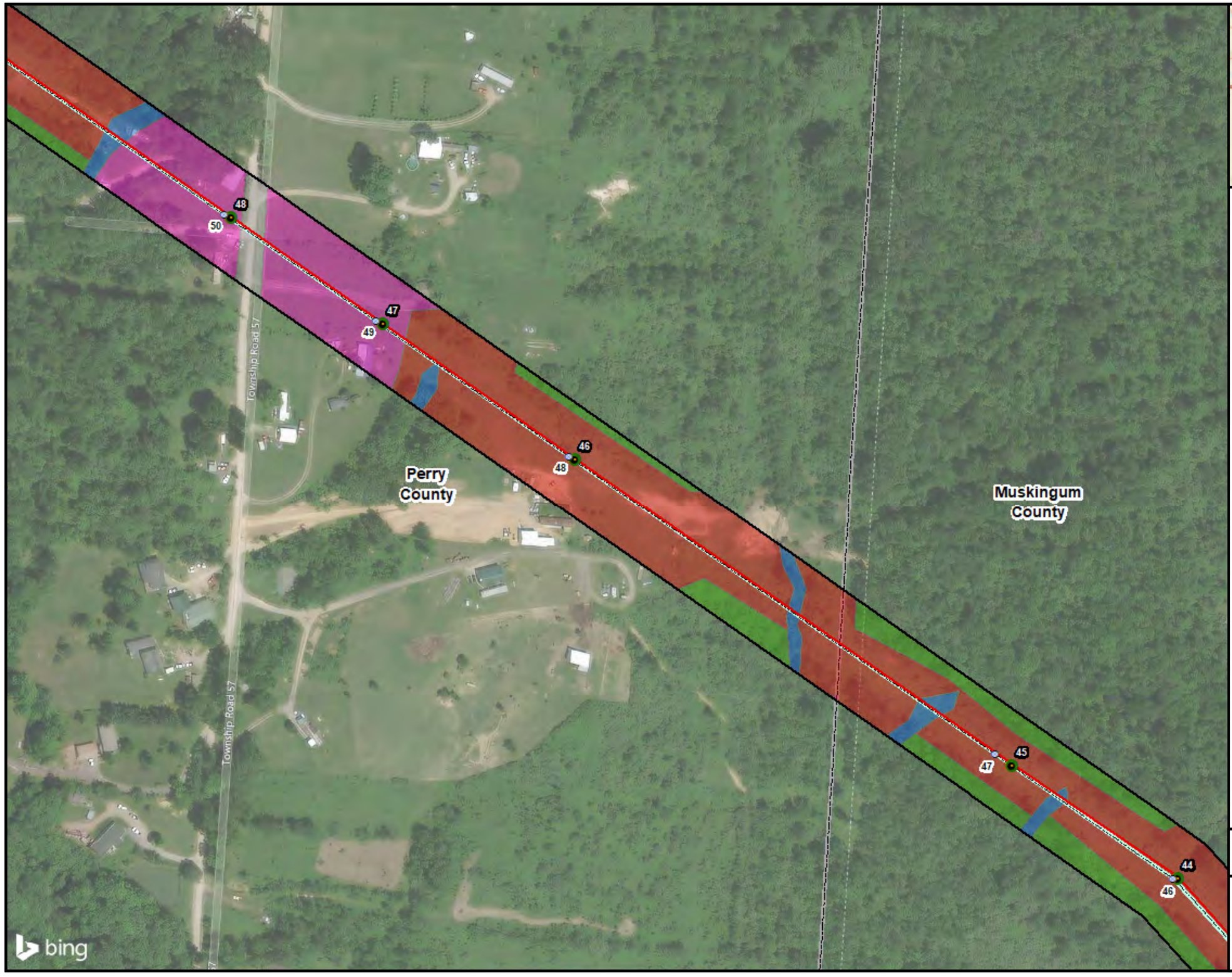

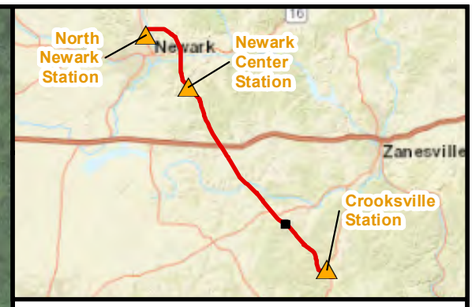

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5R
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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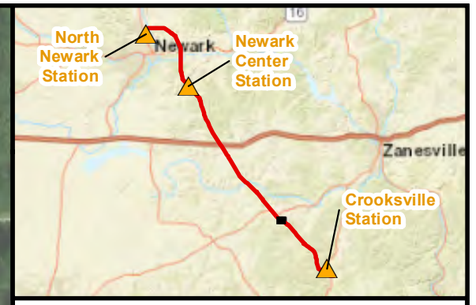

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5S
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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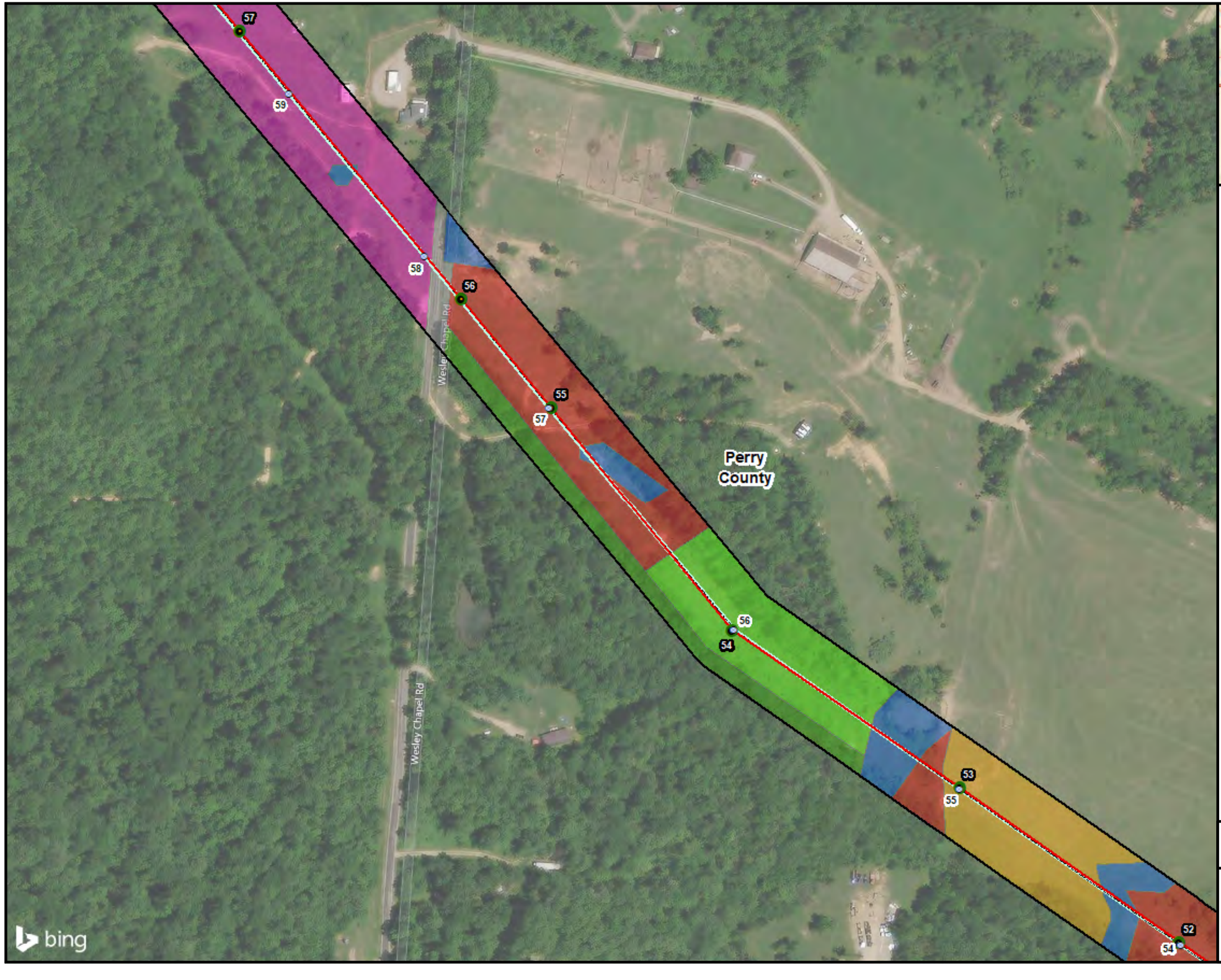

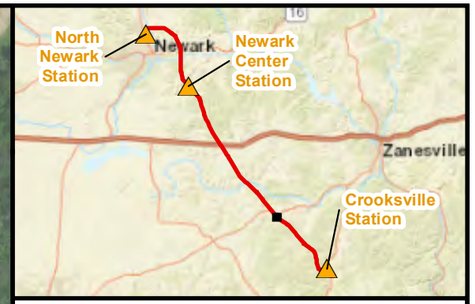

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5T
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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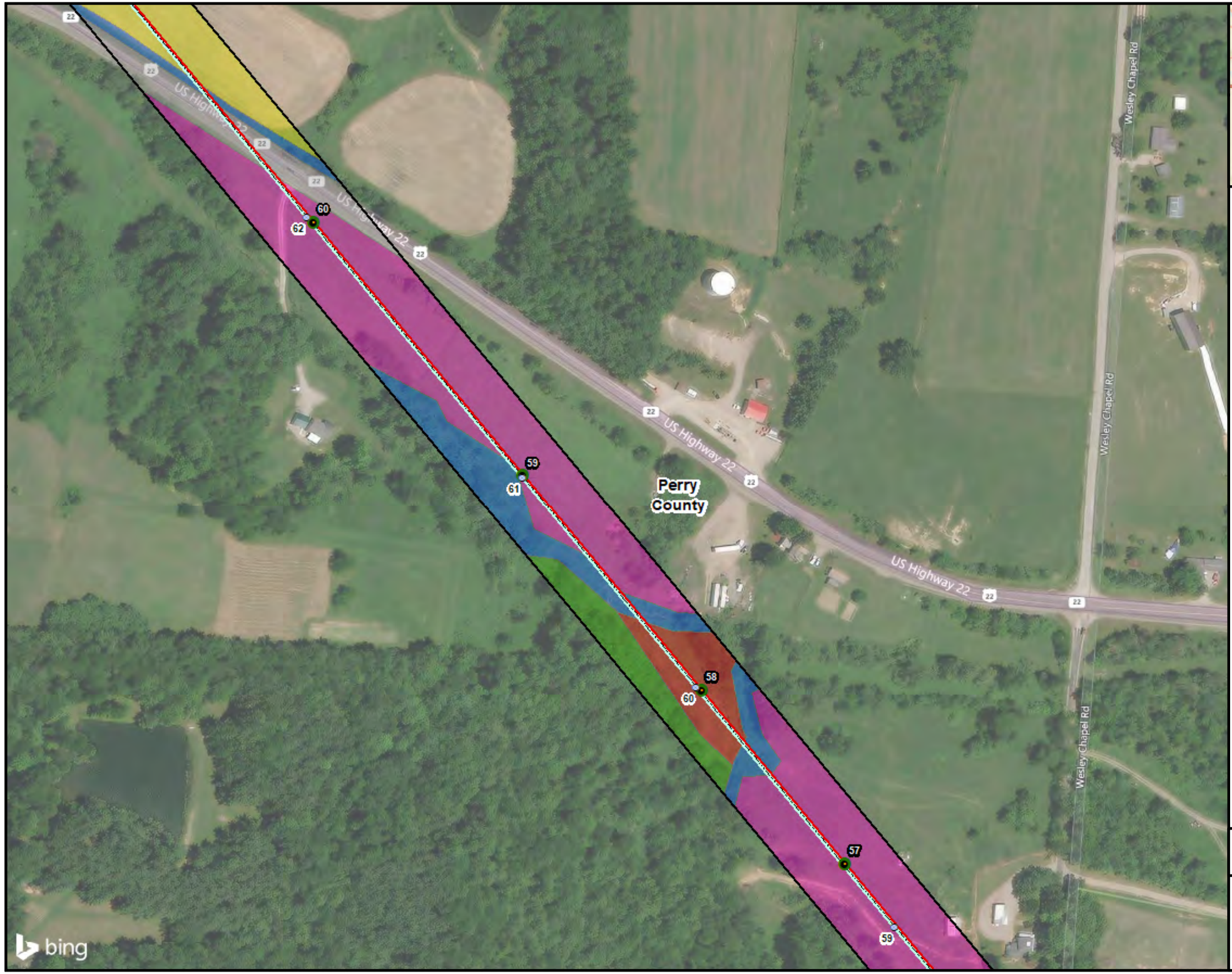

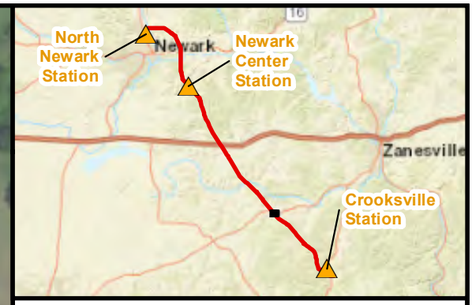

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5U
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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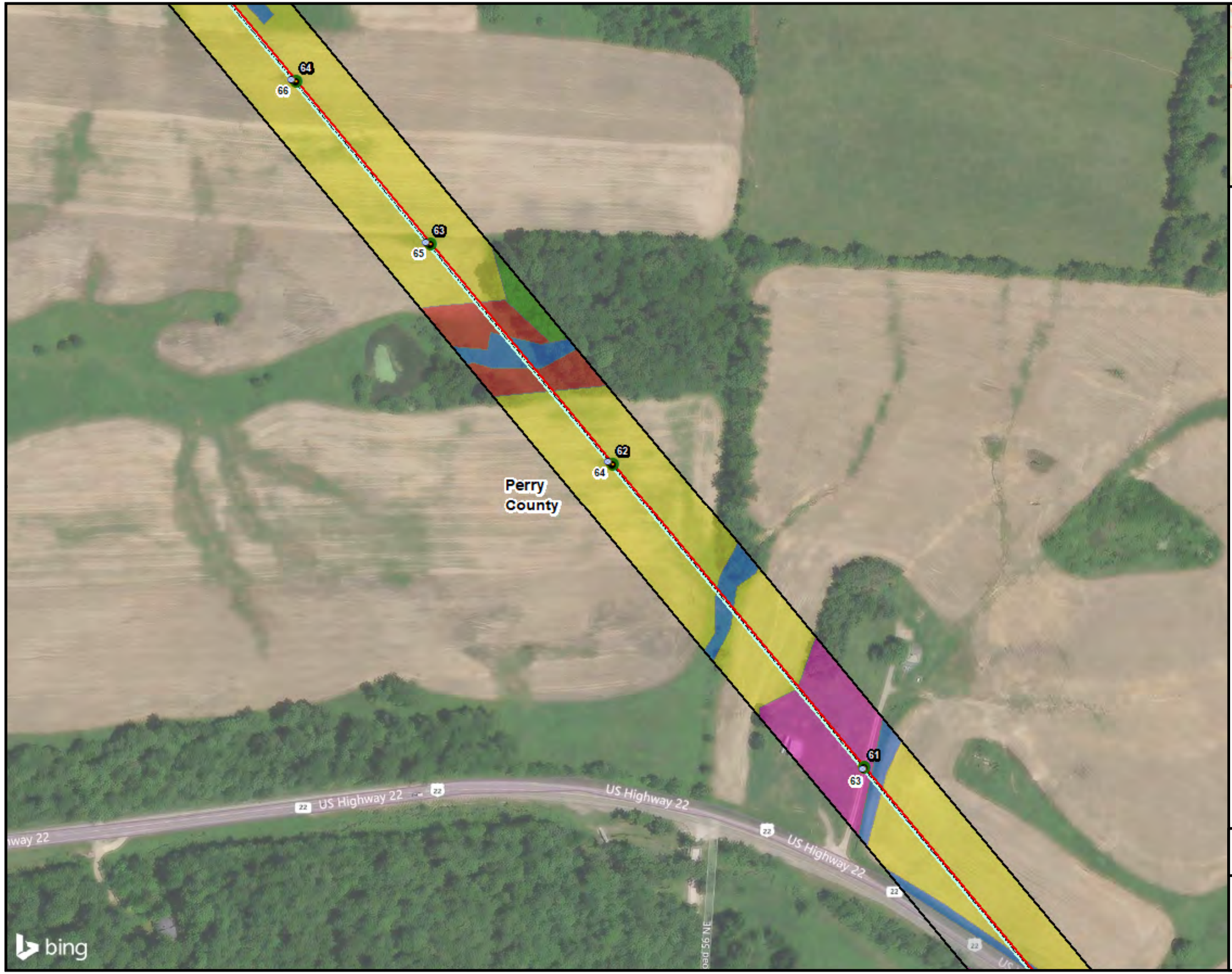

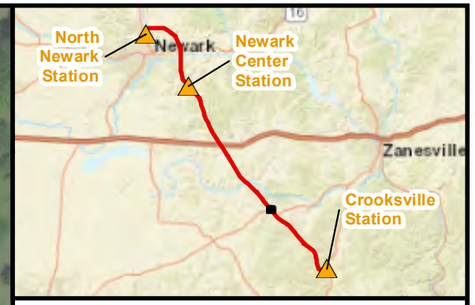

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5V
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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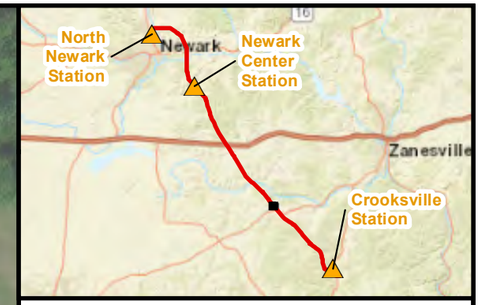

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5W
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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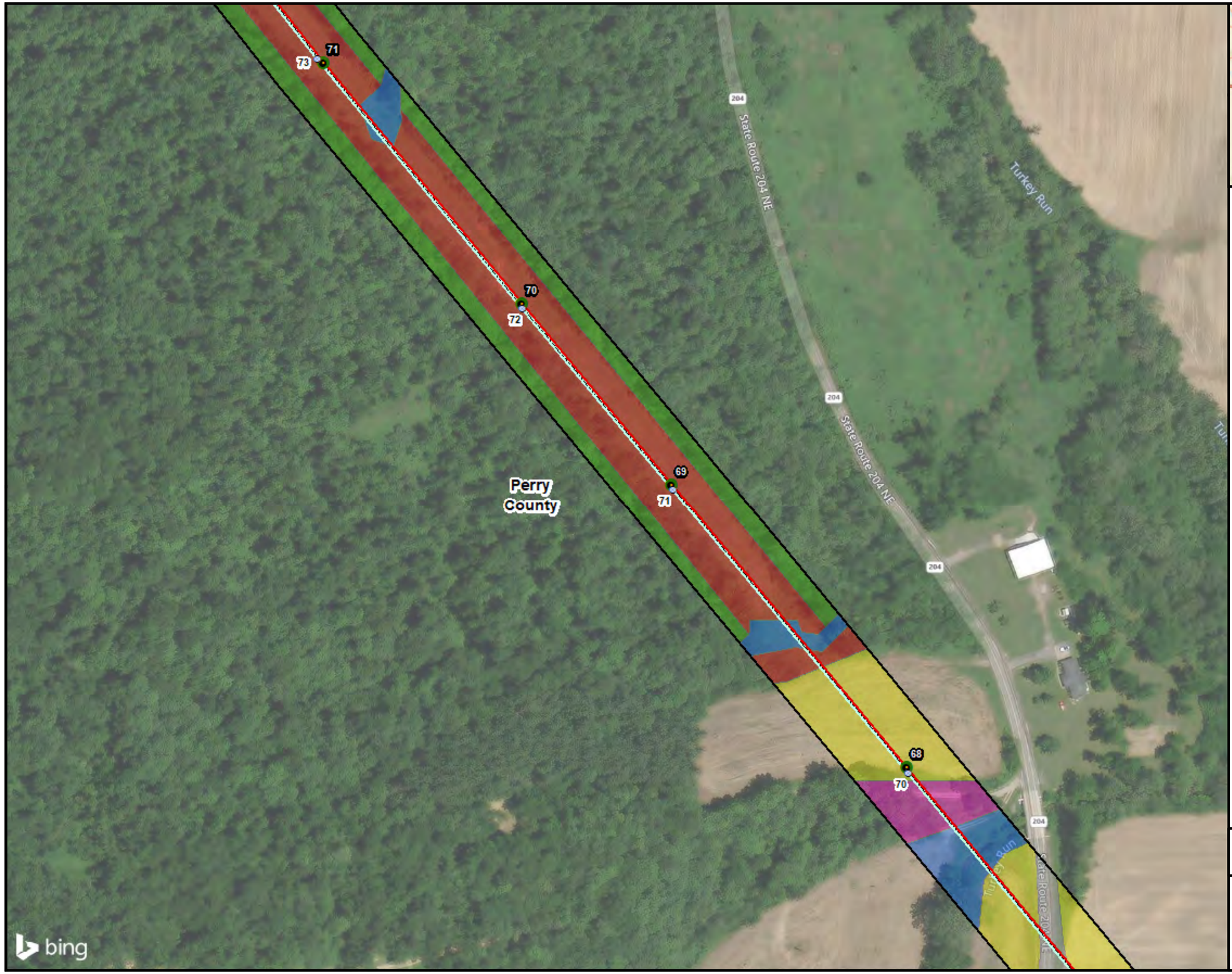

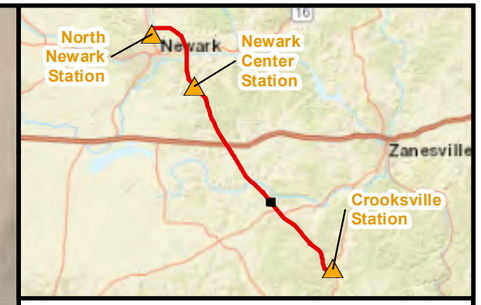

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5X
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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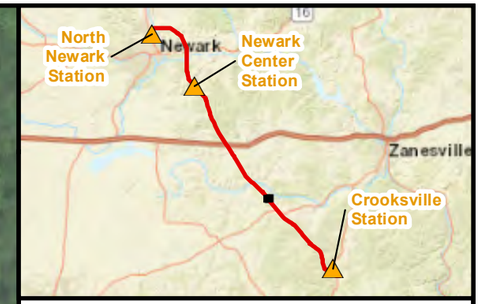


LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

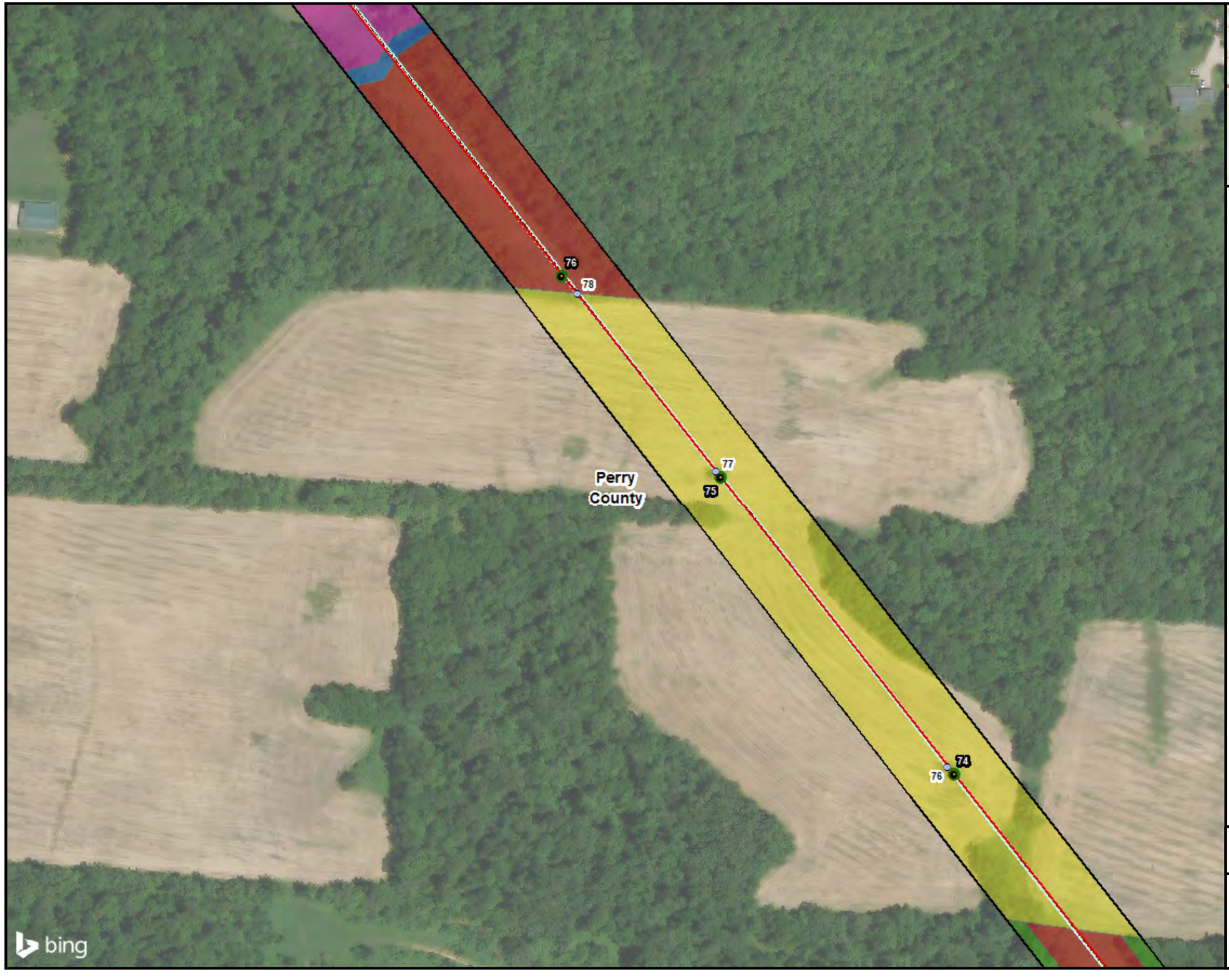
Crooksville-North Newark 138kV Transmission Line Rebuild Project

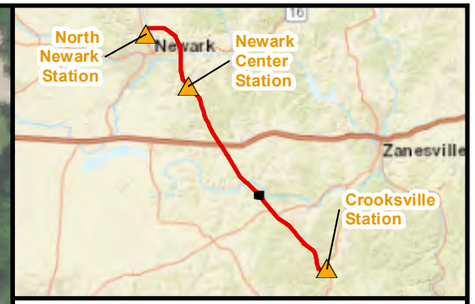
FIGURE 5Y
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

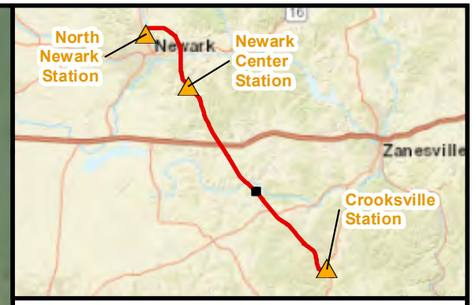
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5Z
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark\AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AA
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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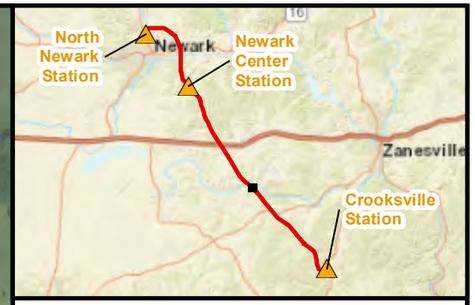

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AB
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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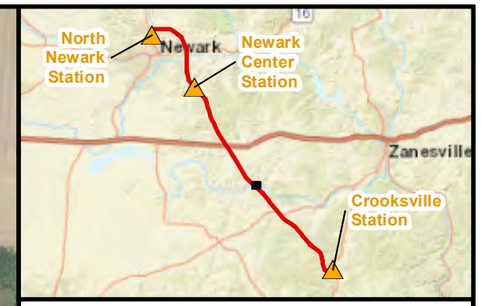

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AC
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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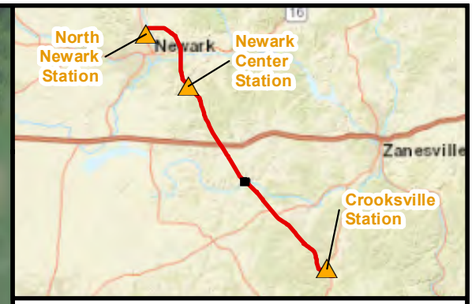

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AD
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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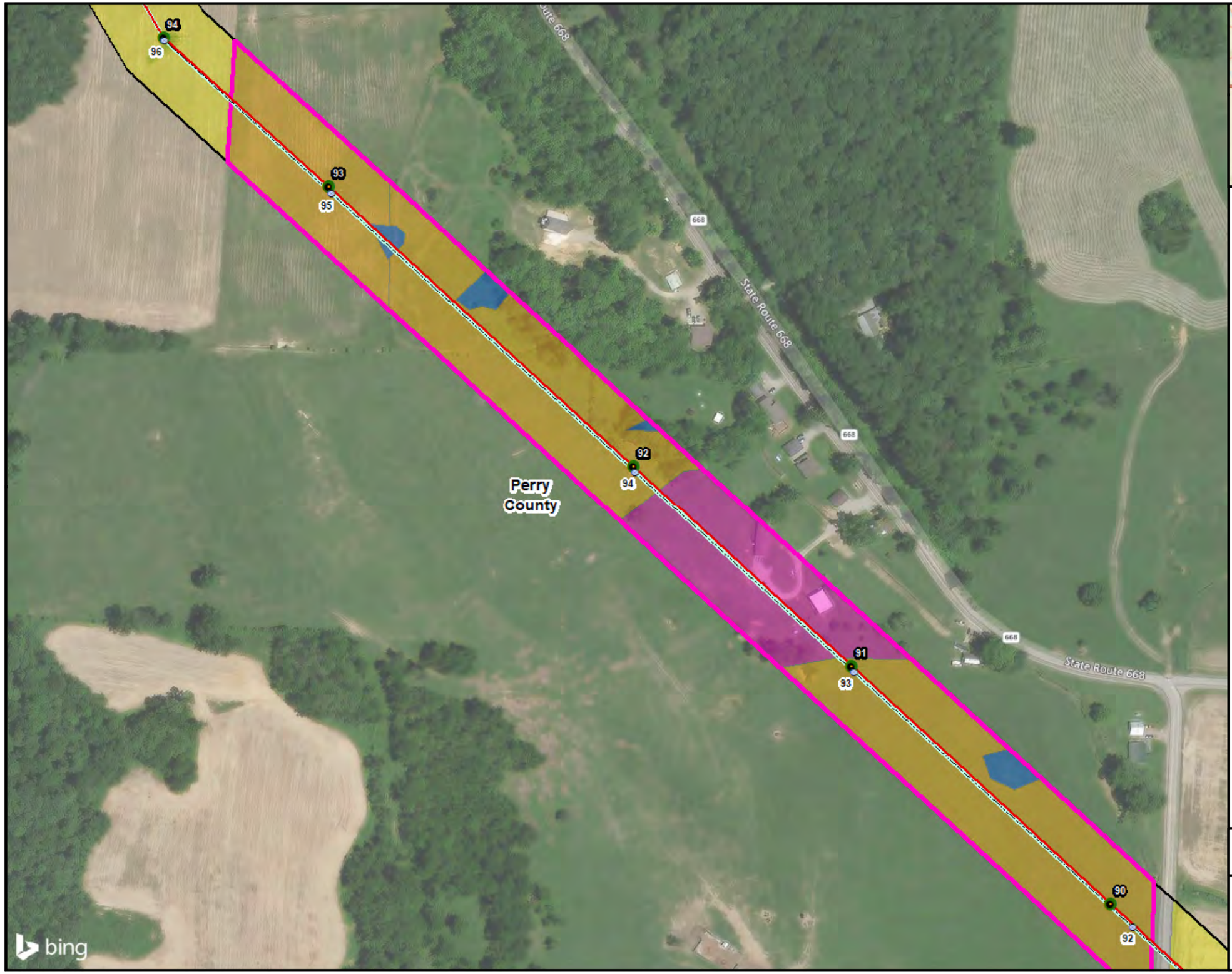

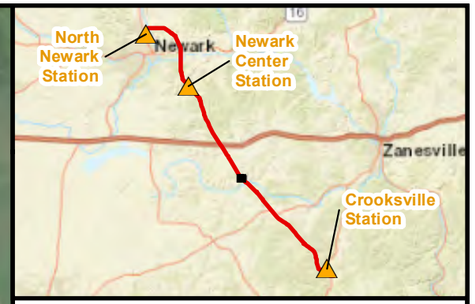

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AE
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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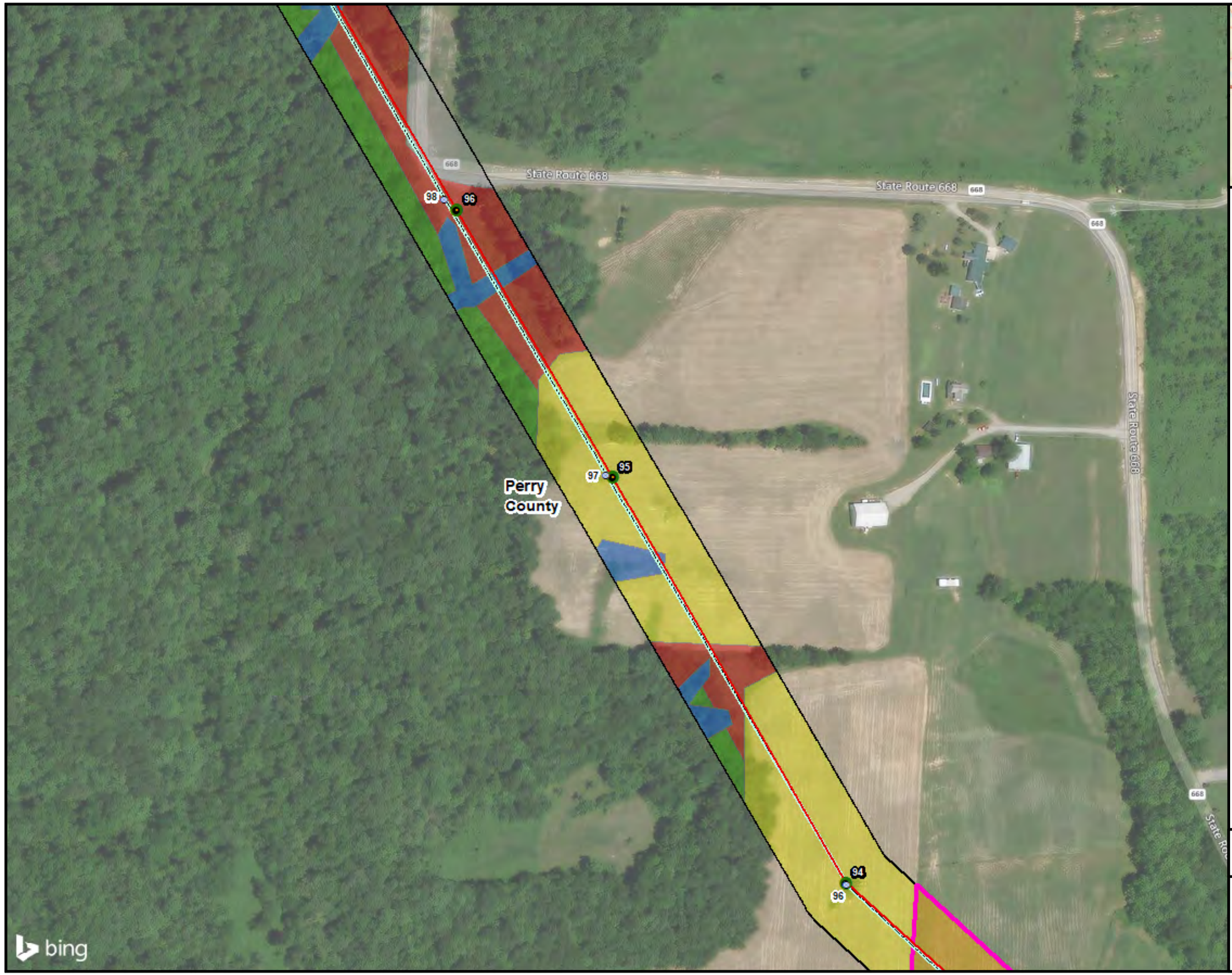

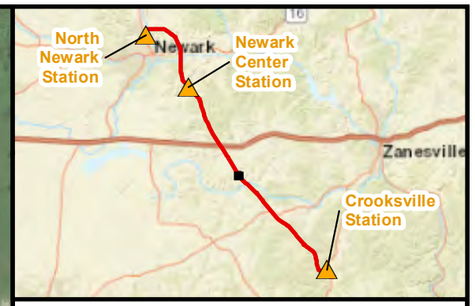

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AF
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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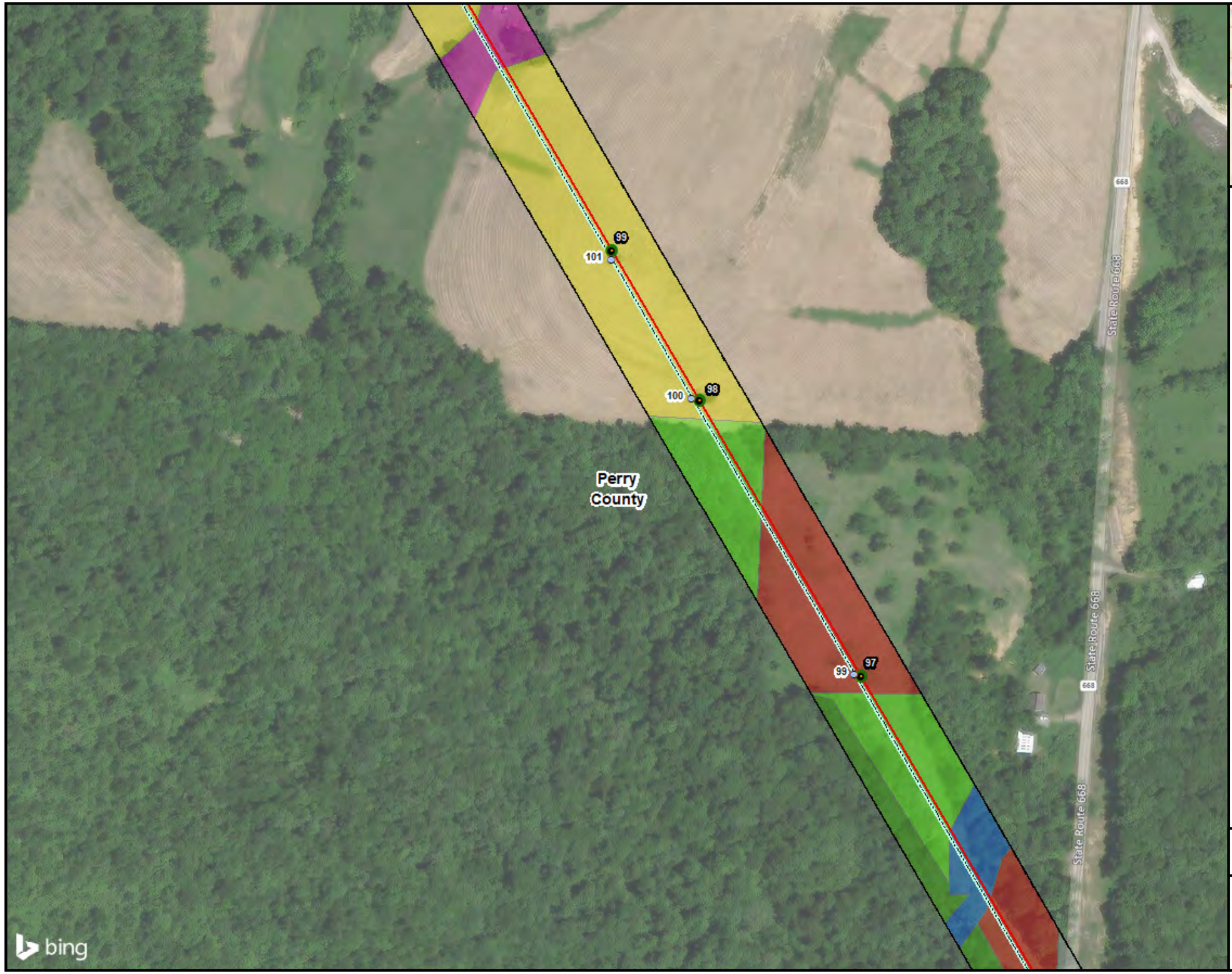

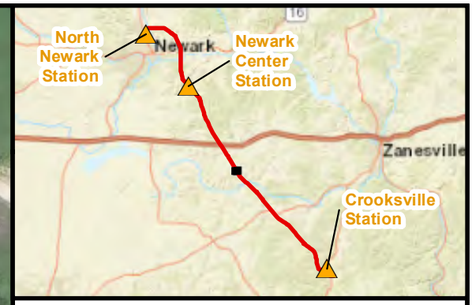

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AG
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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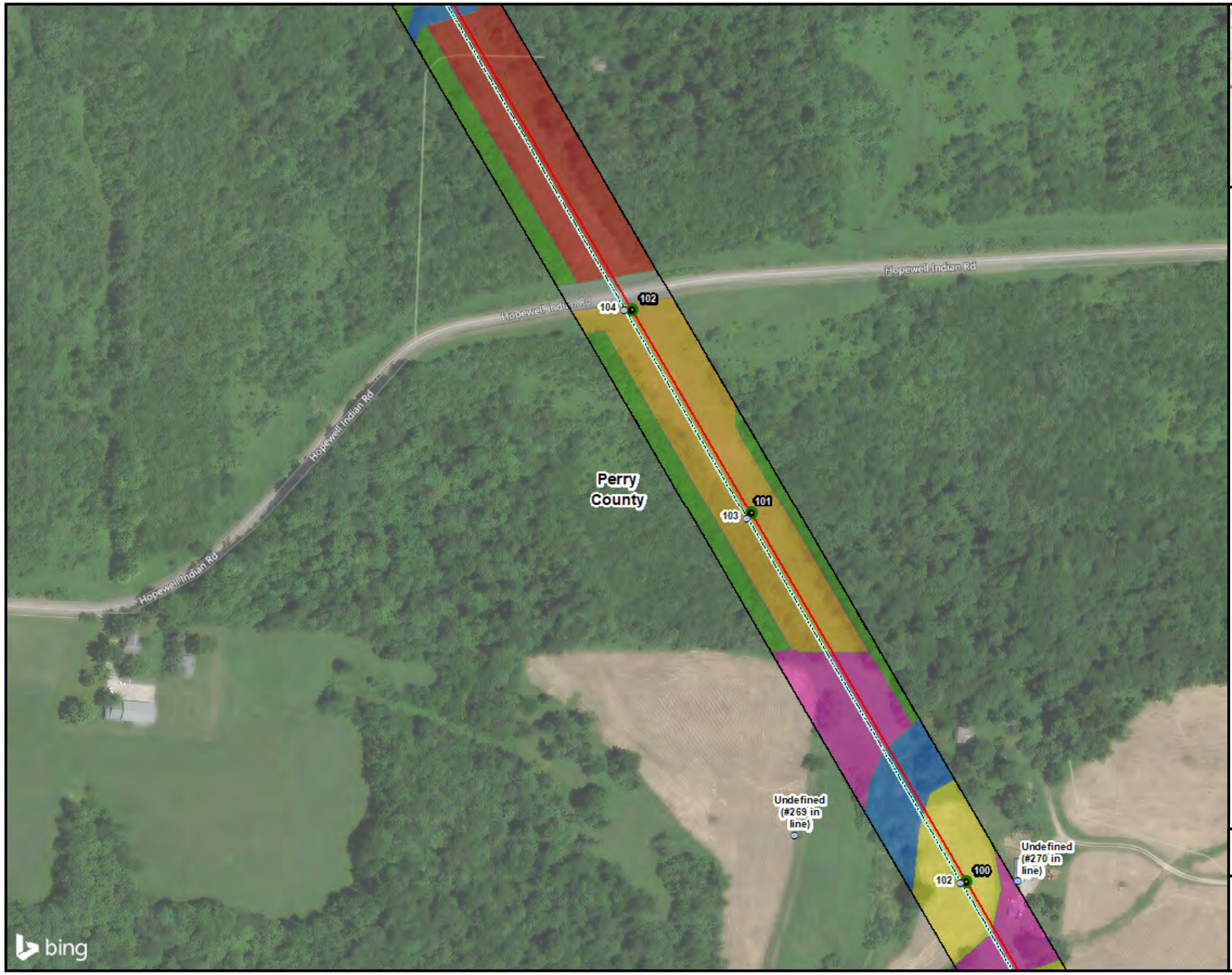

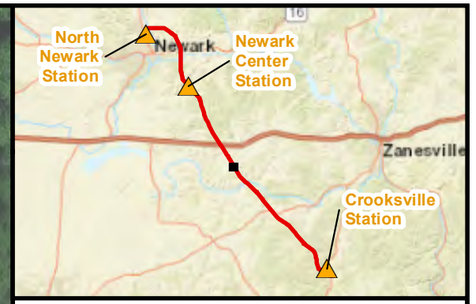

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AH
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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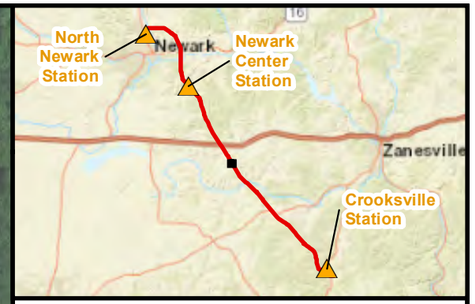

LEGEND:

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- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Shrub/Scrub
- Stream/Wetland

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Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AI
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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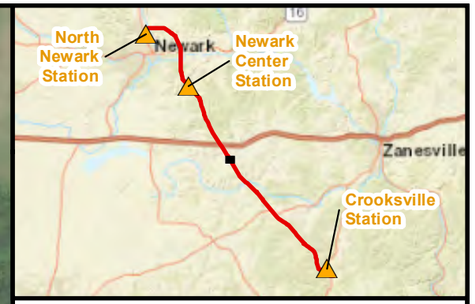

LEGEND:

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- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
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N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AJ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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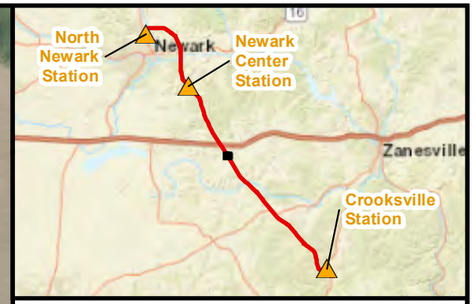

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AK
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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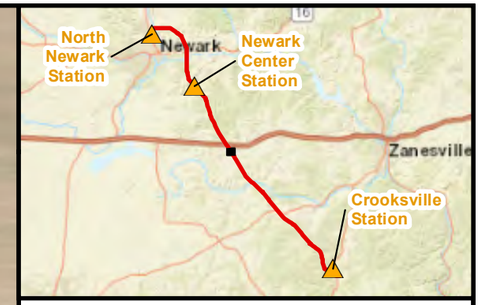

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AL
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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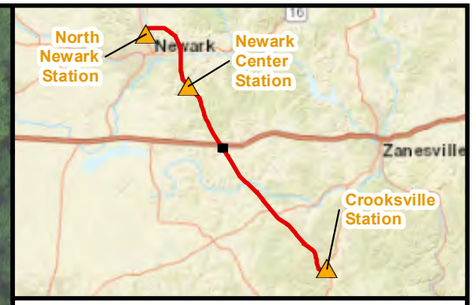

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AM
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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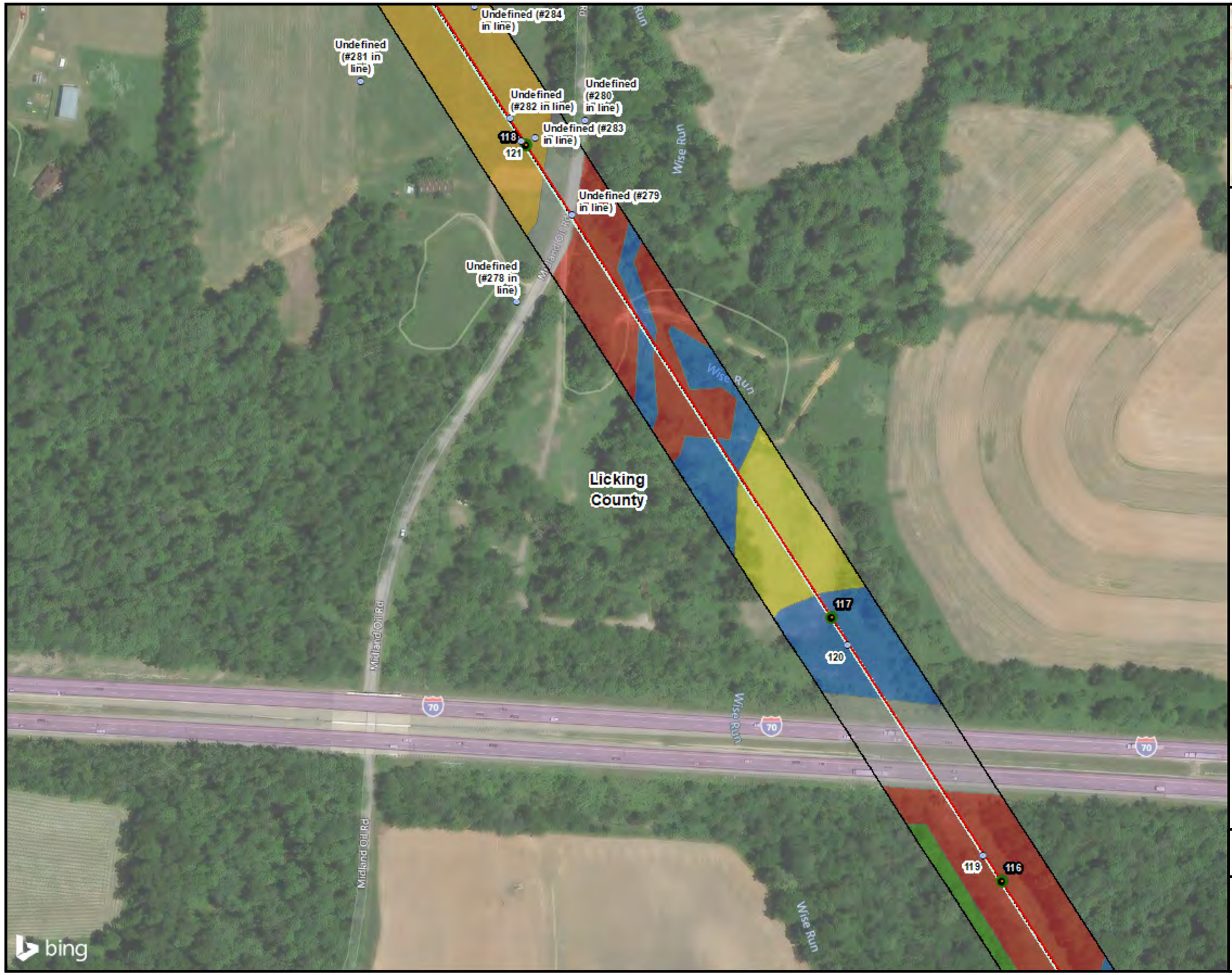

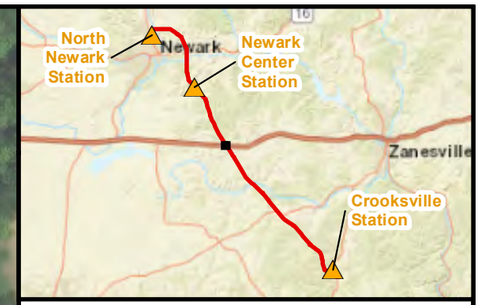

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AN
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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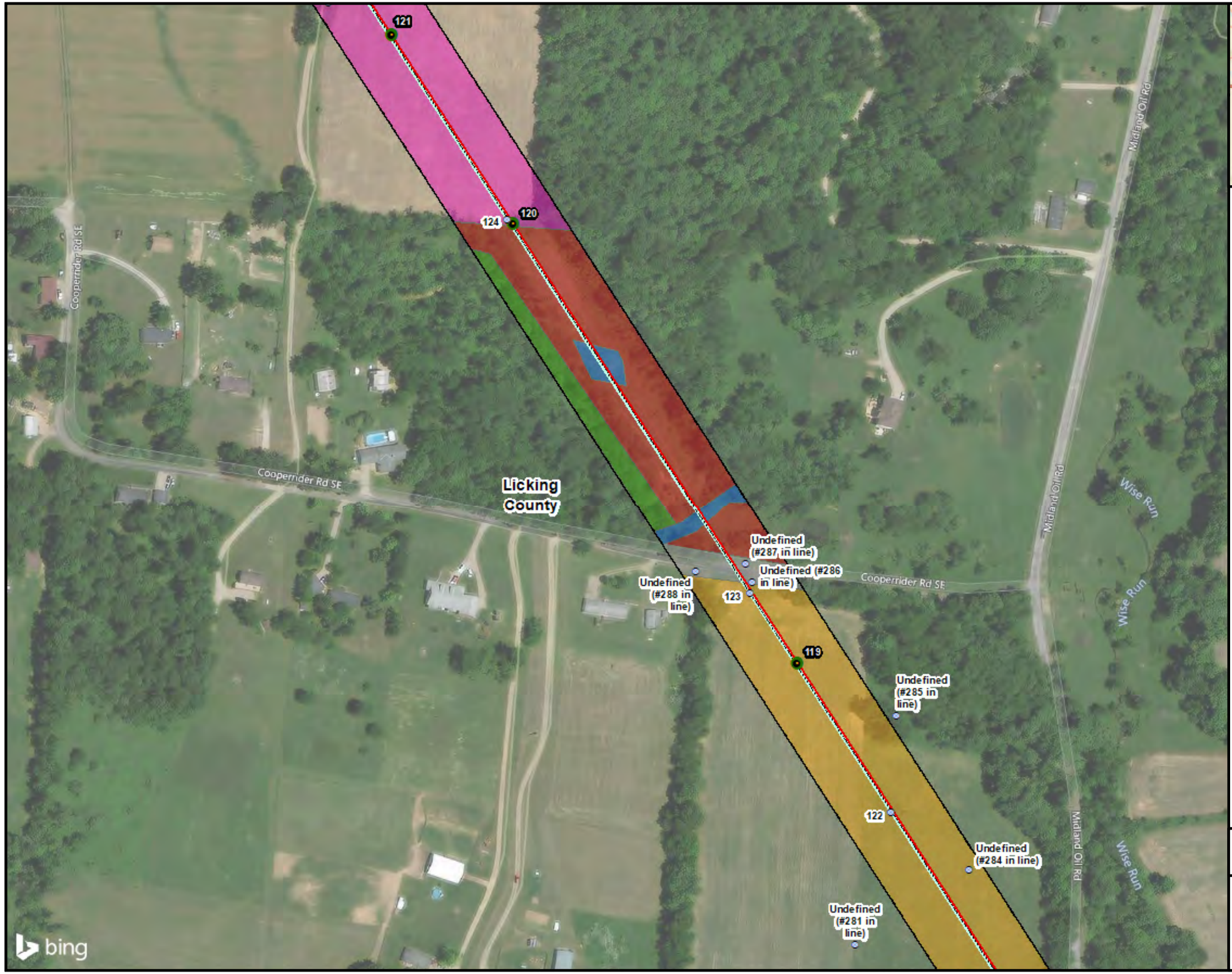

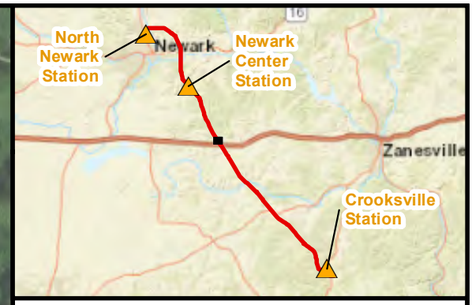

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AO
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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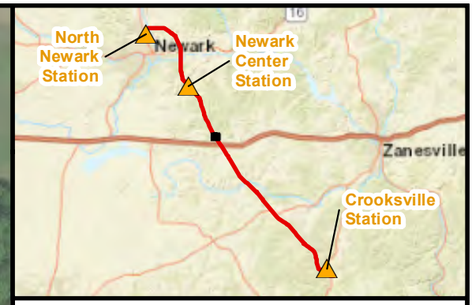

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Shrub/Scrub

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AP
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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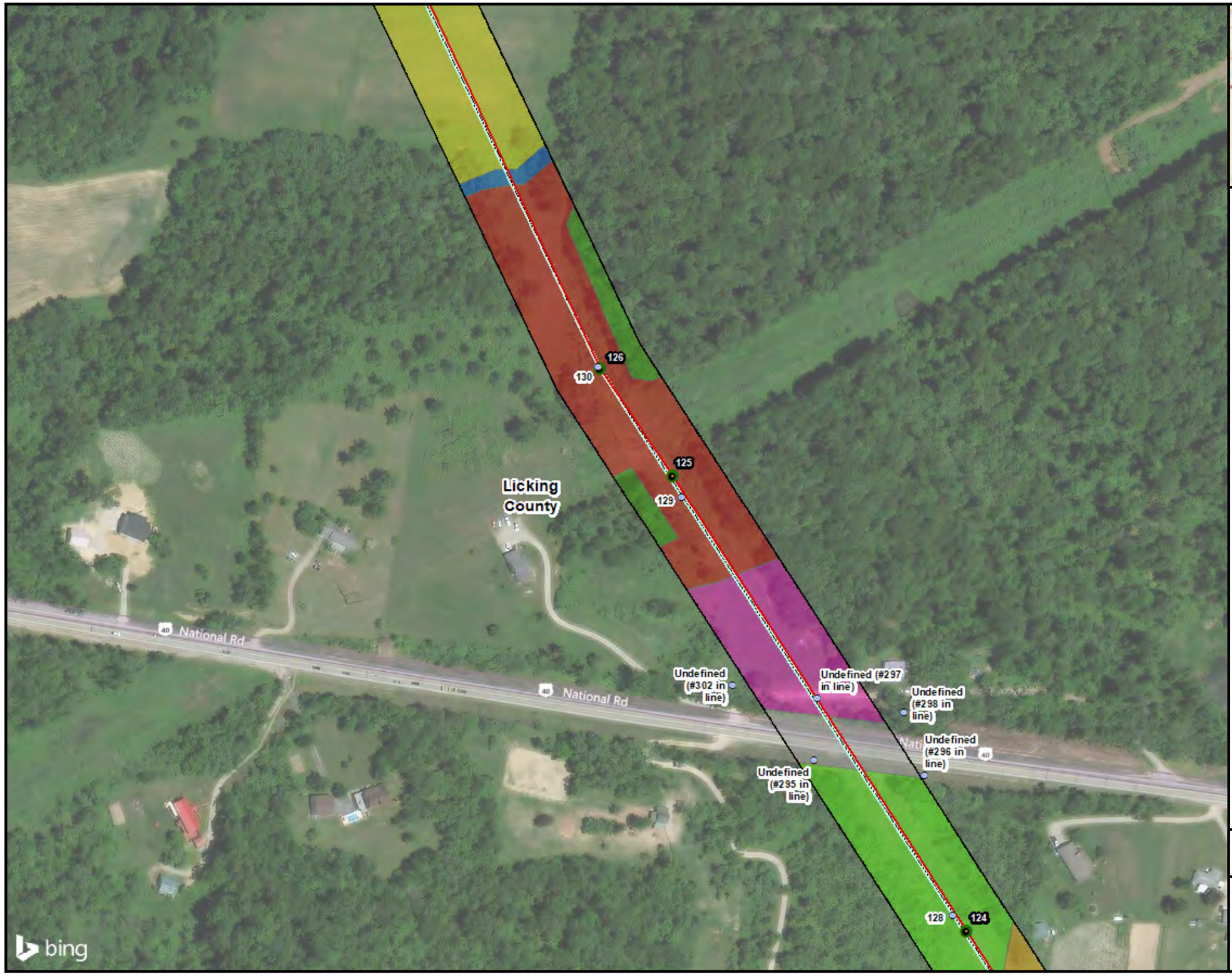

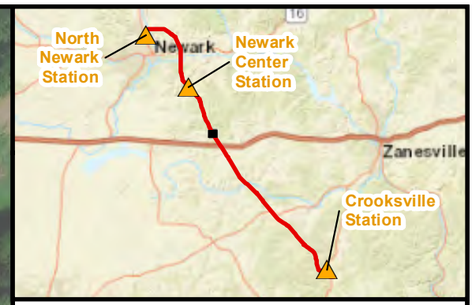

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AQ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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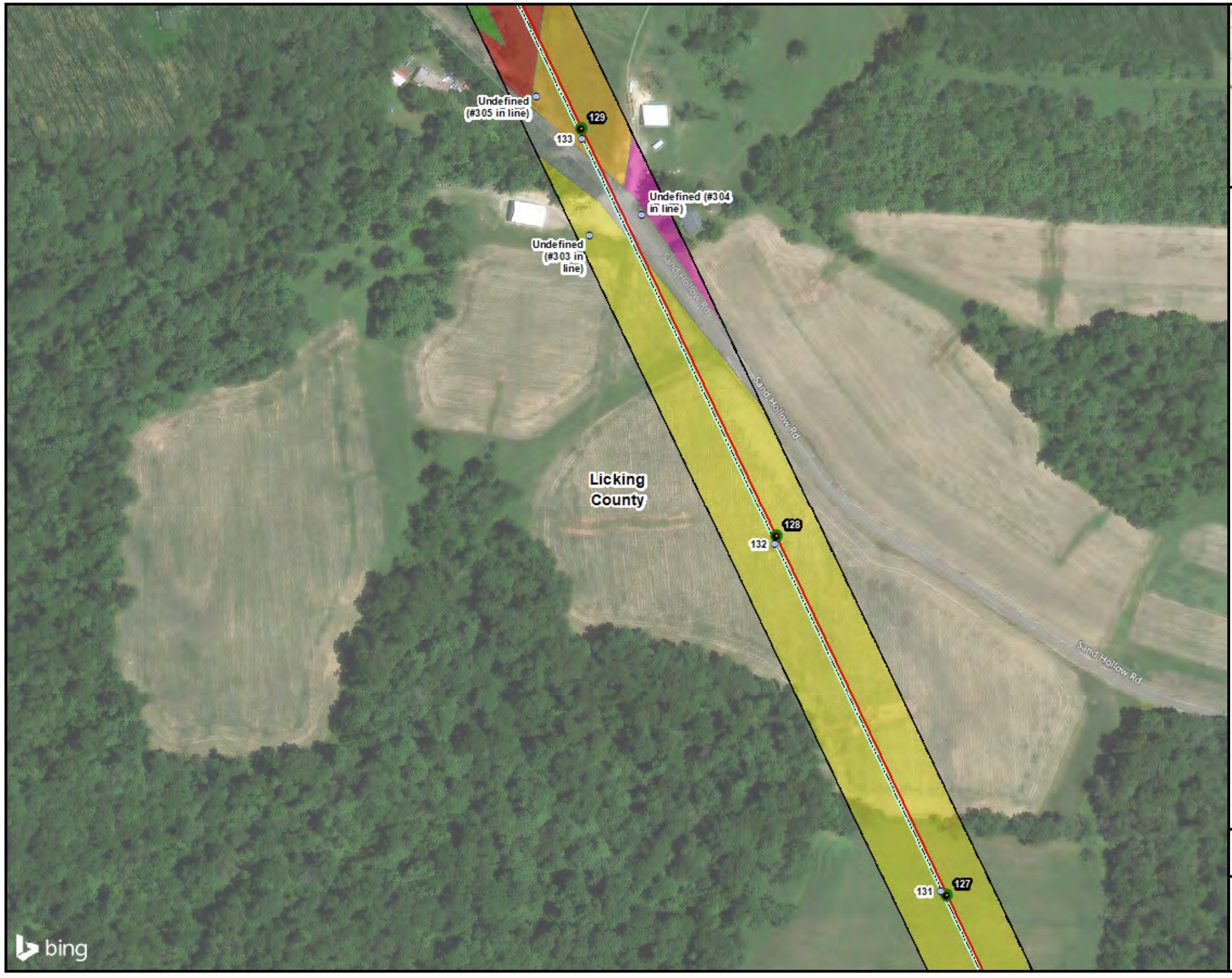

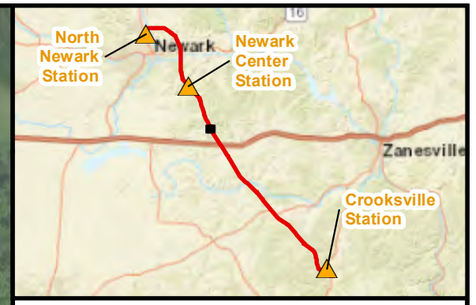

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AR
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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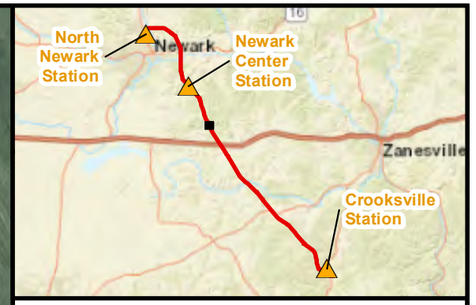

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AS
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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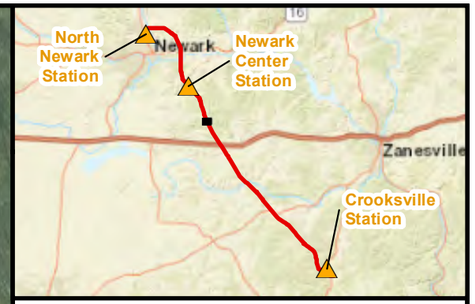

LEGEND:

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Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
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N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AT
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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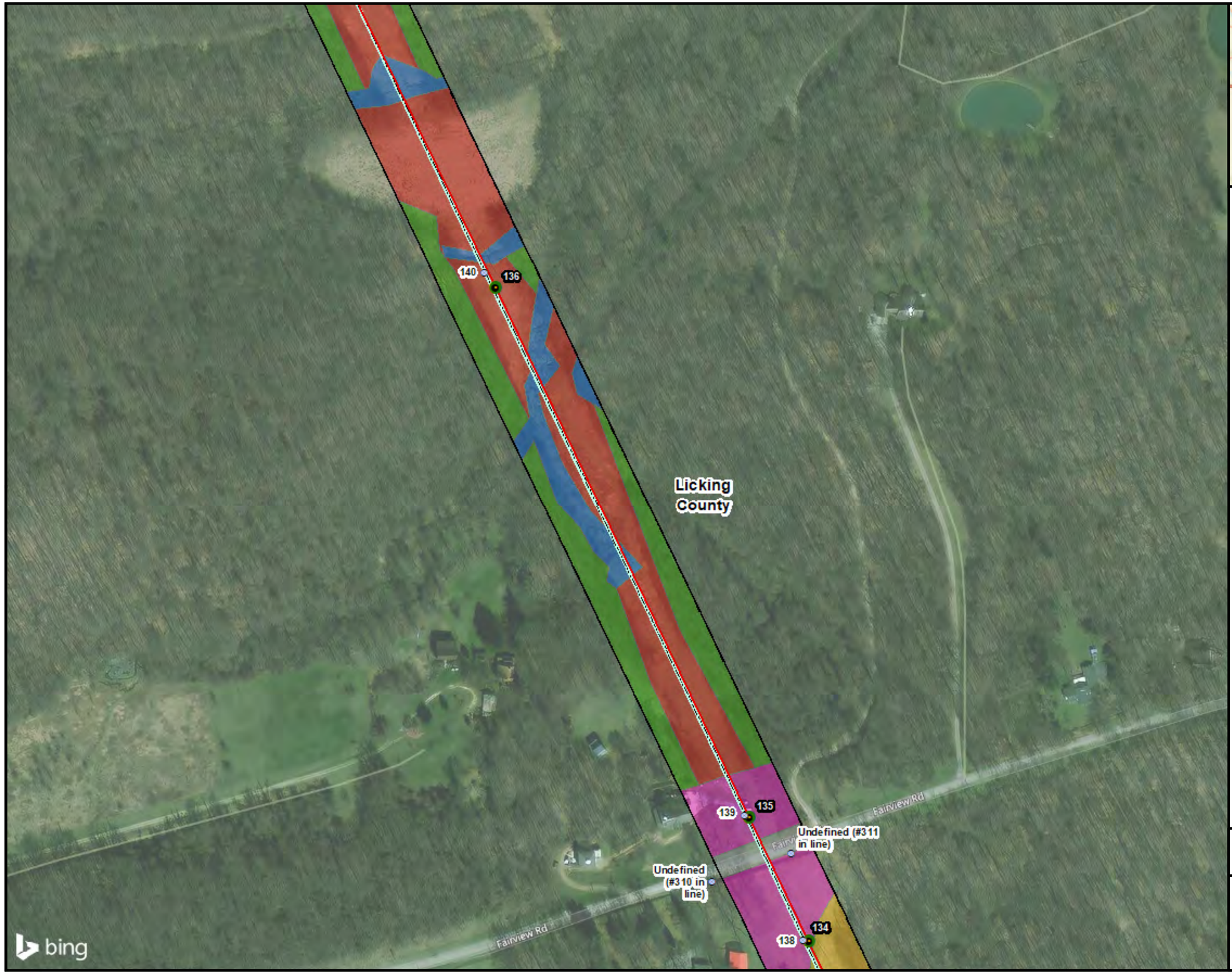

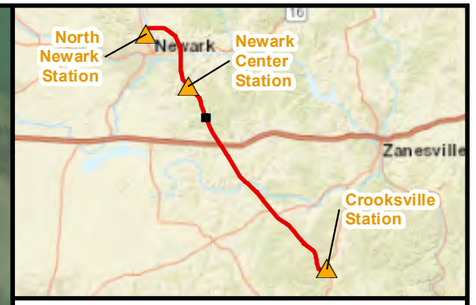

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AU
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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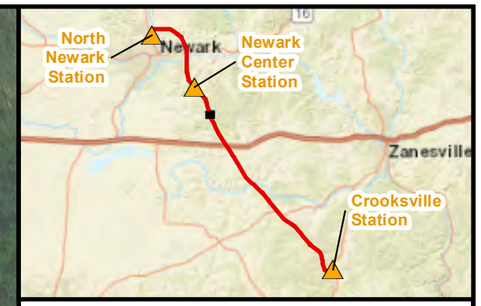

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AV
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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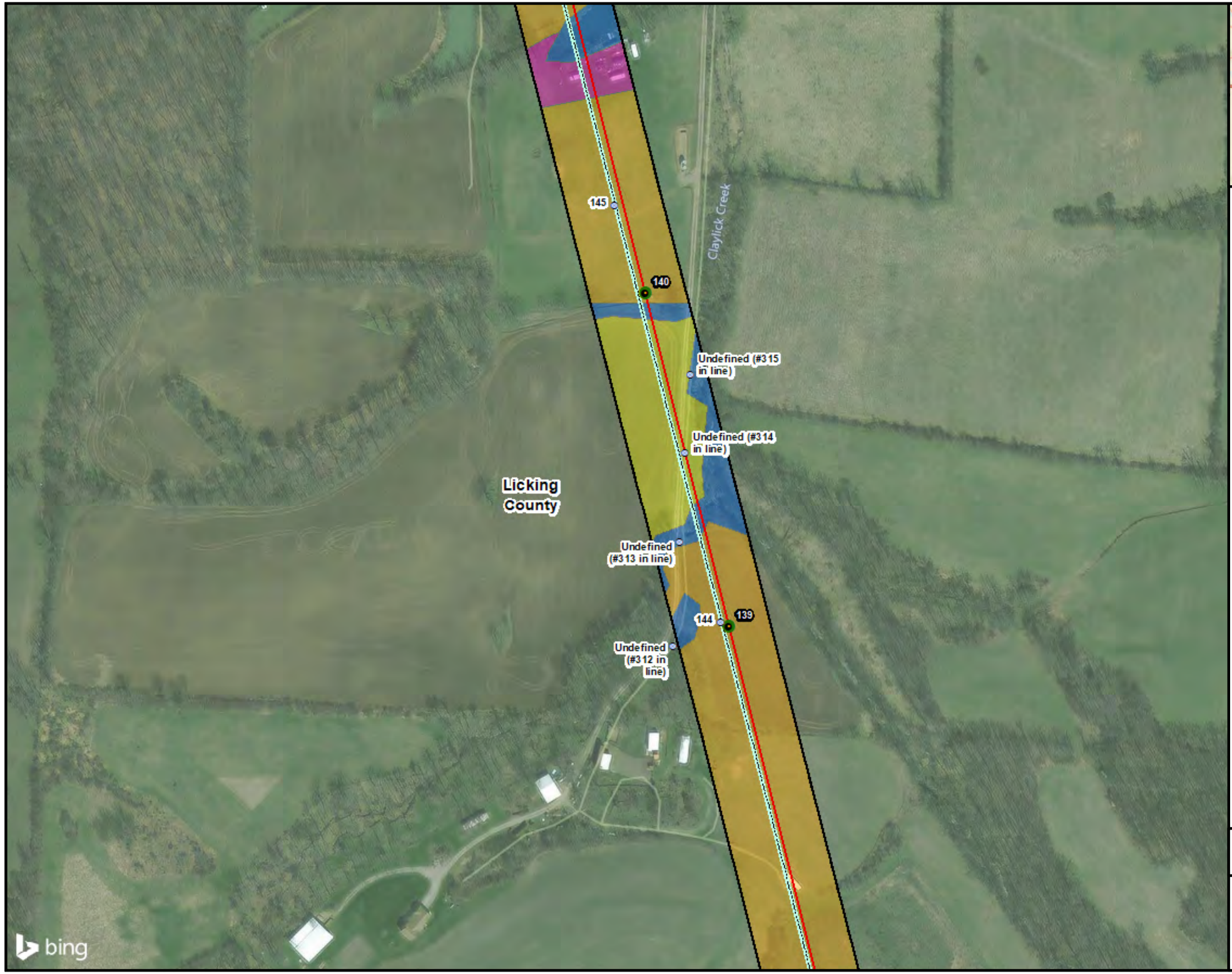

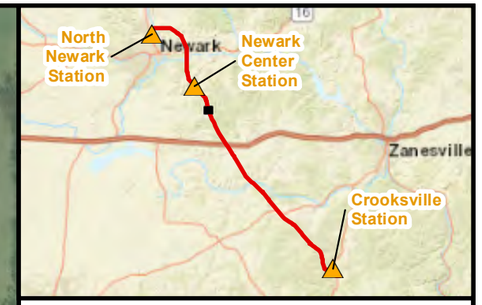

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AW
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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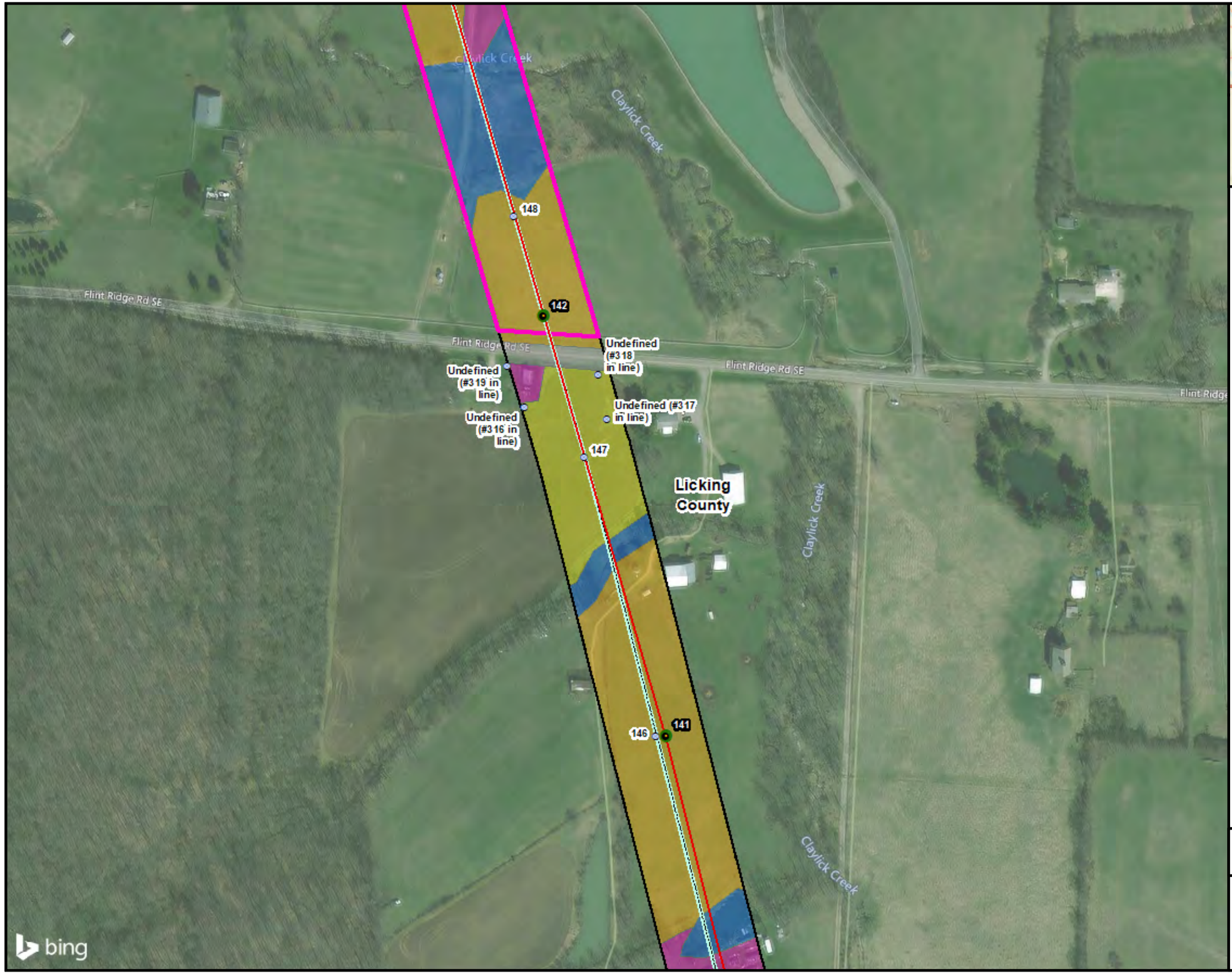

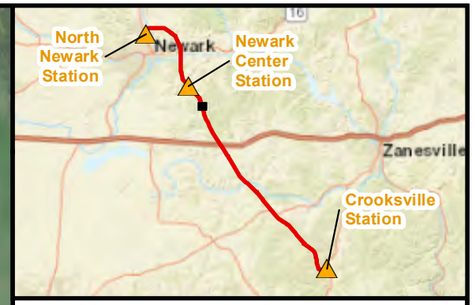

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AX
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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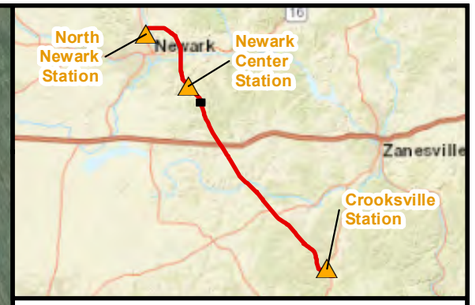

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AY
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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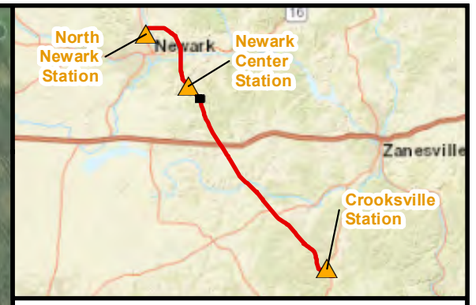

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5AZ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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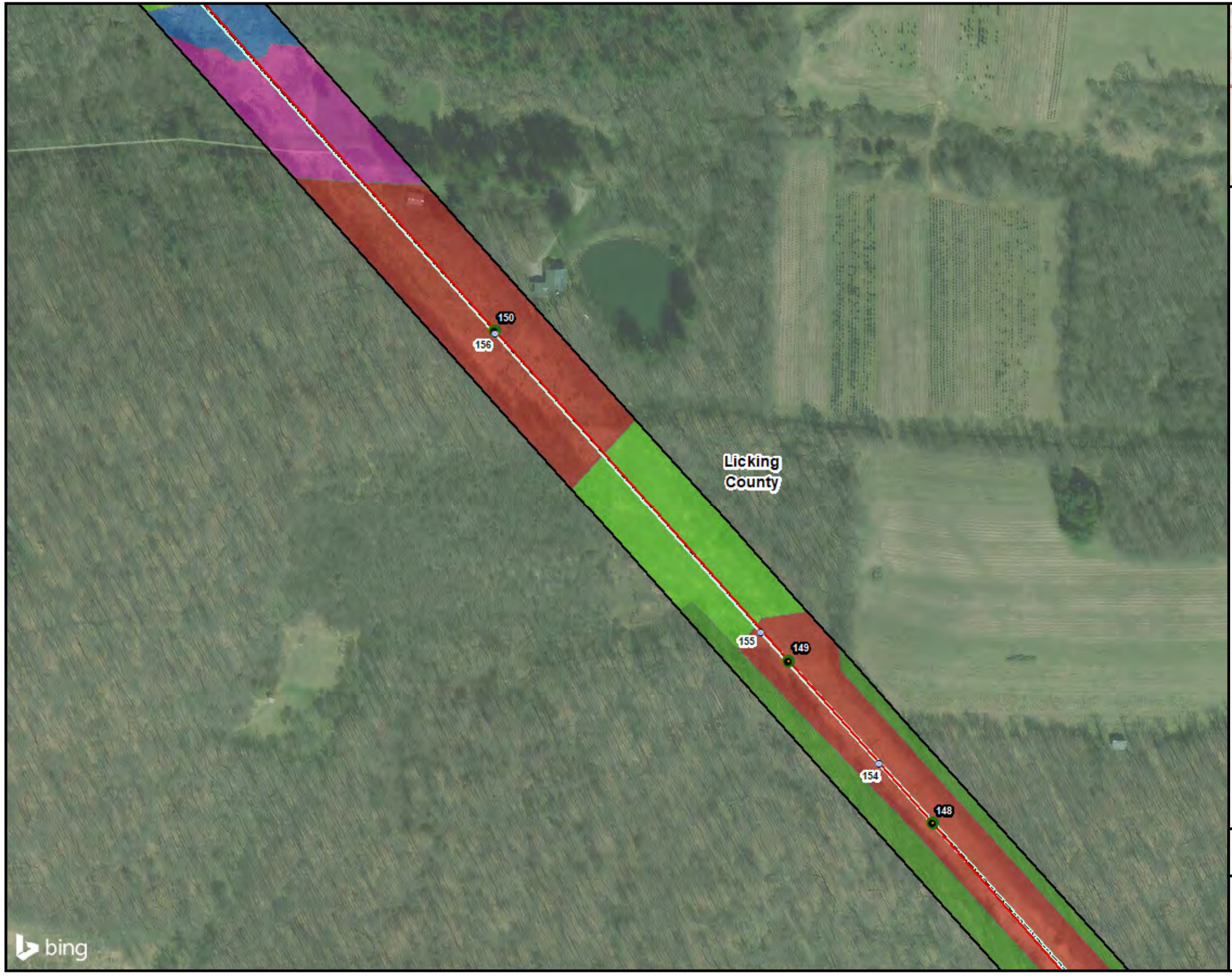

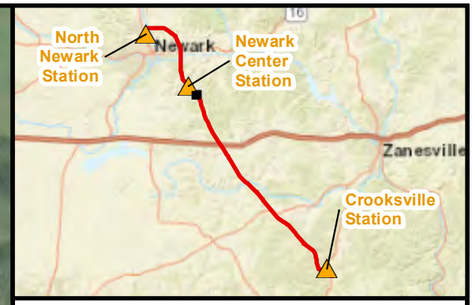

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BA
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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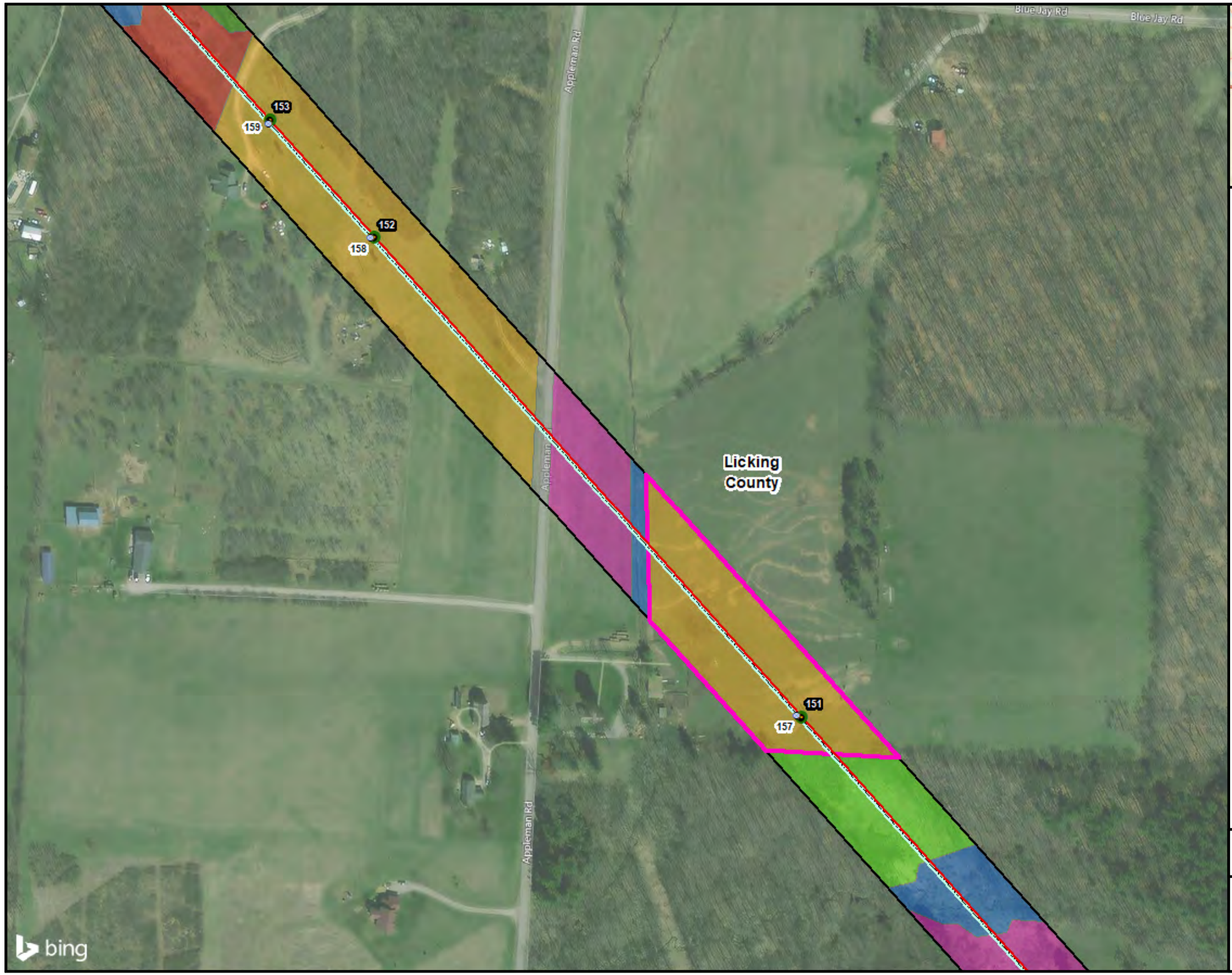

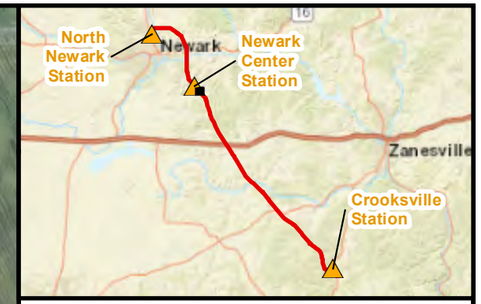

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BB
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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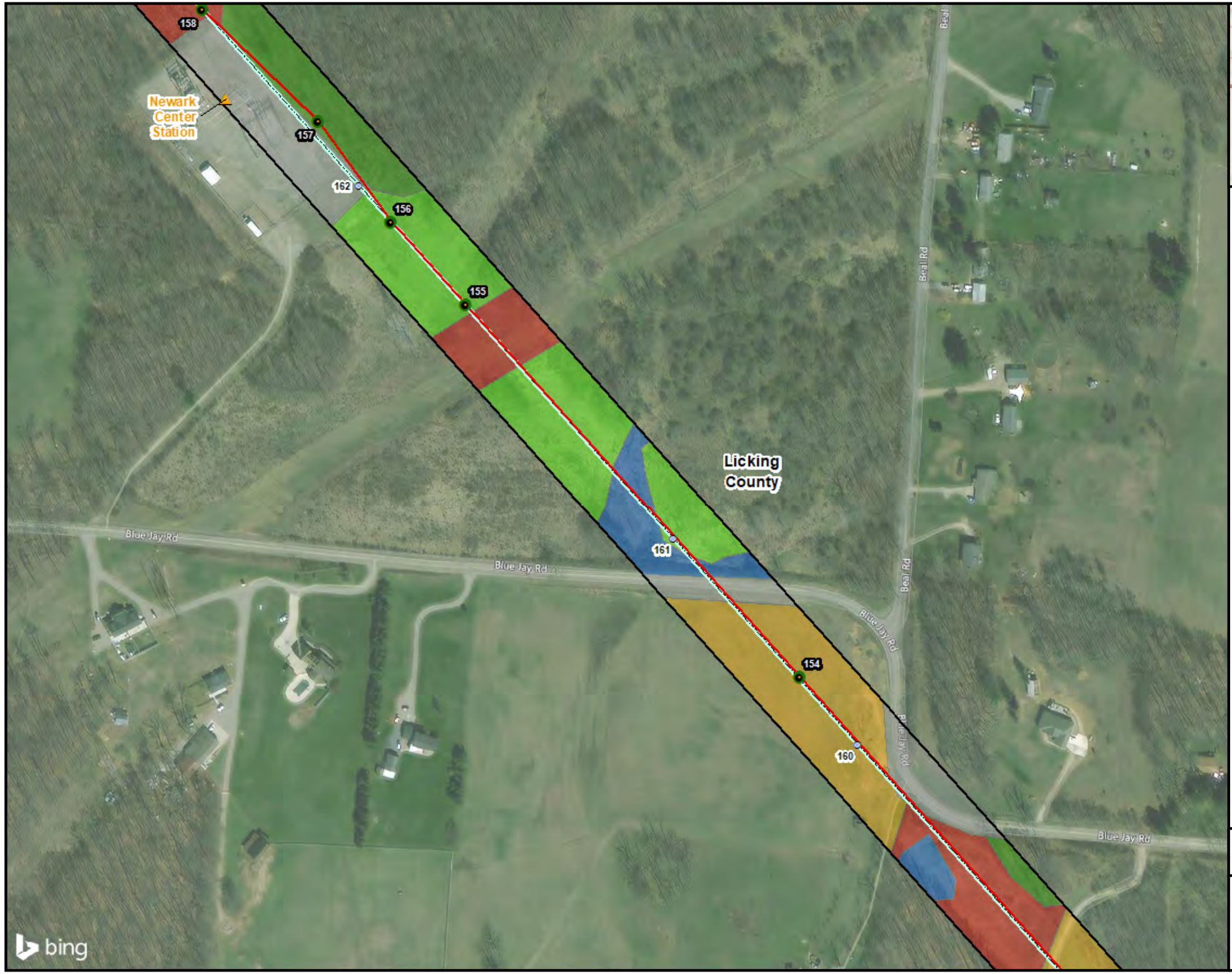

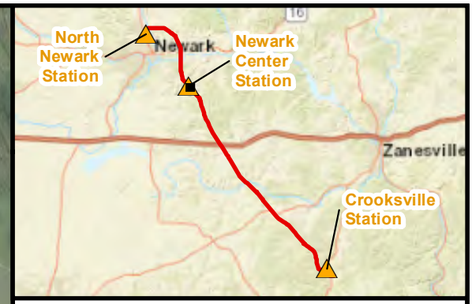

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Station
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BC
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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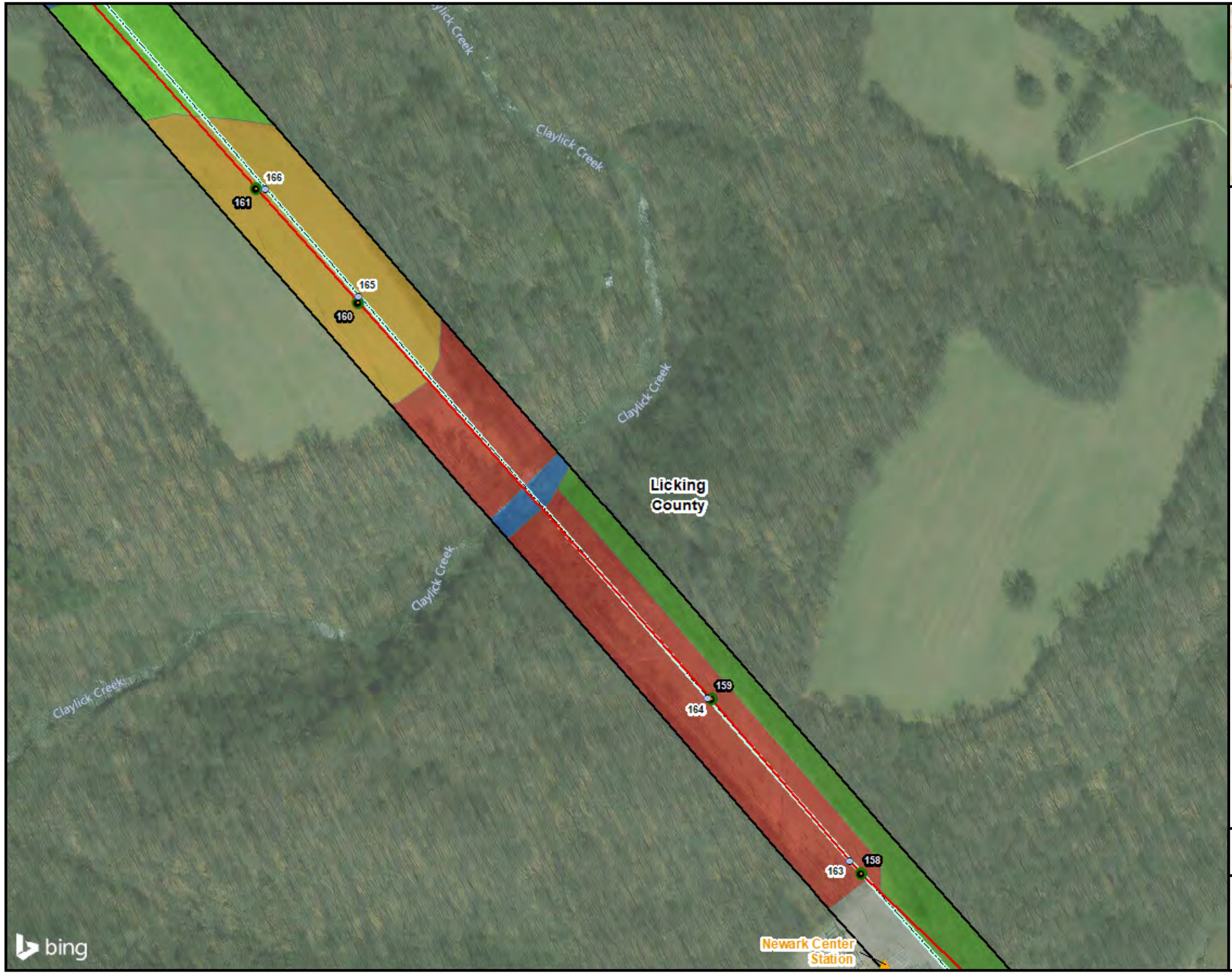

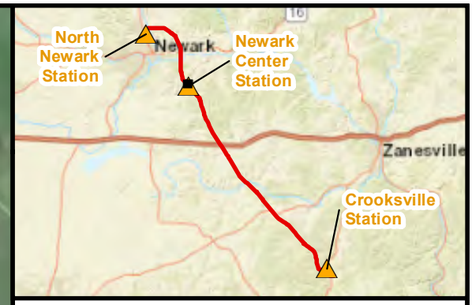

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Station
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BD
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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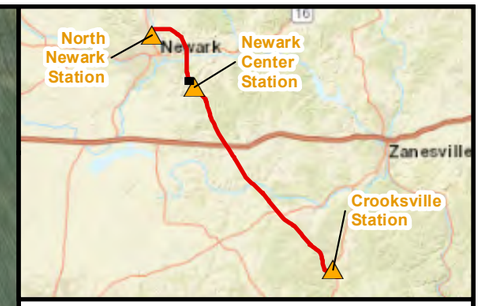

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Hay Field/Pasture
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BE
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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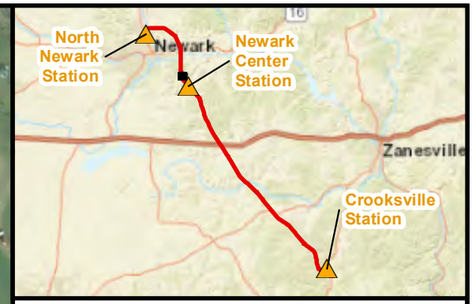

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BF
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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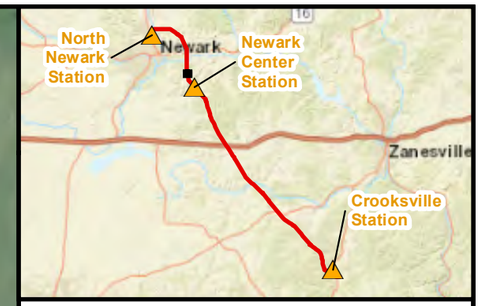

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BG
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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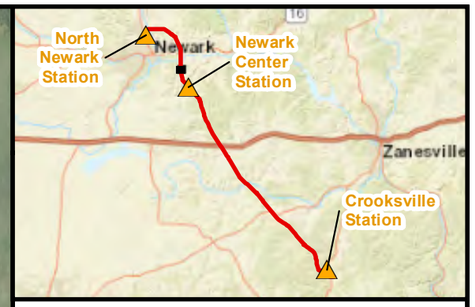

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BH
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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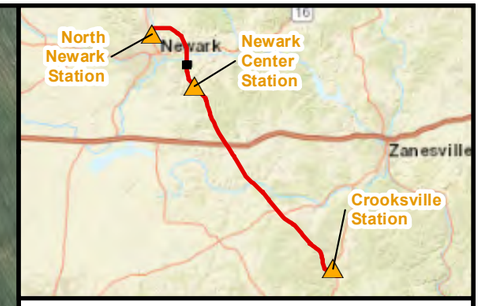

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BI
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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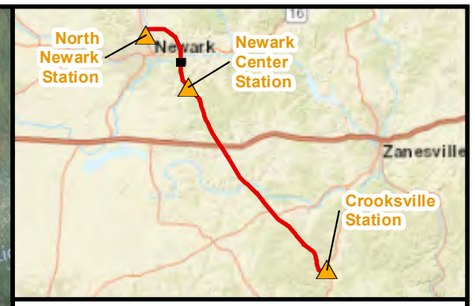

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BJ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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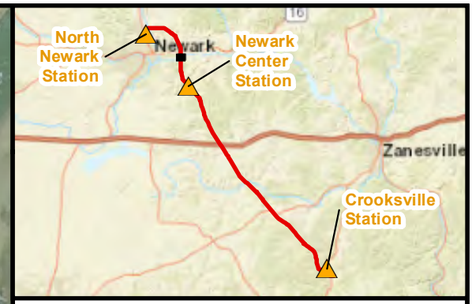

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BK
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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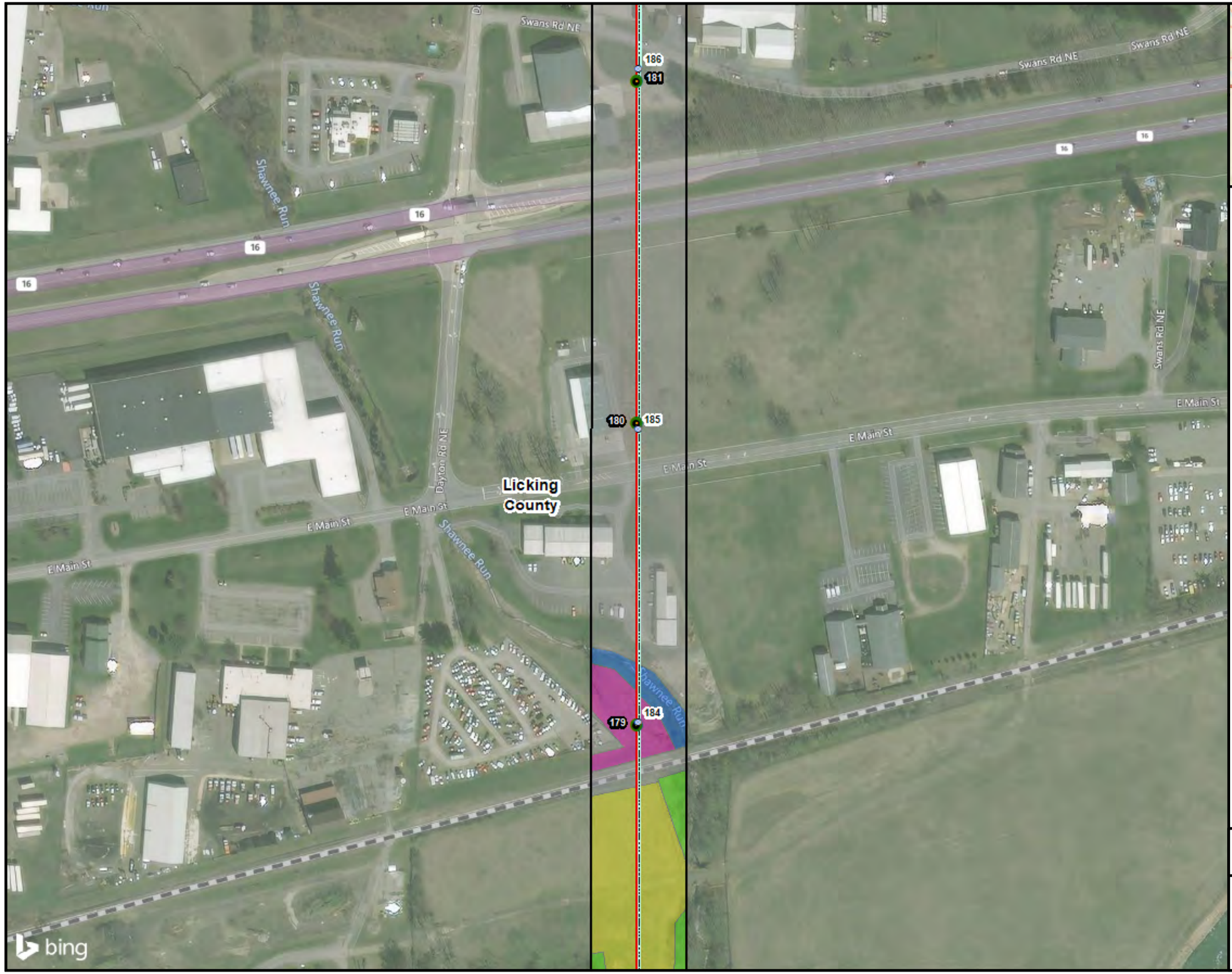

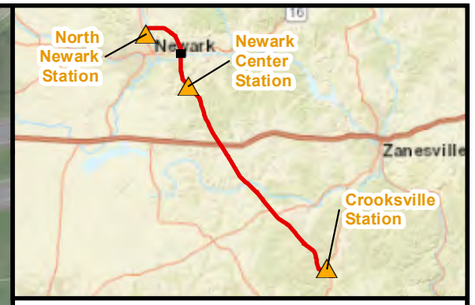

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Landscaped Area
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BL
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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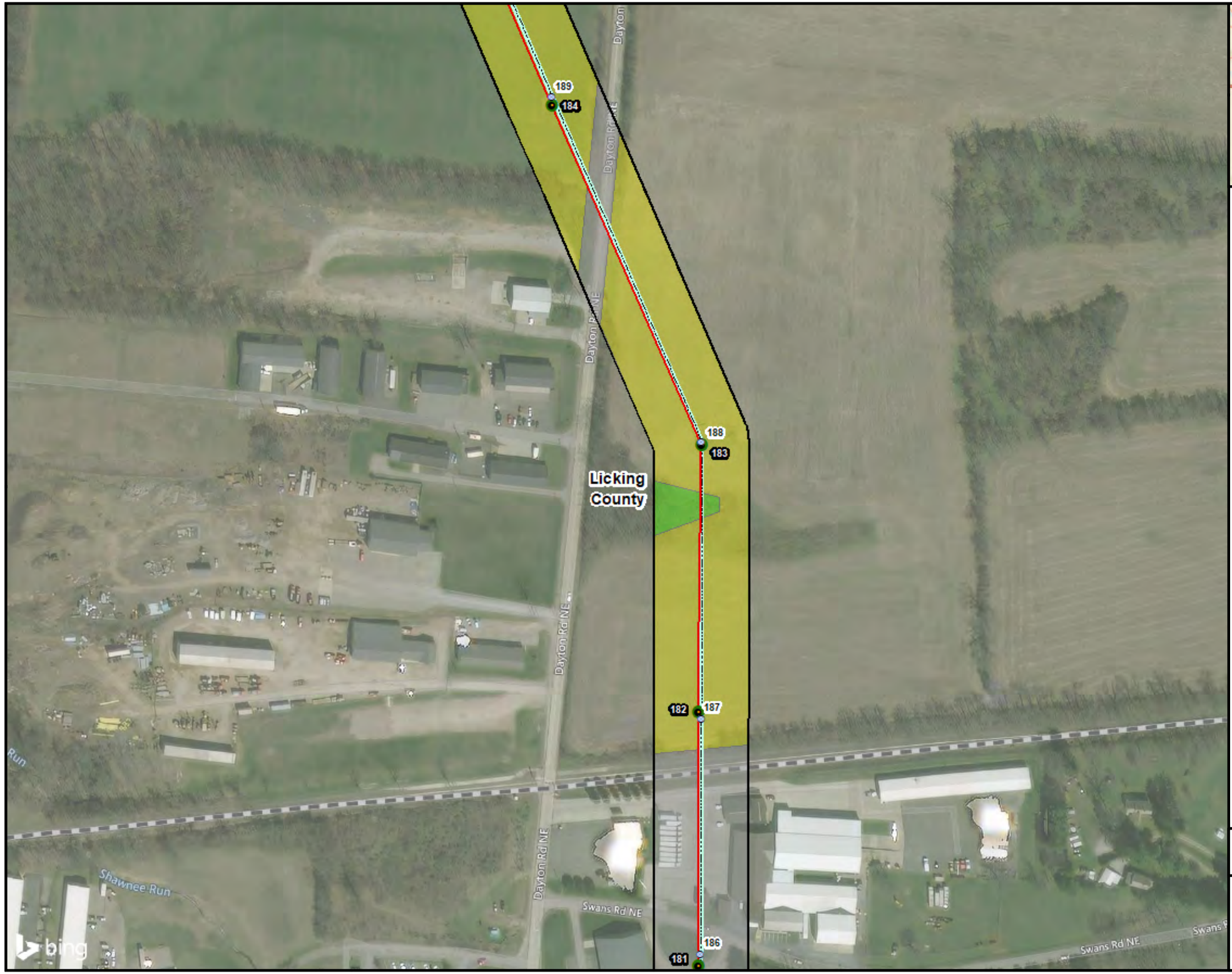
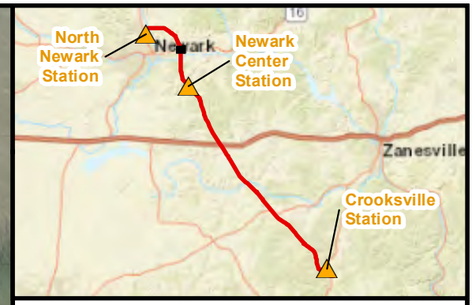




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Shrub/Scrub
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

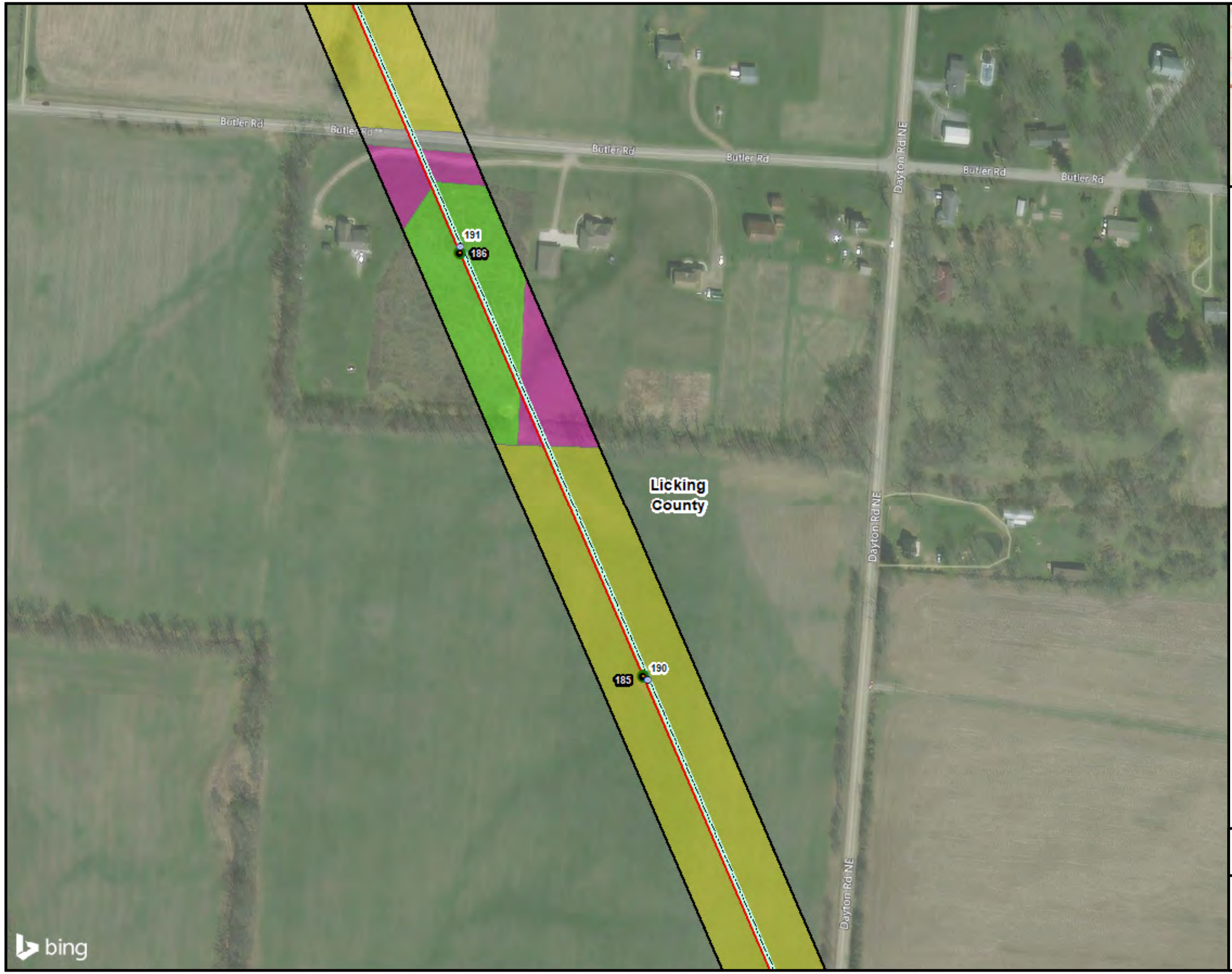
Crooksville-North Newark 138kV Transmission Line Rebuild Project

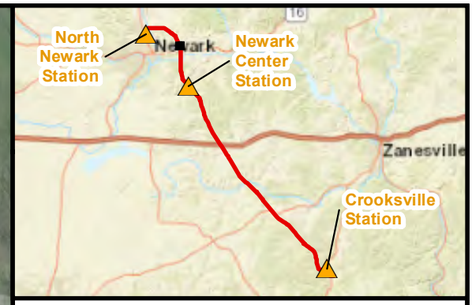
FIGURE 5BM
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville\AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Landscaped Area
- Shrub/Scrub
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BN
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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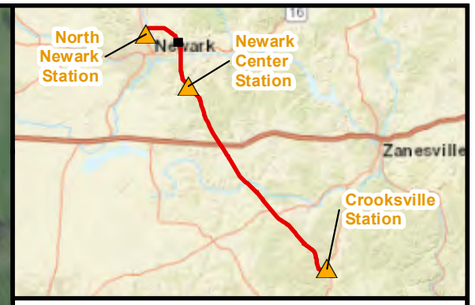

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BO
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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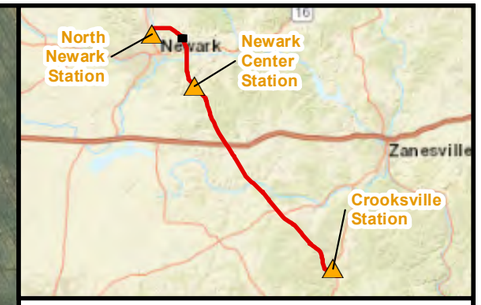


LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

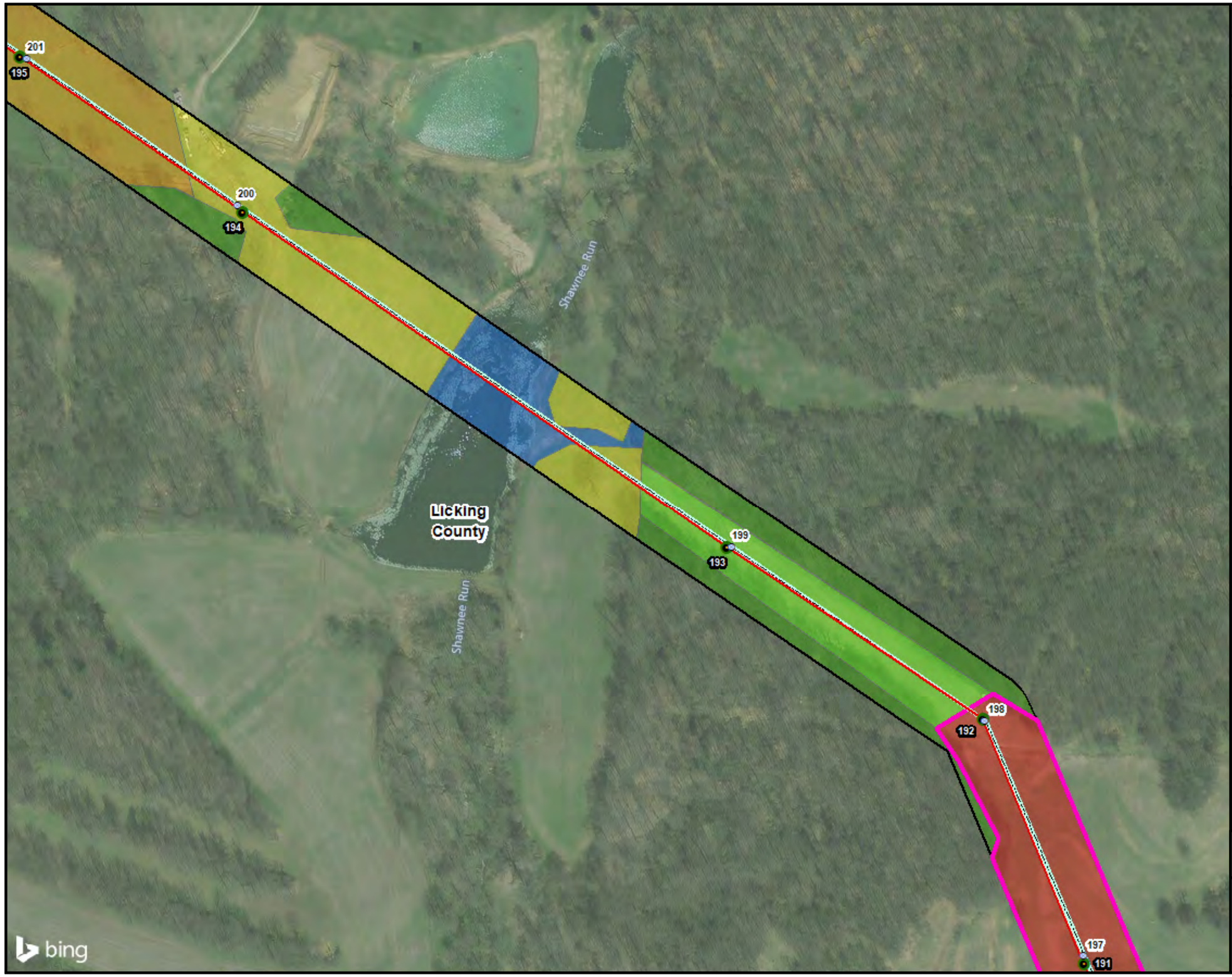
Crooksville-North Newark 138kV Transmission Line Rebuild Project

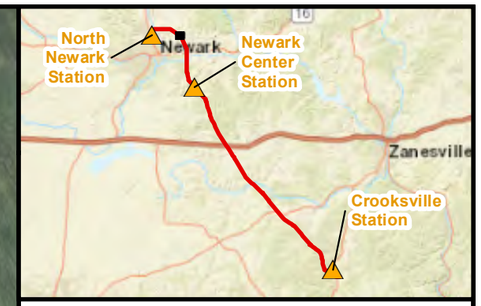
FIGURE 5BP
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Project\ENV\60616110_AEP_CrooksabAEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Potential Northern Harrier Habitat
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BQ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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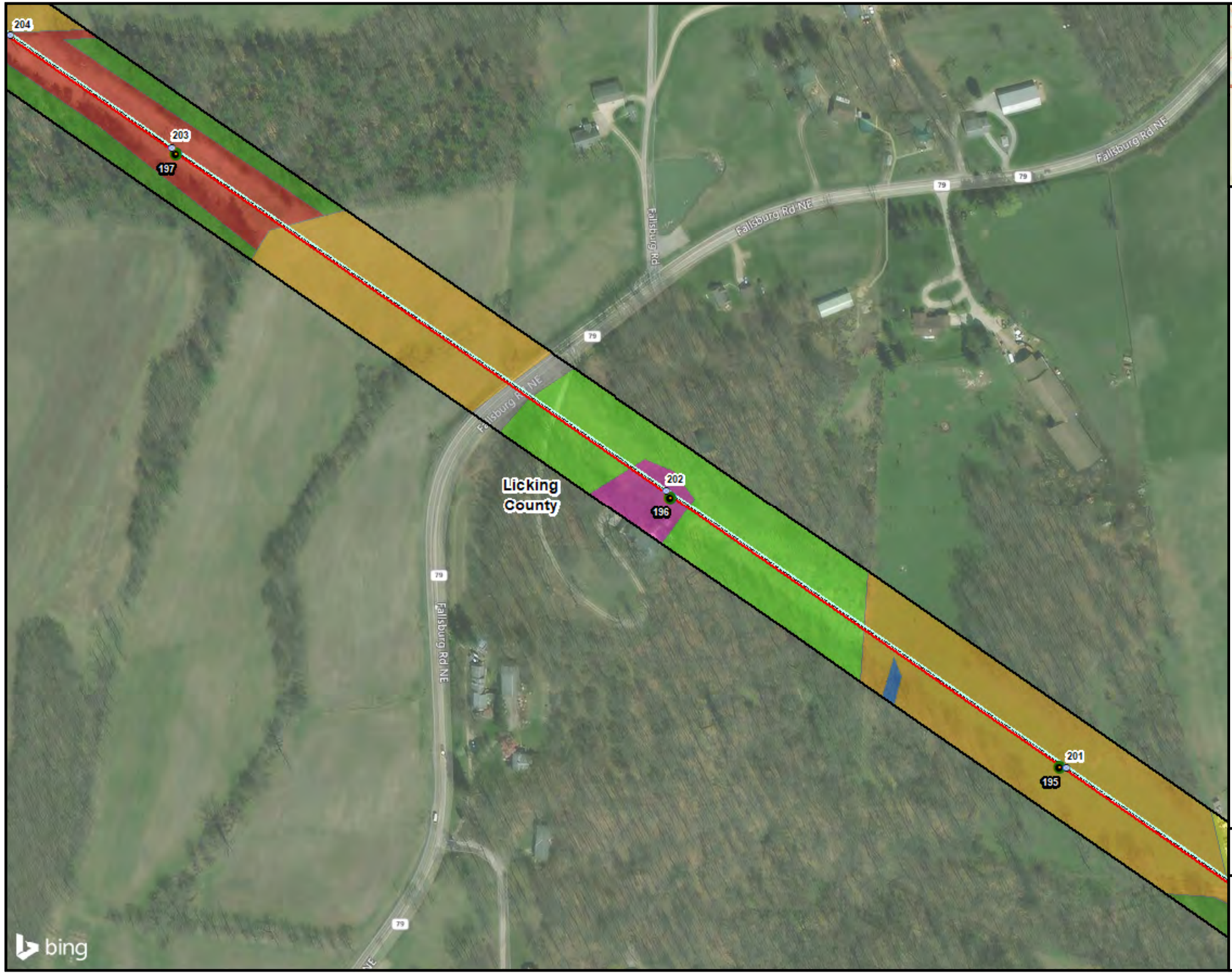
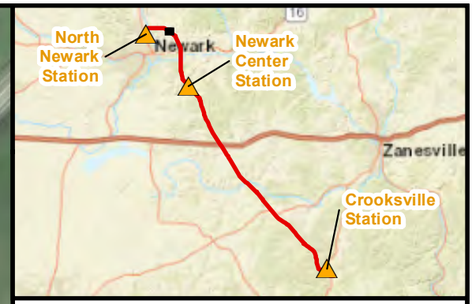




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

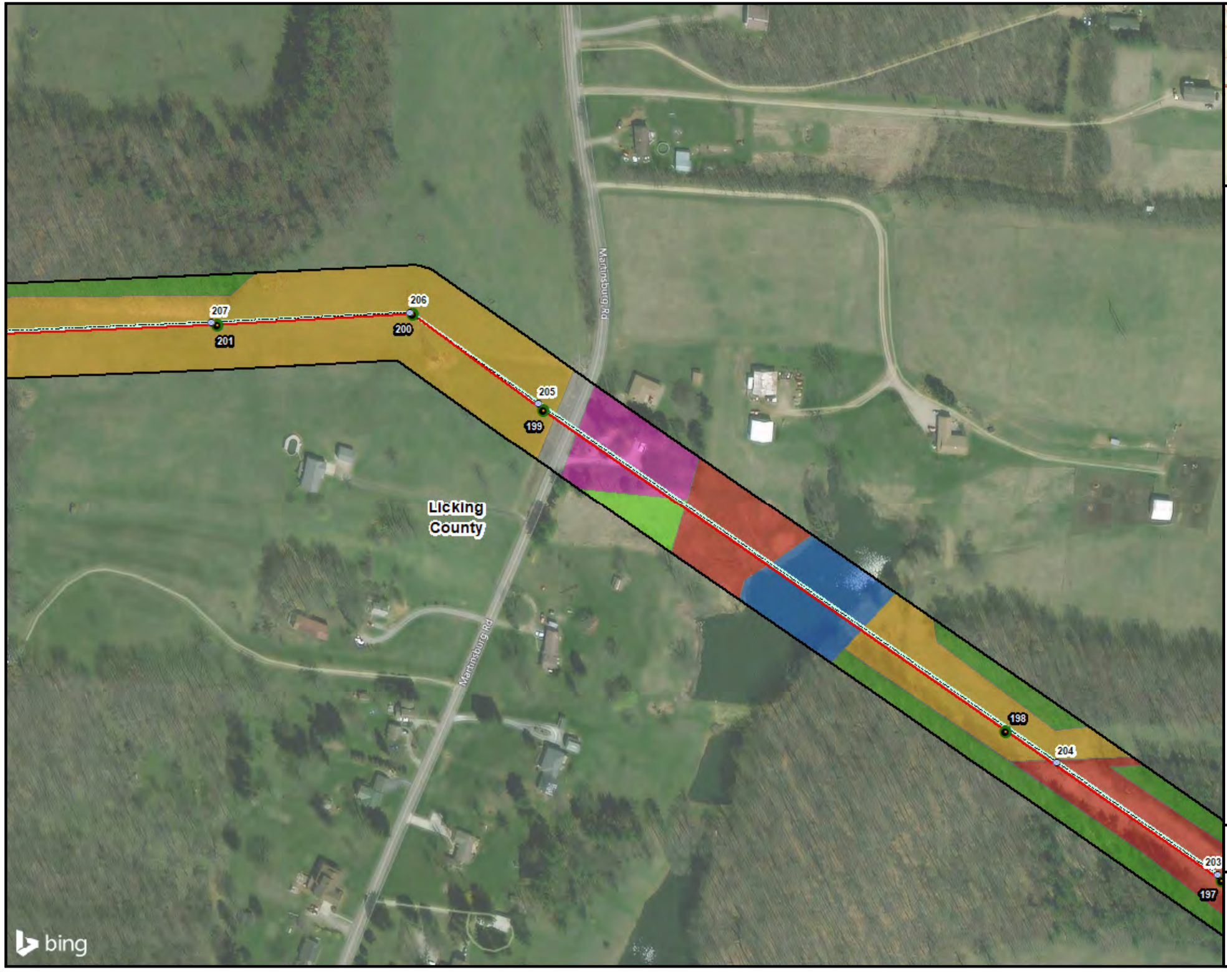
Crooksville-North Newark 138kV Transmission Line Rebuild Project

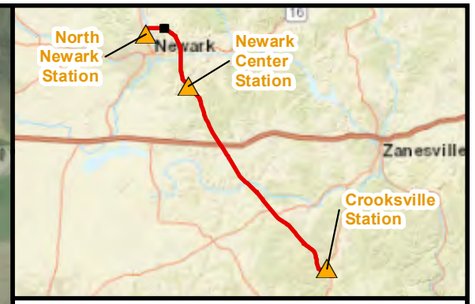
FIGURE 5BR
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark\AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BS
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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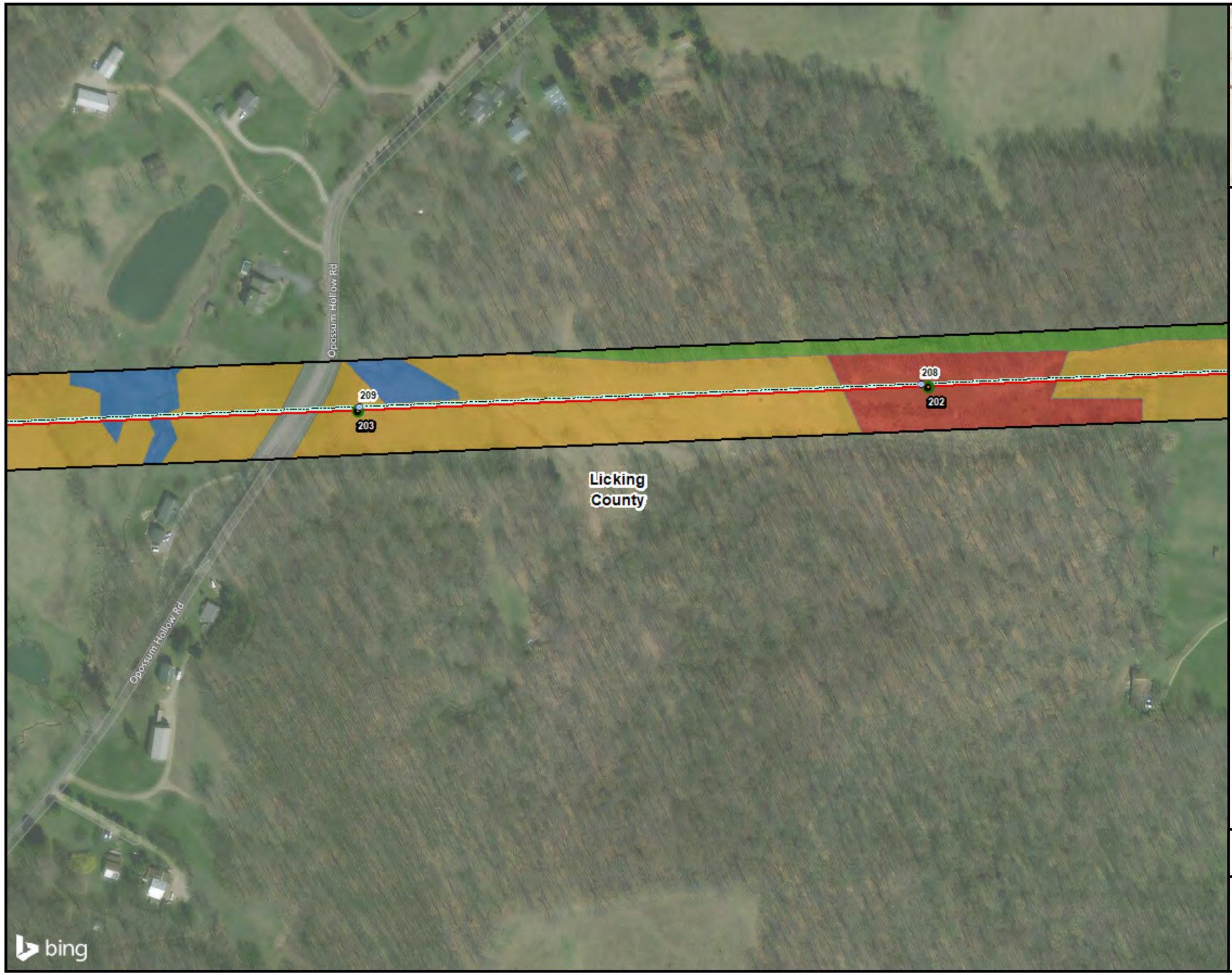
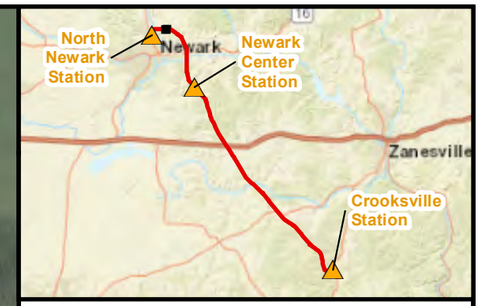




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

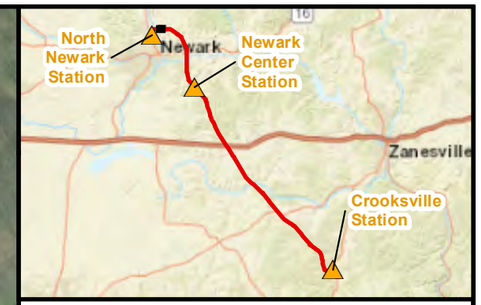
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BT
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksIab\AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

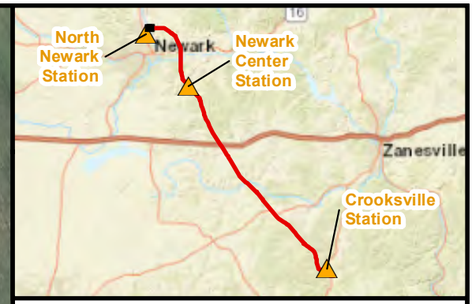
Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BU
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark_WDR\AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Shrub/Scrub
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

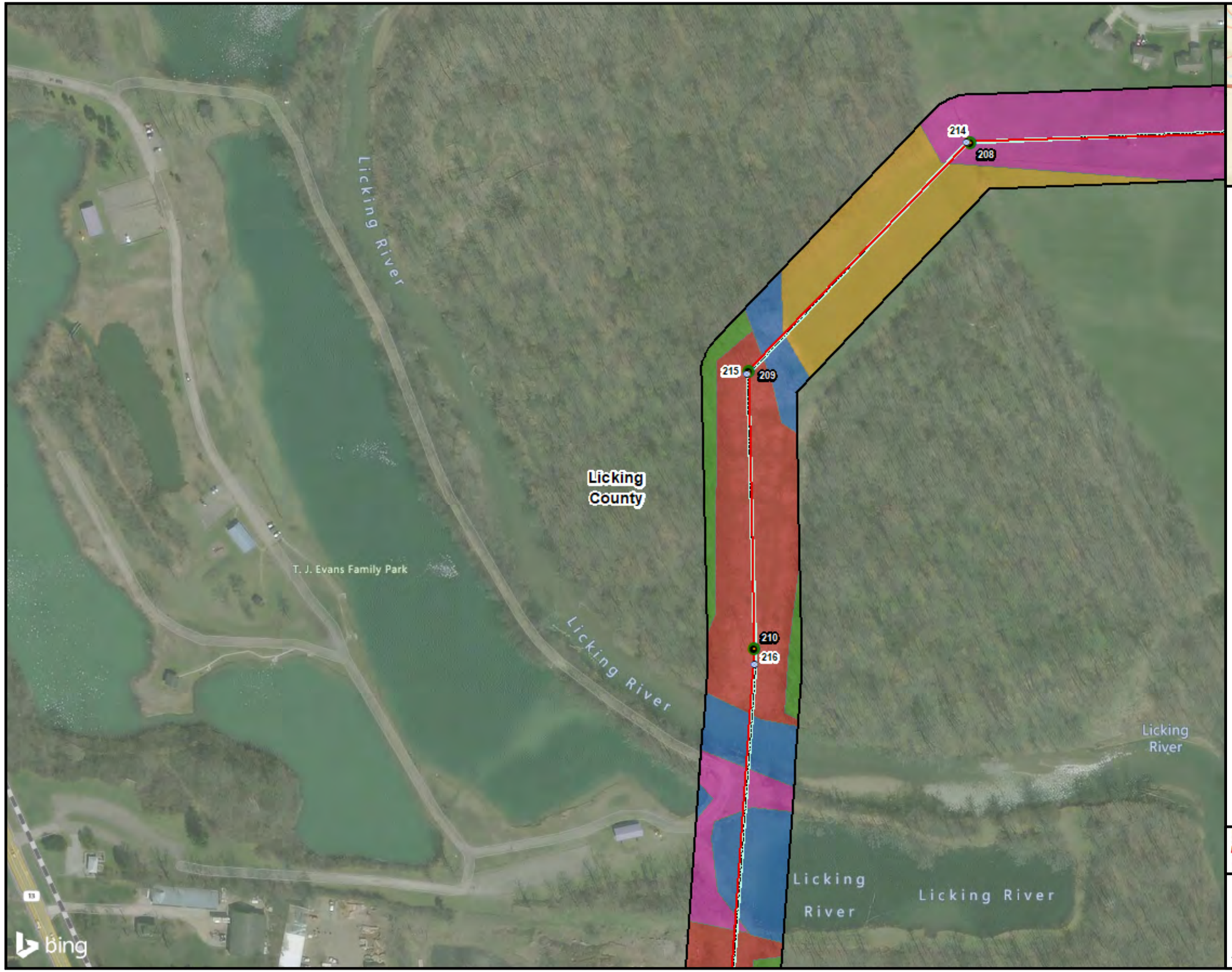
Crooksville-North Newark 138kV Transmission Line Rebuild Project

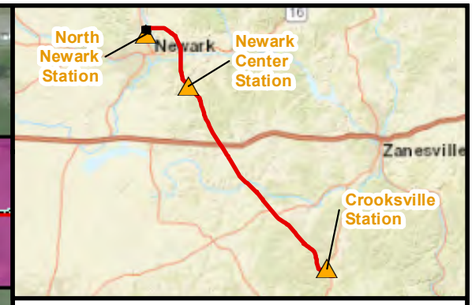
FIGURE 5BV
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksabAEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

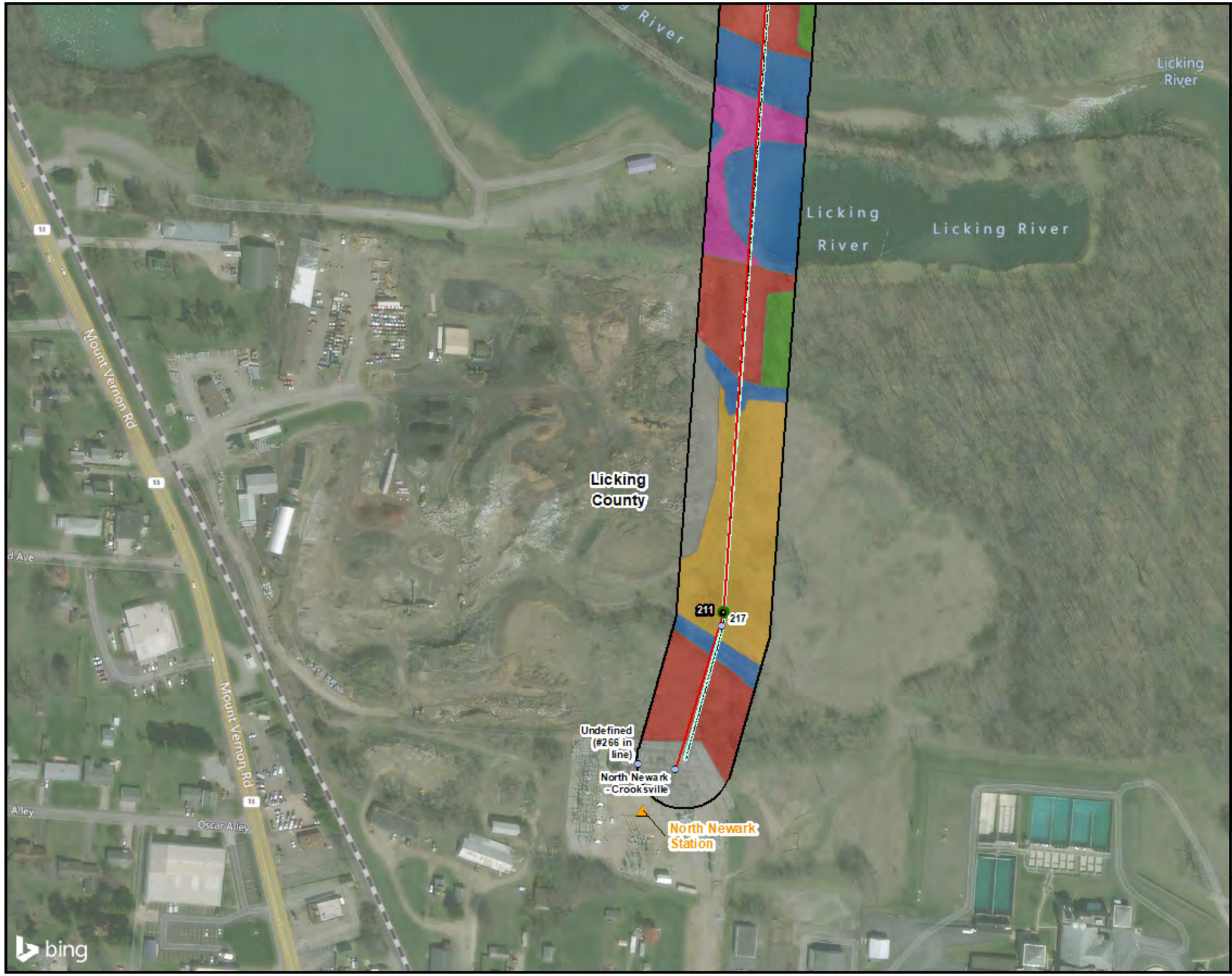
Crooksville-North Newark 138kV Transmission Line Rebuild Project

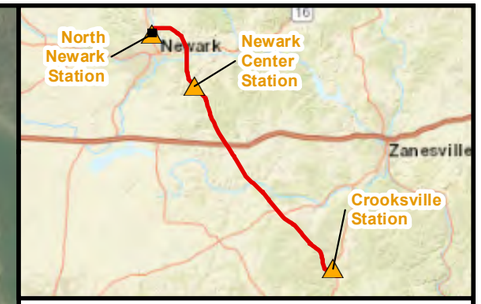
FIGURE 5BW
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_Crooksville_NorthNewark\AEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Station
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Survey Corridor
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap,

AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project

FIGURE 5BX
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

L:\DCS\GIS\ArcMap_GeoDB_Project\ENV\60616110_AEP_CrooksabVAEP_Crooksville_NorthNewark_WDR_Figure5.mxd Date: 6/1/2021

APPENDIX A

PROJECT WETLAND TABLE

CROOKSVILLE-NORTH NEWARK 138 KV TRANSMISSION LINE REBUILD PROJECT
WETLAND TABLE

6/7/2021

	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	
2		Latitude	Longitude				Score	Category					Temporary Matting Area (acre)[2]	Permanent Impact Area (acre)
3	Wetland 001	39.768556	-82.097593	No	PEM	0.21	26	1	TBD	NA	TBD	TBD	TBD	TBD
4	Wetland 002	39.766931	-82.096933	No	PEM	0.49	21	1	TBD	NA	TBD	TBD	TBD	TBD
5	Wetland 003	39.766817	-82.096362	No	PEM	0.66	22	1	TBD	NA	TBD	TBD	TBD	TBD
6	Wetland 004	39.765693	-82.096178	No	PEM	0.15	18	1	TBD	NA	TBD	TBD	TBD	TBD
7	Wetland 005	39.765432	-82.095705	No	PEM	0.02	14	1	TBD	NA	TBD	TBD	TBD	TBD
8	Wetland 006	39.759622	-82.089918	No	PSS	0.14	23	1	TBD	NA	TBD	TBD	TBD	TBD
9	Wetland 007	39.759714	-82.090718	No	PFO	0.45	26	1	TBD	NA	TBD	TBD	TBD	TBD
10	Wetland 008	39.760314	-82.093700	No	PEM	0.07	28	1	TBD	NA	TBD	TBD	TBD	TBD
11	Wetland 009a	39.760790	-82.094939	No	PEM	0.08	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
12	Wetland 009b	39.760641	-82.094478	No	PSS	0.50	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
13	Wetland 009c	39.760583	-82.094438	No	PFO	0.80	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
14	Wetland 010	39.762703	-82.098657	No	PEM	0.27	28	1	TBD	NA	TBD	TBD	TBD	TBD
15	Wetland 011	39.764540	-82.100993	No	PEM	0.01	23	1	TBD	NA	TBD	TBD	TBD	TBD
16	Wetland 012	39.786080	-82.117803	No	PSS	0.18	21	1	TBD	NA	TBD	TBD	TBD	TBD
17	Wetland 013	39.789188	-82.119041	No	PSS	0.58	28	1	TBD	NA	TBD	TBD	TBD	TBD
18	Wetland 014	39.791343	-82.119812	No	PSS	0.88	35	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
19	Wetland 015	39.799388	-82.131173	No	PEM	0.29	25	1	TBD	NA	TBD	TBD	TBD	TBD
20	Wetland 016	39.799928	-82.132336	Yes	PEM	0.04	19	1	TBD	NA	TBD	TBD	TBD	TBD
21	Wetland 017	39.804162	-82.138417	No	PEM	1.10	21	1	TBD	NA	TBD	TBD	TBD	TBD
22	Wetland 018	39.812687	-82.147777	No	PEM	0.08	26	1	TBD	NA	TBD	TBD	TBD	TBD
23	Wetland 019	39.818569	-82.153997	No	PEM	0.01	31	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
24	Wetland 020	39.818880	-82.154938	No	PEM	0.03	35	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
25	Wetland 021	39.820583	-82.156762	No	PSS	0.04	42	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
26	Wetland 022	39.821508	-82.157825	No	PEM	0.17	41	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
27	Wetland 023	39.823790	-82.160432	Yes	PEM	0.02	38	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
28	Wetland 024	39.828624	-82.166059	No	PEM	0.04	47	2	TBD	NA	TBD	TBD	TBD	TBD
29	Wetland 025	39.829632	-82.167719	No	PEM	0.00	40	Modified 2	TBD	NA	TBD	TBD	TBD	TBD

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

CROOKSVILLE-NORTH NEWARK 138 KV TRANSMISSION LINE REBUILD PROJECT
WETLAND TABLE

6/7/2021

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		Location					ORAM						Proposed Impacts	
2	Wetland ID	Latitude	Longitude	Isolated?	Habitat Type	Delineated Area (acre)	Score	Category	Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Temporary Matting Area (acre)[2]	Permanent Impact Area (acre)
30	Wetland 026	39.830165	-82.168610	No	PEM	0.02	43	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
31	Wetland 027a	39.833980	-82.175813	No	PEM	0.07	32	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
32	Wetland 027b	39.834107	-82.176163	No	PFO	0.18	32	Modified 2	TBD	51	TBD	TBD	TBD	TBD
33	Wetland 028	39.834639	-82.177116	No	PFO	0.11	40	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
34	Wetland 029	39.835056	-82.177610	No	PSS	0.44	59	2	TBD	NA	TBD	TBD	TBD	TBD
35	Wetland 030	39.835154	-82.178274	No	PFO	0.02	44	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
36	Wetland 031	39.835714	-82.178249	No	PFO	0.01	53	2	TBD	NA	TBD	TBD	TBD	TBD
37	Wetland 032a	39.836987	-82.181028	No	PEM	0.05	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
38	Wetland 032b	39.837129	-82.180917	No	PSS	0.02	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
39	Wetland 033	39.837413	-82.181772	No	PEM	0.14	37	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
40	Wetland 034a	39.838269	-82.183577	No	PEM	0.19	43	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
41	Wetland 034b	39.838376	-82.183469	No	PSS	0.01	43	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
42	Wetland 035	39.839892	-82.185624	No	PEM	0.11	29	1	TBD	NA	TBD	TBD	TBD	TBD
43	Wetland 036	39.841633	-82.187731	Yes	PEM	0.01	26	1	TBD	NA	TBD	TBD	TBD	TBD
44	Wetland 037	39.843084	-82.189171	No	PSS	0.07	31	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
45	Wetland 038	39.843438	-82.189250	No	PSS	0.02	31	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
46	Wetland 039	39.843763	-82.189788	Yes	PEM	0.01	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
47	Wetland 040	39.843977	-82.190076	No	PSS	0.02	37	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
48	Wetland 041	39.848031	-82.194416	No	PEM	0.06	22	1	TBD	NA	TBD	TBD	TBD	TBD
49	Wetland 042	39.850523	-82.197200	No	PEM	0.05	31	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
50	Wetland 043a	39.852592	-82.199141	No	PEM	0.05	0	1	TBD	NA	TBD	TBD	TBD	TBD
51	Wetland 043b	39.853038	-82.199503	No	PSS	0.15	0	1	TBD	NA	TBD	TBD	TBD	TBD
52	Wetland 044	39.853417	-82.200193	No	PEM	0.11	22	1	TBD	NA	TBD	TBD	TBD	TBD
53	Wetland 045	39.854619	-82.201458	No	PEM	0.46	21	1	TBD	NA	TBD	TBD	TBD	TBD
54	Wetland 046	39.857747	-82.205039	No	PEM	0.18	24	1	TBD	NA	TBD	TBD	TBD	TBD
55	Wetland 047	39.859043	-82.206321	No	PEM	0.05	43	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
56	Wetland 048a	39.862023	-82.209274	Yes	PEM	0.07	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD

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CROOKSVILLE-NORTH NEWARK 138 KV TRANSMISSION LINE REBUILD PROJECT
WETLAND TABLE

6/7/2021

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1		Location					ORAM						Proposed Impacts	
2	Wetland ID	Latitude	Longitude	Isolated?	Habitat Type	Delineated Area (acre)	Score	Category	Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Temporary Matting Area (acre)[2]	Permanent Impact Area (acre)
57	Wetland 048b	39.862136	-82.209232	Yes	PFO	0.03	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
58	Wetland 049	39.863698	-82.211098	No	PEM	0.01	36	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
59	Wetland 050	39.875809	-82.224362	No	PEM	0.06	37	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
60	Wetland 051	39.876223	-82.224112	No	PEM	0.00	44	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
61	Wetland 052	39.877029	-82.225723	Yes	PEM	0.07	25	1	TBD	NA	TBD	TBD	TBD	TBD
62	Wetland 053	39.877652	-82.226983	Yes	PEM	0.08	27	1	TBD	NA	TBD	TBD	TBD	TBD
63	Wetland 054	39.877939	-82.227502	Yes	PEM	0.04	29	1	TBD	NA	TBD	TBD	TBD	TBD
64	Wetland 055	39.878263	-82.227653	No	PEM	0.05	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
65	Wetland 056a	39.878796	-82.228548	No	PEM	0.07	42	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
66	Wetland 056b	39.878897	-82.228802	No	PFO	0.10	42	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
67	Wetland 057a	39.883077	-82.234408	Yes	PEM	0.06	49	2	TBD	NA	TBD	TBD	TBD	TBD
68	Wetland 057b	39.883002	-82.234501	Yes	PFO	0.04	49	2	TBD	NA	TBD	TBD	TBD	TBD
69	Wetland 058	39.885247	-82.237325	Yes	PEM	0.03	38	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
70	Wetland 059a	39.886179	-82.238664	No	PEM	0.04	44	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
71	Wetland 059b	39.886024	-82.238818	No	PFO	0.05	44	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
72	Wetland 060	39.887341	-82.240252	No	PFO	0.25	36	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
73	Wetland 061	39.890981	-82.245037	Yes	PEM	0.08	25	1	TBD	NA	TBD	TBD	TBD	TBD
74	Wetland 062	39.893752	-82.248976	No	PEM	0.06	29	1	TBD	NA	TBD	TBD	TBD	TBD
75	Wetland 063	39.894089	-82.249678	Yes	PEM	0.03	18	1	TBD	NA	TBD	TBD	TBD	TBD
76	Wetland 064	39.897090	-82.252996	No	PEM	0.12	27	1	TBD	NA	TBD	TBD	TBD	TBD
77	Wetland 065	39.900589	-82.255299	No	PEM	0.20	52	2	TBD	NA	TBD	TBD	TBD	TBD
78	Wetland 066	39.906086	-82.259643	No	PEM	0.54	44	2	TBD	NA	TBD	TBD	TBD	TBD
79	Wetland 067	39.913291	-82.265067	No	PEM	0.75	49	2	TBD	NA	TBD	TBD	TBD	TBD
80	Wetland 068	39.920083	-82.270123	No	PEM	0.04	21	1	TBD	NA	TBD	TBD	TBD	TBD
81	Wetland 069	39.924170	-82.273510	No	PEM	0.08	31	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
82	Wetland 070	39.926981	-82.275905	Yes	PEM	0.23	30	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
83	Wetland 071	39.929554	-82.277629	No	PSS	0.08	27	1	TBD	NA	TBD	TBD	TBD	TBD

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2	Wetland ID	Latitude	Longitude	Isolated?	Habitat Type	Delineated Area (acre)	Score	Category	Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Temporary Matting Area (acre)[2]	Permanent Impact Area (acre)
84	Wetland 072	39.930277	-82.278737	No	PEM	0.06	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
85	Wetland 073	39.937909	-82.284836	No	PEM	0.71	23	1	TBD	NA	TBD	TBD	TBD	TBD
86	Wetland 074a	39.939466	-82.285828	No	PFO	0.11	47	2	TBD	NA	TBD	TBD	TBD	TBD
87	Wetland 074b	39.938882	-82.285806	No	PEM	0.31	47	2	TBD	NA	TBD	TBD	TBD	TBD
88	Wetland 075	39.944533	-82.290329	Yes	PEM	0.09	37	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
89	Wetland 076	39.967760	-82.306906	No	PEM	0.08	33	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
90	Wetland 077	39.970770	-82.308763	No	PEM	0.08	21	1	TBD	NA	TBD	TBD	TBD	TBD
91	Wetland 078	39.974770	-82.311327	No	PEM	0.14	34	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
92	Wetland 079	39.975630	-82.311772	No	PEM	0.08	31	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
93	Wetland 080	39.977392	-82.312843	No	PEM	0.08	30	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
94	Wetland 081	39.980132	-82.314128	No	PEM	0.26	29	1	TBD	NA	TBD	TBD	TBD	TBD
95	Wetland 082	39.984460	-82.315834	No	PEM	0.05	17	1	TBD	NA	TBD	TBD	TBD	TBD
96	Wetland 083a	39.992397	-82.318274	No	PEM	0.12	47	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
97	Wetland 083b	39.992406	-82.318178	No	PSS	0.53	47	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
98	Wetland 084	39.992517	-82.318616	No	PEM	0.15	28	1	TBD	NA	TBD	TBD	TBD	TBD
99	Wetland 085	39.992967	-82.318198	No	PEM	0.06	36	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
100	Wetland 086	39.993875	-82.319036	No	PEM	0.24	27	1	TBD	NA	TBD	TBD	TBD	TBD
101	Wetland 087	39.994613	-82.319224	No	PEM	0.09	26	1	TBD	NA	TBD	TBD	TBD	TBD
102	Wetland 088a	40.000188	-82.321254	No	PEM	0.25	46	2	TBD	NA	TBD	TBD	TBD	TBD
103	Wetland 088b	40.000089	-82.321310	No	PSS	0.03	46	2	TBD	NA	TBD	TBD	TBD	TBD
104	Wetland 089	40.008652	-82.329910	No	PEM	0.21	42	2	TBD	NA	TBD	TBD	TBD	TBD
105	Wetland 090	40.013847	-82.336270	Yes	PEM	0.09	25	1	TBD	NA	TBD	TBD	TBD	TBD
106	Wetland 091	40.015260	-82.337979	Yes	PEM	0.02	24	1	TBD	NA	TBD	TBD	TBD	TBD
107	Wetland 092	40.015609	-82.337710	No	PEM	0.04	29	1	TBD	NA	TBD	TBD	TBD	TBD
108	Wetland 093	40.015858	-82.338492	No	PEM	0.08	30	1	TBD	NA	TBD	TBD	TBD	TBD
109	Wetland 094	40.031358	-82.353009	No	PEM	0.12	29	1	TBD	NA	TBD	TBD	TBD	TBD
110	Wetland 095	40.034452	-82.353604	No	PEM	0.67	30	1	TBD	NA	TBD	TBD	TBD	TBD

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111	Wetland 096	40.056417	-82.354012	Yes	PFO	0.09	32	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
112	Wetland 097	40.078006	-82.360454	No	PEM	0.09	35	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
113	Wetland 098	40.078963	-82.360514	No	PEM	0.10	26	1	TBD	NA	TBD	TBD	TBD	TBD
114	Wetland 099	40.079044	-82.361024	No	PEM	0.22	26	1	TBD	NA	TBD	TBD	TBD	TBD
115	Wetland 100	40.088190	-82.368025	No	PEM	0.16	35	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
116	Wetland 101	40.097103	-82.393627	Yes	PEM	0.12	19	1	TBD	NA	TBD	TBD	TBD	TBD
117	Wetland 102	40.097012	-82.395749	No	PEM	0.22	35	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
118	Wetland 103	40.096571	-82.403694	No	PEM	0.61	43	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
119	Wetland 104	40.096508	-82.404812	No	PEM	0.15	39	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
120	Wetland 105a	40.095423	-82.415010	Yes	PFO	0.06	41	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
121	Wetland 105b	40.095063	-82.414886	Yes	PEM	0.20	41	Modified 2	TBD	NA	TBD	TBD	TBD	TBD
122	Wetland 106a	40.092184	-82.415114	No	PEM	0.55	48	2	TBD	NA	TBD	TBD	TBD	TBD
123	Wetland 106b	40.091986	-82.414967	No	PUB	0.23	48	2	TBD	NA	TBD	TBD	TBD	TBD
124	Wetland 107	40.091074	-82.415358	No	PEM	0.07	22	1	TBD	NA	TBD	TBD	TBD	TBD
125	Wetland 108	40.089515	-82.415416	Yes	PEM	0.06	23	1	TBD	NA	TBD	TBD	TBD	TBD
126					**Total:**	**20.891**							**0.000**	**0.000**

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APPENDIX B

U.S. ARMY CORPS OF ENGINEERS WETLAND DATA FORMS

OEPA WETLAND ORAM FORMS

DELINEATED FEATURES PHOTOGRAPHS (WETLANDS)

Wetland 001

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: w-aeh-20200922-03

Investigator(s): AEH, WRL Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76849 Long.: -82.0976 Datum: NAD83

Soil Map Unit Name: No - Nolin 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:

Sample point w-aeh-20200922-03 point in to PEM wetland 001, on terrace on right descending bank of Moxahala Creek (Stream 001). Wetland fully delneated. Within 100-year floodplain = potentially problematic soils, within ROW of multiple powerlines and possibly dipped out streambed spoils pile = disturbed soils.

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 ◉ Depth (inches): 0

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:

One primary and two secondary hydrology indicators present. Primary source of hydrology is overbank flow from perennial Stream 001 (Moxahala Creek), which flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-03**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1. Acer negundo	10	☑	58.8%	FAC
2. Sambucus nigra	5	☑	29.4%	FAC
3. Populus deltoides	2	☐	11.8%	FAC
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%	
	17	= 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' r)				
1. Phalaris arundinacea	80	☑	72.1%	FACW
2. Cirsium arvense	15	☐	13.5%	FACU
3. Verbesina alternifolia	10	☐	9.0%	FAC
4. Desmodium canadense	3	☐	2.7%	FAC
5. Eutrochium purpureum	2	☐	1.8%	FAC
6. Amphicarpaea bracteata	1	☐	0.9%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	111	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	80	x 2 =	160	
FAC species	33	x 3 =	99	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	128	(A)	319	(B)

Prevalence Index = B/A = 2.492

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW and FAC.

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

Soil

Sampling Point: **w-aeh-20200922-03**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR	3/3	100						Silt Loam	
3-11	2.5Y	5/2	85	10YR	4/6	15	C	PL	Sandy Loam	prominent redox concentrations
11-16	10YR	4/2	80	10YR	4/6	20	C	PL	Sandy Clay Loam	distinct redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common prominent redox concentrations in pore linings in sandy soil.

Upland 001

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200922-03

Investigator(s): AEH, WRL Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope: 3.0 % / 71.6 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76485 Long.: -82.09751 Datum: NAD83

Soil Map Unit Name: No - Nolin 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:

Sample point Upland 001 (upl-aeh-20200922-03) point out to wetland 001, about 5' southeast of wetland boundary at higher elevation, in 100-year floodplain of Moxahala Creek (Stream 001). Within ROW of multiple powerlines=disturbed soils, within 100-year floodplain=problematic soils. Not a wetland point as hydrology criteria not met.

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 ◉ Depth (inches): 0

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 hydrology indicators present.

Upland 001

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

Sampling Point: **upl-aeh-20200922-03**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1. Rhus typhina	20	☑	62.5%	UPL
2. Prunus serotina	5	☐	15.6%	FACU
3. Rubus occidentalis	5	☐	15.6%	UPL
4. Platanus occidentalis	2	☐	6.3%	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%	
	32	= 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' r)				
1. Phalaris arundinacea	60	☑	70.6%	FACW
2. Verbesina alternifolia	10	☐	11.8%	FAC
3. Symphyotrichum pilosum	10	☐	11.8%	FAC
4. Solidago canadensis	5	☐	5.9%	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%	
	85	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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: 2 (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	0	x 1 =	0	
FACW species	62	x 2 =	124	
FAC species	20	x 3 =	60	
FACU species	10	x 4 =	40	
UPL species	25	x 5 =	125	
Column Totals:	117	(A)	349	(B)

Prevalence Index = B/A = 2.983

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.)

hydrophytic vegetation indicator present as prevalence test < 3.0, dominant species are FACW and UPL

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

Soil

Sampling Point: **upl-aeh-20200922-03**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR 4/2	80	10YR 3/1	20	D	M	Sandy Loam	
3-9	10YR 3/1	70	10YR 4/4	30	C	M	Sandy Loam	prominent redox concentrations
9-14	2.5Y 4/3	90	10YR 4/6	10	C	M	Sandy Clay	distinct redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common prominent redox concentrations in pore linings in sandy soil. May be relict indicators of perennial stream substrates in spoils pile.

Wetland 001

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-03**

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts | subtotal)

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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

0.21 acres

Metric 2. Upland buffers and surrounding land use.

5 | 6 (max 14 pts. | subtotal)

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)
- [x] 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

14.0 | 20.0 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8 | 28 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] 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)
- [x] 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)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

28 (subtotal this page) ORAM v. 5.0 Field Form Quantitative Rating

Wetland 001

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-03

	28

subtotal this page

0	28	**Metric 5. Special Wetlands.**
max 10 pts.	subtotal	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)

-3	25	**Metric 6. Plant communities, interspersion, microtopography.**
max 20pts.	subtotal	

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [0] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] 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.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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	**GRAND TOTAL(max 100 pts)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 001 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing North	

Wetland 001 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing East	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 001 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing South	

Wetland 001 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 001

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Soil Pit

Wetland 002

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-02

Investigator(s): AEH, WRL | Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave | Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.76666 | Long.: -82.09676 | Datum: NAD83

Soil Map Unit Name: Ds - Dumps, mine | 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:

Sample point w-aeh-20200922-02 point in to PEM wetland 002, in depression in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to west into woodlot towards creek. Mapped soil unit of Dumps=disturbed soils, within 100-year floodplain = potentially problematic soils. Mapped wetland extent includes about 10% upland area in complex

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 ◉	Depth (inches): 0	
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:

multiple secondary hydrology indicators present. Saturation visible on aerial imagery (OGRIP-OSIP 2013 imagery). Primary sources of hydrology are overbank flow from Moxahala Creek and precipitation concentration in geomorphic position. Wetland abuts perennial stream Moxahala Creek that flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-02**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1. Salix nigra	5	☑	71.4%	OBL
2. Fraxinus pennsylvanica	2	☑	28.6%	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%	
	7	= 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' r)				
1. Phalaris arundinacea	60	☑	60.0%	FACW
2. Symphyotrichum ericoides	20	☑	20.0%	FACU
3. Apocynum cannabinum	10	☐	10.0%	FACU
4. Panicum dichotomiflorum	10	☐	10.0%	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%	
	100	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	x 1 =	5	
FACW species	72	x 2 =	144	
FAC species	0	x 3 =	0	
FACU species	30	x 4 =	120	
UPL species	0	x 5 =	0	
Column Totals:	107	(A)	269	(B)

Prevalence Index = B/A = 2.514

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-aeh-20200922-02**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-6	10YR	4/2	90	10YR	4/6	10	C	PL	Silt Loam	distinct redox concentrations
6-12	2.5Y	5/2	80	10YR	4/4	20	C	PL	Sandy Clay Loam	prominent redox concentrations
12-18	2.5Y	5/1	70	10YR	4/4	30	C	PL	Sandy Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common prominent redox concentrations in pore linings.

Upland 002

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200921-02

Investigator(s): AEH, WRL Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76735 Long.: -82.09709 Datum: NAD83

Soil Map Unit Name: No - Nolin 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:

Sample point Upland 002 (upl-aeh-20200922-02) point out to wetlands 002 and 003, about 5' north of wetland 002 boundary at higher elevation, in 100-year floodplain of Moxahala Creek (Stream 001). Within ROW of multiple powerlines=disturbed soils, within 100-year floodplain = possibly problematic soils. Not a wetland point, no wetland criteria met

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 ◉ Depth (inches): 0

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:

One secondary hydrology indicator present.

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

Upland 002

Sampling Point: **upl-aeh-20200921-02**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
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' r)				
1. Phalaris arundinacea	25	☑	21.7%	FACW
2. Melilotus officinalis	20	☑	17.4%	FACU
3. Setaria pumila	15	☑	13.0%	FAC
4. Cirsium arvense	15	☑	13.0%	FACU
5. Solidago canadensis	15	☑	13.0%	FACU
6. Daucus carota	10	☐	8.7%	UPL
7. Symphyotrichum ericoides	10	☐	8.7%	FACU
8. Pycnanthemum verticillatum	5	☐	4.3%	FAC
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	115	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0	
FACW species	25	**x 2 =**	50	
FAC species	20	**x 3 =**	60	
FACU species	60	**x 4 =**	240	
UPL species	10	**x 5 =**	50	
Column Totals:	115	**(A)**	400	**(B)**

Prevalence Index = B/A = 3.478

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.)

No hydrophytic vegetation indicators present as dominance test is not > 50%, dominant species are FACW, FAC and FACU, and prevalence index > 3.0

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

Soil

Sampling Point: **upl-aeh-20200921-02**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-2	10YR 3/1	100					Silt Loam	gravelly

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Shovel refusal at 2" with mixed gravel fill. No hydric soil indicators present in disturbed soils. No indicators for hydrophytic vegetation or wetland hydrology present either.

Wetland 002

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-02**

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts | subtotal)

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)
- [x] 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)

0.57 acres

Metric 2. Upland buffers and surrounding land use.

5 | 7 (max 14 pts. | subtotal)

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)
- [x] 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

8.0 | 15.0 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8 | 23 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] 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)
- [x] 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)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

23 (subtotal this page) ORAM v. 5.0 Field Form Quantitative Rating

Wetland 002

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-02

	23
	subtotal this page
0	23
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	21
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, 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)
- [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)
- [x] 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.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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	**GRAND TOTAL(max 100 pts)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 002

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Facing North

Wetland 002

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Facing East

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 002	
Date: September 22, 2020 **Description:** PEM wetland Category 1 Facing South	

Wetland 002	
Date: September 22, 2020 **Description:** PEM wetland Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 002

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Soil Pit

Wetland 003

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: w-aeh-20200922-04

Investigator(s): AEH, WRL Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76684 Long.: -82.09656 Datum: NAD83

Soil Map Unit Name: Ds - Dumps, mine 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:

Sample point w-aeh-20200922-04 point in to PEM wetland 003, in depression in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to east into woodlot. Mapped soil unit of Dumps=disturbed soils, within 100-year floodplain = potentially problematic soils.

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 ◉	Depth (inches): 0	
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:

One primary and one secondary hydrology indicators present. Primary sources of hydrology are overbank flow from perennial stream 001 (Moxahala Creek) and precipitation and concentration of surface runoff in geomorphic position. Wetland abuts perennial stream Moxahala Creek that flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-04**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1. Salix nigra	1	☐	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%	
	1	= 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' r)				
1. Phalaris arundinacea	95	☑	89.6%	FACW
2. Apocynum cannabinum	5	☐	4.7%	FACU
3. Asclepias syriaca	2	☐	1.9%	FACU
4. Euthamia graminifolia	2	☐	1.9%	FAC
5. Scirpus cyperinus	2	☐	1.9%	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%	
	106	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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	1	x 1 =	1	
FACW species	97	x 2 =	194	
FAC species	2	x 3 =	6	
FACU species	7	x 4 =	28	
UPL species	0	x 5 =	0	
Column Totals:	107	(A)	229	(B)

Prevalence Index = B/A = 2.140

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.)

Hydrophytic vegetation indicator present as rapid test, dominant species is FACW

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

Soil

Sampling Point: **w-aeh-20200922-04**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-6	10YR	4/2	90	10YR	4/6	10	C	PL	Silt Loam	distinct redox concentrations
6-12	2.5Y	5/2	80	10YR	4/4	20	C	PL	Sandy Clay Loam	prominent redox concentrations
12-18	2.5Y	5/1	75	10YR	4/4	25	C	PL	Sandy Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common prominent redox concentrations in pore linings in sandy soil.

Wetland 003

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-04**

Metric 1. Wetland Area (size).

2	2
max 6 pts	subtotal

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)
x	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)

0.86 acres

Metric 2. Upland buffers and surrounding land use.

5	7
max 14 pts.	subtotal

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)
x	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)
x	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
x	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

10.0	17.0
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

	>0.7 (27.6in) (3)
	0.4 to 0.7m (15.7 to 27.6in) (2)
x	<0.4m (<15.7in) (1)

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

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

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

	None or none apparent (12)
x	Recovered (7)
x	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8	25
max 20 pts.	subtotal

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

	None or none apparent (4)
	Recovered (3)
x	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)
x	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)
x	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

25	
subtotal this page	ORAM v. 5.0 Field Form Quantitative Rating

Wetland 003

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-04

	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 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)

-3	22
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, 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)
- [x] 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.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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

22	**GRAND TOTAL(max 100 pts)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 003 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing North	

Wetland 003 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing East	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 003 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing South	

Wetland 003 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 003

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Soil Pit

Wetland 004

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-01

Investigator(s): AEH, WRL | Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.76567 | Long.: -82.09622 | Datum: NAD83

Soil Map Unit Name: Ds - Dumps, mine | 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:

Sample point w-aeh-20200922-01 point in to PEM wetland 004, in drainage swale along north side of road in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to west into woodlot towards creek. Mapped soil unit of Dumps=disturbed soils, within floodplain=problematic soils.

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 ◉	Depth (inches): 0	
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:

One primary and one secondary hydrology indicators present. Primary sources of hydrology are overbank flow from perennial stream 001 (Moxahala Creek) and precipitation and concentration of surface runoff in geomorphic position. Wetland abuts perennial stream Moxahala Creek that flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-01**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1.		☐	0.0%	
2.		☐	0.0%	
3.		☐	0.0%	
4.		☐	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' r)				
1. Phalaris arundinacea	70	☑	55.1%	FACW
2. Leersia oryzoides	20	☐	15.7%	OBL
3. Panicum dichotomiflorum	15	☐	11.8%	FACW
4. Echinochloa crusgalli	10	☐	7.9%	FACU
5. Persicaria hydropiper	5	☐	3.9%	OBL
6. Persicaria pensylvanica	3	☐	2.4%	FACW
7. Rumex crispus	3	☐	2.4%	FAC
8. Symphyotrichum lateriflorum	1	☐	0.8%	FACW
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	127	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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	89	x 2 =	178	
FAC species	3	x 3 =	9	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	127	(A)	252	(B)

Prevalence Index = B/A = 1.984

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.)

Hydrophytic vegetation indicator present as rapid test, dominant species is FACW

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

Soil

Sampling Point: **w-aeh-20200922-01**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-5	2.5Y	4/3	80	2.5Y	5/1	20	RM	M	Silt Loam	
5-11	2.5Y	5/1	70	10YR	4/6	30	C	M	Sandy Loam	prominent redox concentrations
11-17	10YR	5/1	80	10YR	4/6	20	C	M	Sandy Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common prominent redox concentrations in matrix and pore linings.

Upland 003

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200922-01

Investigator(s): AEH, WRL Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): flat Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76589 Long.: -82.09628 Datum: NAD83

Soil Map Unit Name: Ds - Dumps, mine 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:

Sample point Upland 003 (upl-aeh-20200922-01) point out to wetland 004, about 5' north of wetland boundary at higher elevation, in 100-year floodplain of Moxahala Creek (Stream 001). Mapped soil unit of Dumps=disturbed soils, within 100-year floodplain = possibly problematic soils. Not a wetland point, does not meet hydric soil criteria

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 ◉ Depth (inches): 0

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:

Two secondary hydrology indicators present.

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

Sampling Point: **upl-aeh-20200922-01**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
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' r)				
1. Phalaris arundinacea	30	☑	24.0%	FACW
2. Symphyotrichum pilosum	20	☑	16.0%	FAC
3. Euthamia graminifolia	15	☑	12.0%	FAC
4. Setaria pumila	10	☐	8.0%	FAC
5. Echinochloa crusgalli	10	☐	8.0%	FACU
6. Solidago gigantea	10	☐	8.0%	FACW
7. Symphyotrichum lateriflorum	10	☐	8.0%	FACW
8. Panicum dichotomiflorum	5	☐	4.0%	FACW
9. Andropogon virginicus	5	☐	4.0%	FACU
10. Andropogon gerardii	5	☐	4.0%	FAC
11. Ambrosia artemisiifolia	5	☐	4.0%	FACU
12.	0	☐	0.0%	
	125	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	55	x 2 =	110	
FAC species	50	x 3 =	150	
FACU species	20	x 4 =	80	
UPL species	0	x 5 =	0	
Column Totals:	125	(A)	340	(B)

Prevalence Index = B/A = 2.720

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW and FAC

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

Soil

Sampling Point: **upl-aeh-20200922-01**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-4	2.5YR	5/3	100						Silt Loam	
4-16	10YR	4/6	80	2.5Y	5/2	20	D	M	Sandy Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

No hydric soil indicators present.

Wetland 004

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-01**

Metric 1. Wetland Area (size).

max 6 pts	subtotal
1	1

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)
x	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
	<0.1 acres (0.04ha) (0 pts)

x 0.18 acres

Metric 2. Upland buffers and surrounding land use.

max 14 pts.	subtotal
5	6

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)
x	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)
x	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
x	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts.	subtotal
8.0	14.0

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

	>0.7 (27.6in) (3)
	0.4 to 0.7m (15.7 to 27.6in) (2)
x	<0.4m (<15.7in) (1)

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

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

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

	None or none apparent (12)
	Recovered (7)
x	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

max 20 pts.	subtotal
8	22

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

	None or none apparent (4)
	Recovered (3)
x	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)
x	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)
x	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

22 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 004

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-01

	22
	subtotal this page
0	22
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	20
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, 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)
- [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)
- [x] 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.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 004	
Date: September 22, 2020 **Description:** PEM wetland Category 1 Facing North	

Wetland 004	
Date: September 22, 2020 **Description:** PEM wetland Category 1 Facing East	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 004

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Facing South

Wetland 004

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 004 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Soil Pit	

Wetland 005

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-05

Investigator(s): AEH, WRL | Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.76545 | Long.: -82.09571 | Datum: NAD83

Soil Map Unit Name: W - Water | NWI classification:

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:

Sample point w-aeh-20200922-05 point in to PEM wetland 005, in small depression in 100-year floodplain of Moxahala Creek (Stream 001). Wetland fully delineated. Mapped soil unit of Water is surrounded by mapped soil unit of Dumps=disturbed soils, within 100-year floodplain = potentially problematic soils.

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 ◉	Depth (inches): 0	
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:

Two secondary hydrology indicators present. Primary source of hydrology is overbank flow from perennial Stream 001 (Moxahala Creek) and concentration of precipitation and surface runoff in geomorphic position. Wetland drains via culvert under roadway to north to Wetland 004, which drains west to perennial stream Moxahala Creek, which flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-05**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
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' r)				
1. Phalaris arundinacea	95	☑	89.6%	FACW
2. Apocynum cannabinum	5	☐	4.7%	FACU
3. Cirsium arvense	5	☐	4.7%	FACU
4. Lactuca canadensis	1	☐	0.9%	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%	
	106	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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	0	x 1 =	0	
FACW species	95	x 2 =	190	
FAC species	0	x 3 =	0	
FACU species	11	x 4 =	44	
UPL species	0	x 5 =	0	
Column Totals:	106	(A)	234	(B)

Prevalence Index = B/A = 2.208

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.)

Hydrophytic vegetation indicator present as rapid test, dominant species is FACW

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

Soil

Sampling Point: **w-aeh-20200922-05**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Shovel refusal at surface. Entire wetland area comprised of hard packed rock/stone/mixed fill, no soils available to excavate, consistent with disturbed soils having indicators of hydrophytic vegetation and wetland hydrology consistent with hydric soils likely at this location. Three other wetlands are present in similar landscape positions as this one, all with hydric soil indicators present.

Upland 004

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200922-04

Investigator(s): AEH, WRL Section, Township, Range: S 20 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope: 2.0 % / 63.4 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76541 Long.: -82.09577 Datum: NAD83

Soil Map Unit Name: W - Water 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:

Sample point Upland 004 (upl-aeh-20200922-04) point out to wetland 005, about 5' west of wetland boundary at higher elevation, in 100-year floodplain of Moxahala Creek (Stream 001). Mapped soil unit of Water is surrounded by mapped soil unit of Dumps=disturbed soils, within 100-year floodplain = potentially problematic soils. Not a wetland point as no wetland criteria met.

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 ◉	Depth (inches): 0	
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 hydrology indicators present.

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

Upland 004

Sampling Point: **upl-aeh-20200922-04**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' r)				
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: 15' r)				
1. Lonicera morrowii	15	☑	68.2%	FACU
2. Rubus occidentalis	5	☑	22.7%	UPL
3. Fraxinus pennsylvanica	2	☐	9.1%	FACW
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%	
	22	= 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' r)				
1. Solidago altissima	80	☑	76.2%	FACU
2. Setaria pumila	15	☐	14.3%	FAC
3. Dipsacus fullonum	10	☐	9.5%	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: 15' r)				
1. Vitis riparia	5	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	5	= 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:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	25.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	7	**x 2 =**	14	
FAC species	15	**x 3 =**	45	
FACU species	105	**x 4 =**	420	
UPL species	5	**x 5 =**	25	
Column Totals:	132	**(A)**	504	**(B)**

Prevalence Index = B/A = 3.818

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.)

No hydrophytic vegetation indicators present as dominance test is not > 50%, dominant species are FACW, FAC and FACU, and prevalence index > 3.0

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

Soil

Sampling Point: **upl-aeh-20200922-04**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR 3/3	100					Silt Loam	gravelly

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Shovel refusal at 3" with mixed gravel fill. No hydric soil indicators present in disturbed soils. No indicators for hydrophytic vegetation or wetland hydrology present either.

Wetland 005

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-05**

Metric 1. Wetland Area (size).

0 | 0 (max 6 pts | subtotal)

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)
- [x] <0.1 acres (0.04ha) (0 pts)

0.02 acres

Metric 2. Upland buffers and surrounding land use.

5 | 5 (max 14 pts. | subtotal)

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)
- [x] 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7.0 | 12.0 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

5.5 | 17.5 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [x] 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)
- [x] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

17.5 (subtotal this page) ORAM v. 5.0 Field Form Quantitative Rating

Wetland 005

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-05

	17.5 subtotal this page
0 max 10 pts.	**17.5** 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 max 20pts.	**13.5** subtotal

Metric 6. Plant communities, interspersion, 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)
- [x] 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.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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

13.5 **GRAND TOTAL(max 100 pts)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 005 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing North	

Wetland 005 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing North	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 005

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Facing South

Wetland 005

Date:

September 22, 2020

Description:

PEM wetland

Category 1

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 005	
Date: September 22, 2020	
Description: PEM wetland Category 1 Soil Pit	

Wetland 006

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: w-aeh-20200922-06

Investigator(s): AEH, WRL Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.75963 Long.: -82.0897 Datum: NAD83

Soil Map Unit Name: GnB - Glenford silt loam, 1 to 8 percent slopes NWI classification:

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:

Sample point w-aeh-20200922-06 point in to PSS wetland 006, in depression in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to north outside of study area into woodlot. Within 100-year floodplain=potentially problematic soils.

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 ◉	Depth (inches): 0	
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:

Multiple primary and secondary hydrology indicators present. Primary sources of hydrology are precipitation and concentration of surface runoff in geomorphic position and overbank flow from perennial Stream 001 (Moxahala Creek). Wetland drains to west to Wetland 007, also in mapped 100-year floodplain of perennial stream Moxahala Creek, which flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-06**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1. Cephalanthus occidentalis	20	☑	50.0%	OBL
2. Acer saccharinum	10	☑	25.0%	FACW
3. Cornus alba	10	☑	25.0%	FACW
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%	
	40	= 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' r)				
1. Dichanthelium dichotomum	20	☑	20.0%	FAC
2. Persicaria hydropiper	15	☑	15.0%	OBL
3. Panicum virgatum	15	☑	15.0%	FAC
4. Persicaria sagittata	10	☑	10.0%	OBL
5. Leersia oryzoides	10	☑	10.0%	OBL
6. Juncus effusus	10	☑	10.0%	FACW
7. Panicum dichotomiflorum	5	☐	5.0%	FACW
8. Eupatorium perfoliatum	5	☐	5.0%	FACW
9. Symphyotrichum novae-angliae	5	☐	5.0%	FACW
10. Scirpus atrovirens	5	☐	5.0%	OBL
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (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	60	x 1 =	60	
FACW species	45	x 2 =	90	
FAC species	35	x 3 =	105	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	140	(A)	255	(B)

Prevalence Index = B/A = 1.821

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are OBL, FACW and FAC.

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

Soil

Sampling Point: **w-aeh-20200922-06**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-2	10YR	4/1	98	10YR	5/6	20	C	PL	Silt Loam	prominent redox concentrations
2-16	10YR	3/1	80	10YR	4/6	20	C	PL	Silty Clay Loam	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicators present as low chroma/high value matrix and low chroma/low value matrix with prominent redox concentrations in pore linings.

Upland 005

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: upl-aeh-20200922-05

Investigator(s): AEH, WRL | Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): flat | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.75959 | Long.: -82.09003 | Datum: NAD83

Soil Map Unit Name: Ne - Newark silt loam, 0 to 3 percent slopes, frequently 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:

Sample point Upland 005 (upl-aeh-20200922-05) point out to wetland 006, about 5' west of wetland boundary at equal elevation at edge of mowed grassy field, in 100-year floodplain of Moxahala Creek (Stream 001). Within maped 100-year floodplain=potentially problematic soils. Not a wetland point as hydrophytic vegetation criteria not met.

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 ◉	Depth (inches): 0	
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:

One primary hydrology indicator present. Primary source of hydrology is overbank flow from perennial Stream 001 (Moxahala Creek), which flows north to Muskingum River, a TNW.

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

Upland 005

Sampling Point: **upl-aeh-20200922-05**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' r)			
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: 15' r)			
1. Rubus occidentalis	5	☑ 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%	
	5	= 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' r)			
1. Solidago altissima	30	☑ 30.6%	FACU
2. Apocynum cannabinum	20	☑ 20.4%	FACU
3. Lysimachia nummularia	20	☑ 20.4%	FACW
4. Glechoma hederacea	15	☐ 15.3%	FACU
5. Vernonia gigantea	10	☐ 10.2%	FAC
6. Lactuca canadensis	3	☐ 3.1%	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%	
	98	= Total Cover	
Woody Vine Stratum (Plot size: 15' r)			
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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	10	x 3 =	30	
FACU species	68	x 4 =	272	
UPL species	5	x 5 =	25	
Column Totals:	103	(A)	367	(B)

Prevalence Index = B/A = 3.563

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.)

No hydrophytic vegetation indicators present as dominance test is not > 50%, dominant species are FACW, FACU and UPL, and prevalence index > 3.0

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

Soil

Sampling Point: **upl-aeh-20200922-05**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-4	10YR	4/2	100						Silt Loam	
4-17	10YR	3/1	80	10YR	4/3	15	C	M	Silty Clay	faint redox concentrations
				10YR	5/6	5	C	PL		prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present aslow chroma/low value matrix with prominent redox concentrations in pore linings.

Wetland 006

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-06**

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts | subtotal)

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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

0.14 acres

Metric 2. Upland buffers and surrounding land use.

5 | 6 (max 14 pts. | subtotal)

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)
- [x] 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

8.0 | 14.0 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

6 | 20 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] 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)
- [x] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

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

20 (subtotal this page) ORAM v. 5.0 Field Form Quantitative Rating

Wetland 006

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-06

	20
	subtotal this page
0	20
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	22
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [0] 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)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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

22	**GRAND TOTAL(max 100 pts)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 006 **Date:** September 22, 2020 **Description:** PSS wetland Category 1 Facing North	

Wetland 006 **Date:** September 22, 2020 **Description:** PSS wetland Category 1 Facing East	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 006 **Date:** September 22, 2020 **Description:** PSS wetland Category 1 Facing South	

Wetland 006 **Date:** September 22, 2020 **Description:** PSS wetland Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 006

Date:

September 22, 2020

Description:

PSS wetland

Category 1

Soil Pit

Wetland 007

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-07

Investigator(s): AEH, WRL | Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.75972 | Long.: -82.09079 | Datum: NAD83

Soil Map Unit Name: Ne - Newark silt loam, 0 to 3 percent slopes, frequently 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:

Sample point w-aeh-20200922-07 point in to PFO wetland 007, in depression in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to north outside of study area through woodlot. Within 100-year floodplain=potentially problematic soils.

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 ◉	Depth (inches): 0	
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:

One primary and multiple secondary hydrology indicators present. Primary sources of hydrology are overbank flow from perennial stream 001 (Moxahala Creek) and precipitation and concentration of surface runoff in geomorphic position. Wetland drains to west to perennial Moxahala Stream which flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-07**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' r)				
1. Acer saccharinum	40	☑	66.7%	FACW
2. Ulmus rubra	20	☑	33.3%	FAC
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		
Sapling-Sapling/Shrub Stratum (Plot size: 15' r)				
1. Ulmus rubra	15	☑	34.9%	FAC
2. Acer negundo	15	☑	34.9%	FAC
3. Acer saccharinum	10	☑	23.3%	FACW
4. Lonicera morrowii	3	☐	7.0%	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%	
	43	= 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' r)				
1. Lysimachia nummularia	20	☑	24.1%	FACW
2. Carex lurida	15	☑	18.1%	OBL
3. Carex scoparia	10	☑	12.0%	FACW
4. Symphyotrichum lateriflorum	10	☑	12.0%	FACW
5. Glyceria striata	10	☑	12.0%	OBL
6. Laportea canadensis	5	☐	6.0%	FAC
7. Solidago caesia	5	☐	6.0%	FACU
8. Geum canadense	3	☐	3.6%	FACU
9. Persicaria pensylvanica	3	☐	3.6%	FACW
10. Phalaris arundinacea	2	☐	2.4%	FACW
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	83	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
1. Toxicodendron radicans	20	☑	50.0%	FAC
2. Vitis riparia	20	☑	50.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	40	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 12 (A)

Total Number of Dominant Species Across All Strata: 12 (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	115	x 2 =	230	
FAC species	75	x 3 =	225	
FACU species	11	x 4 =	44	
UPL species	0	x 5 =	0	
Column Totals:	226	(A)	524	(B)

Prevalence Index = B/A = 2.319

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are OBL, FACW and FAC.

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

Soil

Sampling Point: **w-aeh-20200922-07**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-7	2.5Y	4/2	70	2.5Y	4/1	20	D	M	Sandy Clay	redox depletions present
				2.5Y	5/6	10	C	PL		prominent redox concentrations
7-17	2.5Y	4/1	60	2.5Y	5/6	40	C	M	Sandy Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common prominent redox concentrations in pore linings in sandy soil.

Upland 006

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200922-06

Investigator(s): AEH, WRL Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.75961 Long.: -82.09108 Datum: NAD83

Soil Map Unit Name: Ne - Newark silt loam, 0 to 3 percent slopes, frequently 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:

Sample point Upland 006 (upl-aeh-20200922-06) point out to wetland 007, about 20' west of wetland boundary at higher elevation. In 100-year floodplain of Moxahala Creek (Stream 001)=potentially problematic soils. Not a wetland point as hydric soil and wetland hydrology criteria not met.

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 ◉ Depth (inches): 0

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 hydrology indicators present.

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

Upland 006

Sampling Point: **upl-aeh-20200922-06**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' r)				
1. Prunus serotina	10	☑	76.9%	FACU
2. Populus deltoides	3	☑	23.1%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	13	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' r)				
1. Rubus occidentalis	20	☑	44.4%	UPL
2. Acer negundo	15	☑	33.3%	FAC
3. Prunus serotina	5	☐	11.1%	FACU
4. Lonicera morrowii	5	☐	11.1%	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%	
	45	= 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' r)				
1. Impatiens capensis	50	☑	76.9%	FACW
2. Phytolacca americana	10	☐	15.4%	FACU
3. Verbesina alternifolia	5	☐	7.7%	FAC
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%	
	65	= 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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	50	x 2 =	100	
FAC species	23	x 3 =	69	
FACU species	30	x 4 =	120	
UPL species	20	x 5 =	100	
Column Totals:	123	(A)	389	(B)

Prevalence Index = B/A = 3.163

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW, FAC, FACU and UPL

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

Soil

Sampling Point: **upl-aeh-20200922-06**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-7	10YR	4/1	90	10YR	4/3	10	C	M	Silty Clay Loam	faint redox concentrations
7-16	10YR	4/3	85	10YR	5/1	15	D	M	Sandy Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

No hydric soil indicators present; low chroma/high value matrix without redox concentrations in pore linings.

Wetland 007

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-07**

Metric 1. Wetland Area (size).

2	2
max 6 pts	subtotal

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)
x	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)

0.46 acres

Metric 2. Upland buffers and surrounding land use.

5	7
max 14 pts.	subtotal

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)
x	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)
x	LOW. Old field (>10 years), shrubland, young second growth forest. (5)
x	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
	HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

8.0	15.0
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

	>0.7 (27.6in) (3)
	0.4 to 0.7m (15.7 to 27.6in) (2)
x	<0.4m (<15.7in) (1)

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

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

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

	None or none apparent (12)
	Recovered (7)
x	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

10	25
max 20 pts.	subtotal

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

	None or none apparent (4)
x	Recovered (3)
x	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)
x	Fair (3)
	Poor to fair (2)
	Poor (1)

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

	None or none apparent (9)
x	Recovered (6)
x	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

25	
subtotal this page	ORAM v. 5.0 Field Form Quantitative Rating

Wetland 007

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-07

	25

subtotal this page

0	25	**Metric 5. Special Wetlands.**
max 10 pts.	subtotal	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)

1	26	**Metric 6. Plant communities, interspersion, microtopography.**
max 20pts.	subtotal	

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [1] 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.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 007 **Date:** September 22, 2020 **Description:** PFO wetland Category 1 Facing North	

Wetland 007 **Date:** September 22, 2020 **Description:** PFO wetland Category 1 Facing East	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 007 **Date:** September 22, 2020 **Description:** PFO wetland Category 1 Facing South	

Wetland 007 **Date:** September 22, 2020 **Description:** PFO wetland Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 007

Date:

September 22, 2020

Description:

PFO wetland

Category 1

Soil Pit

Wetland 008

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-09

Investigator(s): AEH, WRL | Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.76034 | Long.: -82.09372 | Datum: NAD83

Soil Map Unit Name: No - Nolin 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:

Sample point w-aeh-20200922-09 point in to PEM wetland 008, in constructed drainage swale along railroad grade, in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to north outside of study area. Within 100-year floodplain=potentially problematic soils.

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 ◉ Depth (inches): 0

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:

Two secondary hydrology indicators present. Primary source of hydrology is overbank flow from perennial Stream 001 (Moxahala Creek) and concentration of precipitation and surface runoff in geomorphic position. Wetland drains to east to perennial Moxahala Creek that flows north to Muskingum River, a TNW

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

Sampling Point: **w-aeh-20200922-09**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 15' x 60')				
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: 15' x 30')				
1. Rubus occidentalis	5	☑	62.5%	UPL
2. Quercus palustris	3	☑	37.5%	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%	
	8	= 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' r)				
1. Panicum dichotomiflorum	30	☑	30.6%	FACW
2. Persicaria hydropiper	20	☑	20.4%	OBL
3. Scirpus cyperinus	15	☐	15.3%	FACW
4. Echinochloa crusgalli	10	☐	10.2%	FACU
5. Bidens frondosa	10	☐	10.2%	FACW
6. Dichanthelium clandestinum	5	☐	5.1%	FAC
7. Dichanthelium dichotomum	5	☐	5.1%	FAC
8. Solidago rugosa	3	☐	3.1%	FAC
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	98	= Total Cover		
Woody Vine Stratum (Plot size: 15' x 30')				
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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	20	**x 1 =**	20	
FACW species	58	**x 2 =**	116	
FAC species	13	**x 3 =**	39	
FACU species	10	**x 4 =**	40	
UPL species	5	**x 5 =**	25	
Column Totals:	106	**(A)**	240	**(B)**

Prevalence Index = B/A = 2.264

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW, FAC and UPL. Sample plots adjusted to constrain to wetland configuration in swale.

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

Soil

Sampling Point: **w-aeh-20200922-09**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR	3/2	100						Loam	
3-7	10YR	5/1	60	10YR	3/1	30	D	M	Sandy Clay	depletions present
				10YR	4/3	10	C	PL		distinct redox concentrations
7-15	7.5YR	5/6	70	7.5YR	6/2	30	D	M	Sandy Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common redox depletions in matrix as manganese modules and redox concentrations in pore linings.

Upland 007

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200922-08

Investigator(s): AEH, WRL Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): flat Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76018 Long.: -82.09323 Datum: NAD83

Soil Map Unit Name: No - Nolin 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:

Sample point Upland 007 (upl-aeh-20200922-08) point out to wetland 008, about 30' east of wetland boundary at higher elevation in powerline ROW crossing. In 100-year floodplain of Moxahala Creek (Stream 001)=potentially problematic soils. Not a wetland point as hydric soil and hydrology criteria not met.

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 ◉ Depth (inches): 0

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:

One secondary hydrology indicator present.

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

Sampling Point: **upl-aeh-20200922-08**

Tree Stratum (Plot size: 30' r)	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: 15' r)				
1. Rubus occidentalis	10	☑	50.0%	UPL
2. Rhus copallinum	5	☑	25.0%	FACU
3. Quercus palustris	3	☐	15.0%	FACW
4. Betula nigra	2	☐	10.0%	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%	
	20	= 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' r)				
1. Solidago gigantea	50	☑	50.0%	FACW
2. Dichanthelium clandestinum	20	☑	20.0%	FAC
3. Solidago rugosa	10	☐	10.0%	FAC
4. Panicum dichotomiflorum	10	☐	10.0%	FACW
5. Lactuca canadensis	5	☐	5.0%	FACU
6. Taraxacum officinale	3	☐	3.0%	FACU
7. Scirpus atrovirens	2	☐	2.0%	OBL
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:	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	2	x 1 =	2
FACW species	65	x 2 =	130
FAC species	30	x 3 =	90
FACU species	13	x 4 =	52
UPL species	10	x 5 =	50
Column Totals:	120 (A)		324 (B)

Prevalence Index = B/A = 2.700

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.)

Hydrophytic vegetation indicator present as prevalence index < 3.0, dominant species are FACW, FAC, FACU and UPL

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

Soil

Sampling Point: **upl-aeh-20200922-08**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-4	10YR	3/2	100						Silt Loam	
4-15	10YR	5/6	90	10YR	4/2	10	D	M	Sandy Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

No hydric soil indicators present.

Wetland 008

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id: **w-aeh-20200922-09**

Metric 1. Wetland Area (size).

0 | 0 (max 6 pts | subtotal)

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)
- [x] <0.1 acres (0.04ha) (0 pts)

0.08 acres

Metric 2. Upland buffers and surrounding land use.

8 | 8 (max 14 pts. | subtotal)

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)
- [x] 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

8.0 | 16.0 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

10 | 26 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] 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)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

26 (subtotal this page) ORAM v. 5.0 Field Form Quantitative Rating

Wetland 008

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-09

	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, interspersion, 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)
- [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)
- [ ] Nearly absent <5% cover (0)
- [x] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] 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 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 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 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 generallyw/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)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 008	
Date: September 22, 2020 **Description:** PEM wetland Category 1 Facing North	

Wetland 008	
Date: September 22, 2020 **Description:** PEM wetland Category 1 Facing East	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 008 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing South	

Wetland 008 **Date:** September 22, 2020 **Description:** PEM wetland Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 008	
Date: September 22, 2020	
Description: PEM wetland Category 1 Soil Pit	

Wetland 009a

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-08a

Investigator(s): AEH, WRL | Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.7608 | Long.: -82.09493 | Datum: NAD83

Soil Map Unit Name: No - Nolin silt loam, 0 to 3 percent slopes, occasionally flooded | NWI classification: PSS1/EM1C

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:

Sample point w-aeh-20200922-08a PEM point in to wetland 009a, one component of a larger PEM/PSS/PFO complex, at toe of slope to highway and in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to north outside of study area. Within 100-year floodplain=potentially problematic soils, at toe of highway embankment.

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 ◉	Depth (inches): 0	
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:

One primary and two secondary hydrology indicators present. Primary sources of hydrology are precipitation, concentration of surface runoff in geomorphic position and overbank flow from perennial Stream 001 (Moxahala Creek), which flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-08a**

Tree Stratum (Plot size: 15' x 60')	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: 15' x 30')				
1. Betula nigra	10	☑	100.0%	FACW
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%	
	10	= 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' r)				
1. Panicum virgatum	60	☑	57.1%	FAC
2. Scirpus cyperinus	25	☑	23.8%	FACW
3. Panicum dichotomiflorum	10	☐	9.5%	FACW
4. Andropogon gerardii	5	☐	4.8%	FAC
5. Juncus effusus	5	☐	4.8%	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%	
	105	= Total Cover		
Woody Vine Stratum (Plot size: 15' x 30')				
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:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	50	x 2 =	100	
FAC species	65	x 3 =	195	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	115	(A)	295	(B)

Prevalence Index = B/A = 2.565

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW and FAC. Sample plots adjusted to long and narrow to adequately characterize PEM component of wetland complex.

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

Soil

Sampling Point: **w-aeh-20200922-08a**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-2	7.5YR	3/3	100						Silt Loam	
2-9	2.5Y	4/1	80	10YR	4/4	20	C	PL	Clay	distinct redox concentrations
9-16	2.5Y	5/1	80	2.5Y	4/4	20	C	M	Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common distinct redox concentrations in matrix and pore linings.

Wetland 009b

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: w-aeh-20200922-08b

Investigator(s): AEH, WRL Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76073 Long.: -82.09475 Datum: NAD83

Soil Map Unit Name: No - Nolin silt loam, 0 to 3 percent slopes, occasionally flooded NWI classification: PSS1/EM1C

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:

Sample point w-aeh-20200922-08b PSS point in to wetland 009b, one component of a larger PEM/PSS/PFO complex, in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to north and south outside of study area. Within 100-year floodplain=potentially problematic soils.

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 ◉	Depth (inches): 0	
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:

Multiple primary and secondary hydrology indicators present. Primary sources of hydrology are precipitation, concentration of surface runoff in geomorphic position and overbank flow from perennial Stream 001 (Moxahala Creek). Wetland drains to east to prennial Moxahala Creek that drains north to Muskingum River, a TNW

Wetland 009b

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

Sampling Point: **w-aeh-20200922-08b**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' r)				
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: 15' r)				
1. Betula nigra	60	☑	73.2%	FACW
2. Rubus occidentalis	20	☑	24.4%	UPL
3. Quercus palustris	2	☐	2.4%	FACW
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%	
	82	= 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' r)				
1. Scirpus cyperinus	30	☑	60.0%	FACW
2. Panicum dichotomiflorum	15	☑	30.0%	FACW
3. Onoclea sensibilis	5	☐	10.0%	FACW
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%	
	50	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	112	**x 2 =**	224	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	20	**x 5 =**	100	
Column Totals:	132	**(A)**	324	**(B)**

Prevalence Index = B/A = 2.455

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW and UPL

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

Soil

Sampling Point: **w-aeh-20200922-08b**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-2	7.5YR	3/3	100						Silt Loam	
2-9	2.5Y	4/1	80	10YR	4/4	20	C	PL	Clay	distinct redox concentrations
9-16	2.5Y	5/1	80	2.5Y	4/4	20	C	M	Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common distinct redox concentrations in matrix and pore linings.

Wetland 009c

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line | City/County: Perry | Sampling Date: 22-Sep-20

Applicant/Owner: AEP | State: OH | Sampling Point: w-aeh-20200922-08c

Investigator(s): AEH, WRL | Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave | Slope: 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR N | Lat.: 39.7609 | Long.: -82.09471 | Datum: NAD83

Soil Map Unit Name: No - Nolin silt loam, 0 to 3 percent slopes, occasionally flooded | NWI classification: PSS1/EM1C

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:

Sample point w-aeh-20200922-08c PFO point in to wetland 009c, one component of a larger PEM/PSS/PFO complex, in 100-year floodplain of Moxahala Creek (Stream 001). Wetland extends to north and south outside of study area. Within 100-year floodplain=potentially problematic soils.

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 ◉	Depth (inches): 0	
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:

Multiple primary and secondary hydrology indicators present. Primary sources of hydrology are precipitation, concentration of surface runoff in geomorphic position and overbank flow from perennial Stream 001 (Moxahala Creek). Wetland drains to east to perennial stream Moxahala Creek that flows north to Muskingum River, a TNW.

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

Sampling Point: **w-aeh-20200922-08c**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Acer saccharinum	40	✔	57.1%	FACW
2. Betula nigra	30	✔	42.9%	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%	
	70	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15' r)				
1. Betula nigra	20	✔	58.8%	FACW
2. Liriodendron tulipifera	5	☐	14.7%	FACU
3. Fraxinus pennsylvanica	5	☐	14.7%	FACW
4. Asimina triloba	2	☐	5.9%	FAC
5. Liquidambar styraciflua	2	☐	5.9%	FAC
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	34	= 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' r)				
1. Cinna arundinacea	5	✔	50.0%	FACW
2. Rubus idaeus	5	✔	50.0%	FAC
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%	
	10	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
1. Toxicodendron radicans	10	✔	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	10	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	19	x 3 =	57	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	124	(A)	277	(B)

Prevalence Index = B/A = 2.234

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW and FAC

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

Soil

Sampling Point: **w-aeh-20200922-08c**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-2	2.5Y	4/4	100						Silt Loam	
2-7	2.5Y	4/1	80	2.5Y	4/4	20	C	M	Clay	distinct redox concentrations
7-16	2.5Y	5/1	80	2.5Y	4/4	20	C	PL	Clay	prominent redox concentrations

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

Hydric soil indicator present as low chroma/high value matrix with common distinct redox concentrations in matrix and pore linings.

Upland 008

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Crooksville-North Newark 138 kV Transmission Line City/County: Perry Sampling Date: 22-Sep-20

Applicant/Owner: AEP State: OH Sampling Point: upl-aeh-20200922-07

Investigator(s): AEH, WRL Section, Township, Range: S 21 T 14N R 14W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope: 1.0 % / 45.0 °

Subregion (LRR or MLRA): LRR N Lat.: 39.76054 Long.: -82.094706 Datum: NAD83

Soil Map Unit Name: No - Nolin 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:

Sample point Upland 008 (upl-aeh-20200922-07) point out to wetland 009, about 5' east of wetland boundary at higher elevation near railroad grade. In 100-year floodplain of Moxahala Creek (Stream 001)=potentially problematic soils. Not a wetland point as hydric soil and wetland hydrology criteria not met.

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 ◉ Depth (inches): 0

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:

One secondary hydrology indicator present.

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

Sampling Point: **upl-aeh-20200922-07**

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' r)				
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: 15' r)				
1. Rubus occidentalis	30	☑	36.1%	UPL
2. Sambucus nigra	25	☑	30.1%	FAC
3. Betula nigra	10	☐	12.0%	FACW
4. Hypericum prolificum	10	☐	12.0%	FACU
5. Prunus serotina	5	☐	6.0%	FACU
6. Ulmus rubra	3	☐	3.6%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	83	= 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' r)				
1. Polystichum acrostichoides	20	☑	39.2%	FACU
2. Onoclea sensibilis	10	☑	19.6%	FACW
3. Dichanthelium clandestinum	10	☑	19.6%	FAC
4. Thelypteris palustris	5	☐	9.8%	FACW
5. Symphyotrichum pilosum	3	☐	5.9%	FAC
6. Solidago rugosa	3	☐	5.9%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	51	= Total Cover		
Woody Vine Stratum (Plot size: 15' r)				
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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	25	x 2 =	50	
FAC species	44	x 3 =	132	
FACU species	35	x 4 =	140	
UPL species	30	x 5 =	150	
Column Totals:	134	(A)	472	(B)

Prevalence Index = B/A = 3.522

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.)

Hydrophytic vegetation indicator present as dominance test > 50%, dominant species are FACW, FAC, FACU and UPL

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

Soil

Sampling Point: **upl-aeh-20200922-07**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR	4/3	100						Silt Loam	
3-14	2.5Y	3/3	80	2.5Y	3/4	20	C	M	Sandy Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2] Location: 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 Soils [3]:

- ☐ 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:

No hydric soil indicators present.

Wetland 009

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-08

3 | 3 Metric 1. Wetland Area (size).

max 6 pts | subtotal

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)
- [x] 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)

1.50 acres
NWI is 5 acres

8 | 11 Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal

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)
- [x] 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10.0 | 21.0 Metric 3. Hydrology.

max 30 pts. | subtotal

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

11 | 32 Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] 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)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

32
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland 009

Site: Crooksville- Newark Project	Rater(s): Audrey Hanner	Date: 9/22/2020

Field Id:
w-aeh-20200922-08

	32

subtotal this page

0	32	**Metric 5. Special Wetlands.**
max 10 pts.	subtotal	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)

7	39	**Metric 6. Plant communities, interspersion, microtopography.**
max 20pts.	subtotal	

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
1	Shrub
2	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)
	Nearly absent <5% cover (0)
x	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	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 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 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 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 generallyw/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

39	**GRAND TOTAL(max 100 pts)**

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Crooksville-North Newark 138 kV Transmission Line Rebuild Project	60616110

Wetland 008	
Date: September 22, 2020	
Description: PEM wetland Category 1 Soil Pit	

Summary: Notice Letter of Notification Part 5 electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc.